Traffic Impact Study
Technical Appendix Volume IV of V

Steeplegate Mall Redevelopment
270 Loudon Road (NH Route 9)
Concord, New Hampshire

Prepared for:

Onyx Steeplegate Concord LLC *and*
Onyx Regal Concord, LLC
Needham, Massachusetts

July 2024
Revised May 2026

Prepared by:

Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

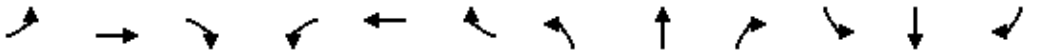
APPENDIX VOLUME IV

CAPACITY ANALYSIS WORKSHEETS

CAPACITY ANALYSIS WORKSHEETS

2024 Existing Weekday Morning Peak-Hour
2024 Existing Weekday Evening Peak-Hour
2024 Existing Saturday Midday Peak-Hour
2027 No-Build Weekday Morning Peak-Hour
2027 No-Build Weekday Evening Peak-Hour
2027 No-Build Saturday Midday Peak-Hour
2037 No-Build Weekday Morning Peak-Hour
2037 No-Build Weekday Evening Peak-Hour
2037 No-Build Saturday Midday Peak-Hour
2027 Opening Year Build Weekday Morning Peak-Hour
2027 Opening Year Build Weekday Evening Peak-Hour
2027 Opening Year Build Saturday Midday Peak-Hour
2037 Build Weekday Morning Peak-Hour
2037 Build Weekday Evening Peak-Hour
2037 Build Saturday Midday Peak-Hour
2027 Mitigated Opening Year Build Weekday Morning Peak-Hour
2027 Mitigated Opening Year Build Weekday Evening Peak-Hour
2027 Mitigated Opening Year Build Saturday Midday Peak-Hour
2037 Mitigated Build Weekday Morning Peak-Hour
2037 Mitigated Build Weekday Evening Peak-Hour
2037 Mitigated Build Saturday Midday Peak-Hour

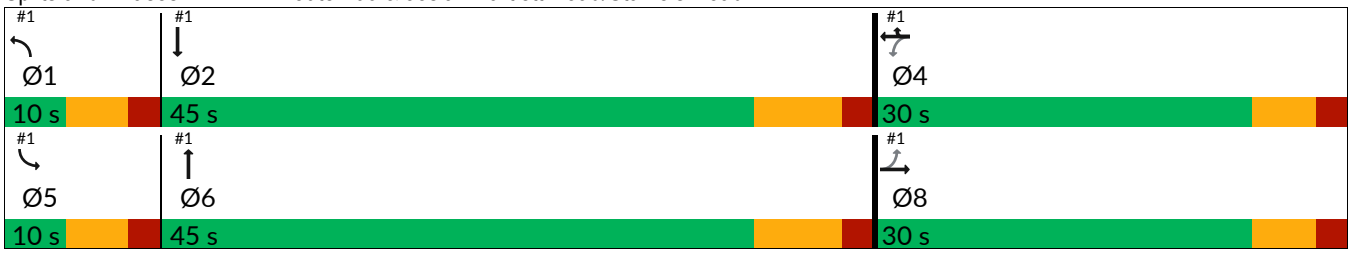
2024 Existing Weekday Morning Peak-Hour

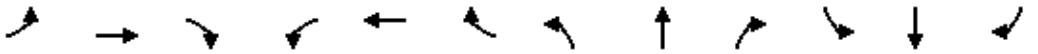


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	106	0	16	0	319	33	27	1050	3
Future Volume (vph)	3	1	8	106	0	16	0	319	33	27	1050	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.907				0.850		0.986				
Flt Protected		0.988			0.950					0.950		
Satd. Flow (prot)	0	1622	0	0	1736	1553	1776	3327	0	1736	3471	0
Flt Permitted		0.917			0.747					0.950		
Satd. Flow (perm)	0	1505	0	0	1365	1553	1776	3327	0	1736	3471	0
Satd. Flow (RTOR)		11				135		17				
Adj. Flow (vph)	4	1	11	129	0	20	0	375	39	31	1221	3
Lane Group Flow (vph)	0	16	0	0	129	20	0	414	0	31	1224	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.39	0.04		0.20		0.23	0.52	
Control Delay (s/veh)		12.3			22.8	0.2		8.5		32.0	7.9	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		12.3			22.8	0.2		8.5		32.0	7.9	
Queue Length 50th (ft)		1			34	0		28		10	117	
Queue Length 95th (ft)		12			80	0		78		36	194	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		764			688	849		2487		134	2591	
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			0.19	0.02		0.17		0.23	0.47	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 53.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





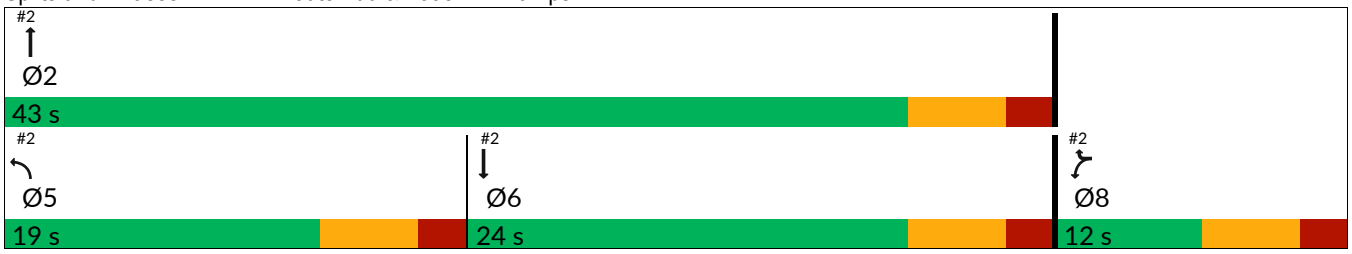
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	106	0	16	0	319	33	27	1050	3
Future Volume (vph)	3	1	8	106	0	16	0	319	33	27	1050	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.91			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1621			1736	1553		3326		1736	3470	
Flt Permitted		0.92			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1505			1365	1553		3326		1736	3470	
Peak-hour factor, PHF	0.75	0.75	0.75	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86
Adj. Flow (vph)	4	1	11	129	0	20	0	375	39	31	1221	3
RTOR Reduction (vph)	0	9	0	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	129	4	0	406	0	31	1224	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		9.1			9.1	9.1		29.1		1.4	36.5	
Effective Green, g (s)		11.1			11.1	11.1		31.1		1.4	38.5	
Actuated g/C Ratio		0.19			0.19	0.19		0.53		0.02	0.65	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		282			256	291		1750		41	2260	
v/s Ratio Prot						0.00		0.12		0.02	c0.35	
v/s Ratio Perm		0.00			c0.09							
v/c Ratio		0.03			0.50	0.01		0.23		0.76	0.54	
Uniform Delay, d1		19.6			21.5	19.5		7.6		28.7	5.5	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.6	0.0		0.1		55.2	0.3	
Delay (s)		19.6			23.1	19.6		7.6		83.9	5.8	
Level of Service		B			C	B		A		F	A	
Approach Delay (s/veh)		19.6			22.6			7.6			7.7	
Approach LOS		B			C			A			A	

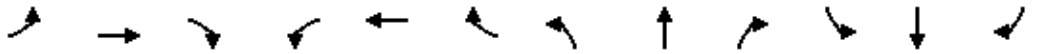
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	15.5
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	13	194	497	0	0	514	1089
Future Volume (vph)	0	0	0	3	0	13	194	497	0	0	514	1089
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Satd. Flow (RTOR)						179						825
Adj. Flow (vph)	0	0	0	4	0	19	249	637	0	0	598	1266
Lane Group Flow (vph)	0	0	0	4	0	19	249	637	0	0	598	1266
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.01		0.04	0.29	0.21			0.38	0.84
Control Delay (s/veh)				16.0		0.2	12.5	1.1			9.0	6.8
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				16.0		0.2	12.5	1.1			9.0	6.8
Queue Length 50th (ft)				1		0	15	0			32	0
Queue Length 95th (ft)				6		0	52	38			110	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				374		464	1263	3014			1899	1516
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		0.04	0.20	0.21			0.31	0.84

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 38.8
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	13	194	497	0	0	514	1089
Future Volume (vph)	0	0	0	3	0	13	194	497	0	0	514	1089
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1743		1509	3134	3231			3388	1516
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1743		1509	3134	3231			3388	1516
Peak-hour factor, PHF	0.90	0.90	0.90	0.69	0.69	0.69	0.78	0.78	0.78	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	4	0	19	249	637	0	0	598	1266
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	1	249	637	0	0	598	1266
Heavy Vehicles (%)	0%	0%	0%	7%	7%	7%	8%	8%	8%	3%	3%	3%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				0.9		0.9	8.7	30.8			16.1	43.7
Effective Green, g (s)				2.9		2.9	10.7	32.8			18.1	43.7
Actuated g/C Ratio				0.07		0.07	0.24	0.75			0.41	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				115		100	767	2425			1403	1516
v/s Ratio Prot				0.00		0.00	0.08	0.20			0.18	
v/s Ratio Perm												c0.84
v/c Ratio				0.03		0.01	0.32	0.26			0.43	0.84
Uniform Delay, d1				19.1		19.1	13.5	1.7			9.1	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		0.1	0.2	0.1			0.2	5.6
Delay (s)				19.2		19.1	13.8	1.8			9.3	5.6
Level of Service				B		B	B	A			A	A
Approach Delay (s/veh)		0.0			19.1			5.1			6.8	
Approach LOS		A			B			A			A	

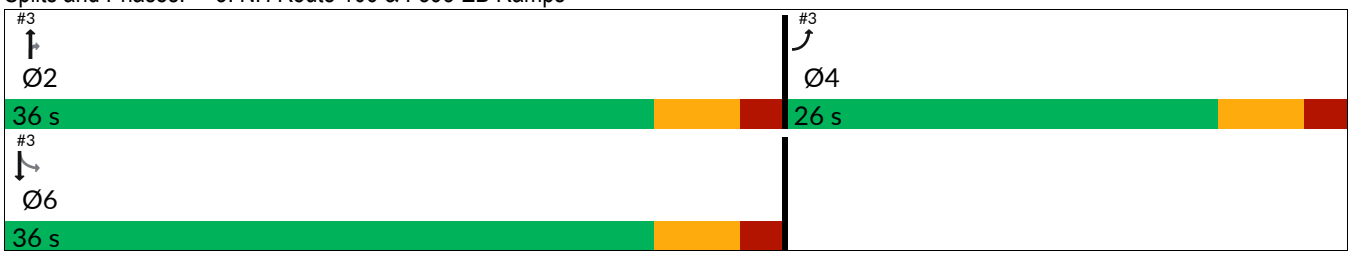
Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	43.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

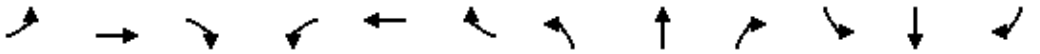
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	312	0	356	0	0	0	0	379	0	26	491	0
Future Volume (vph)	312	0	356	0	0	0	0	379	0	26	491	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850									
Flt Protected	0.950										0.997	
Satd. Flow (prot)	3303	0	2682	0	0	0	0	3261	1717	0	3411	0
Flt Permitted	0.950										0.917	
Satd. Flow (perm)	3303	0	2682	0	0	0	0	3261	1717	0	3137	0
Satd. Flow (RTOR)			429									
Adj. Flow (vph)	376	0	429	0	0	0	0	446	0	31	578	0
Lane Group Flow (vph)	376	0	429	0	0	0	0	446	0	0	609	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.35		0.16					0.31			0.44	
Control Delay (s/veh)	10.6		0.1					7.2			8.1	
Queue Delay	0.0		0.0					0.0			0.0	
Total Delay (s/veh)	10.6		0.1					7.2			8.1	
Queue Length 50th (ft)	26		0					26			37	
Queue Length 95th (ft)	57		0					52			70	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	2107		2682					2948			2836	
Starvation Cap Reductn	0		0					0			0	
Spillback Cap Reductn	0		0					0			0	
Storage Cap Reductn	0		0					0			0	
Reduced v/c Ratio	0.18		0.16					0.15			0.21	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 35.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	312	0	356	0	0	0	0	379	0	26	491	0
Future Volume (vph)	312	0	356	0	0	0	0	379	0	26	491	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0			4.0	
Lane Util. Factor	0.97		0.88					0.95			0.95	
Frt	1.00		0.85					1.00			1.00	
Flt Protected	0.95		1.00					1.00			1.00	
Satd. Flow (prot)	3303		2682					3261			3413	
Flt Permitted	0.95		1.00					1.00			0.92	
Satd. Flow (perm)	3303		2682					3261			3136	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	376	0	429	0	0	0	0	446	0	31	578	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	376	0	429	0	0	0	0	446	0	0	609	0
Heavy Vehicles (%)	6%	6%	6%	0%	0%	0%	7%	7%	7%	2%	2%	2%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	9.5		35.0					13.5			13.5	
Effective Green, g (s)	11.5		35.0					15.5			15.5	
Actuated g/C Ratio	0.33		1.00					0.44			0.44	
Clearance Time (s)	6.0							6.0			6.0	
Vehicle Extension (s)	3.0							3.0			3.0	
Lane Grp Cap (vph)	1085		2682					1444			1388	
v/s Ratio Prot	c0.11							0.14				
v/s Ratio Perm			0.16								c0.19	
v/c Ratio	0.35		0.16					0.31			0.44	
Uniform Delay, d1	8.9		0.0					6.3			6.7	
Progression Factor	1.00		1.00					1.00			1.00	
Incremental Delay, d2	0.2		0.1					0.1			0.2	
Delay (s)	9.1		0.1					6.4			7.0	
Level of Service	A		A					A			A	
Approach Delay (s/veh)		4.3			0.0			6.4			7.0	
Approach LOS		A			A			A			A	

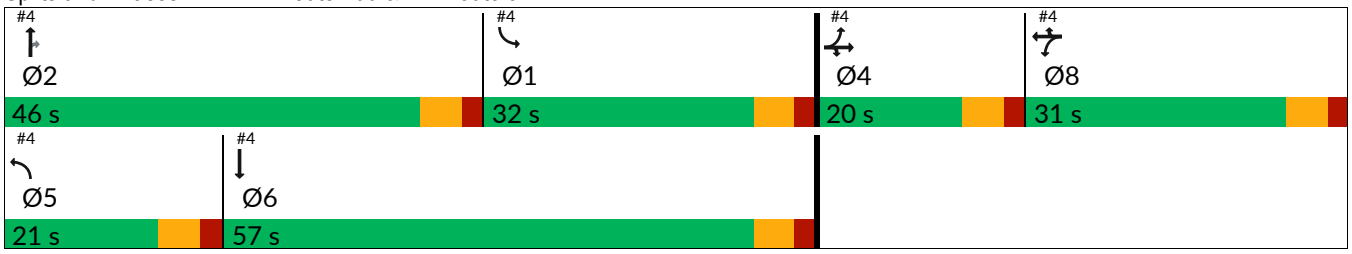
Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

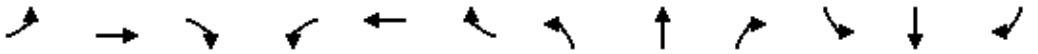
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	82	38	407	174	80	10	203	103	31	606	210
Future Volume (vph)	96	82	38	407	174	80	10	203	103	31	606	210
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.974		0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	1557	3192	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950	0.974		0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	1557	3192	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			178			178			127			228
Adj. Flow (vph)	113	96	45	479	205	94	11	226	114	37	730	253
Lane Group Flow (vph)	113	96	45	239	445	94	11	226	114	37	730	253
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.22	0.34	0.12	0.54	0.49	0.17	0.06	0.28	0.25	0.14	0.61	0.14
Control Delay (s/veh)	33.1	36.6	0.6	30.5	26.2	0.6	39.3	29.6	7.3	30.9	23.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.1	36.6	0.6	30.5	26.2	0.6	39.3	29.6	7.3	30.9	23.6	0.2
Queue Length 50th (ft)	23	40	0	96	88	0	5	50	0	15	139	0
Queue Length 95th (ft)	61	109	0	238	190	0	27	117	43	43	253	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	735	398	476	599	1228	698	391	1935	916	678	2522	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	33	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.24	0.09	0.40	0.36	0.13	0.03	0.12	0.12	0.05	0.29	0.14

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 74.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	82	38	407	174	80	10	203	103	31	606	210
Future Volume (vph)	96	82	38	407	174	80	10	203	103	31	606	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	1557	3191	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	1557	3191	1531	1616	3231	1446	1694	3388	1777
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.83	0.83	0.83
Adj. Flow (vph)	113	96	45	479	205	94	11	226	114	37	730	253
RTOR Reduction (vph)	0	0	38	0	0	69	0	0	88	0	0	0
Lane Group Flow (vph)	113	96	7	239	445	25	11	226	26	37	730	253
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	10.0	10.0	10.0	19.3	19.3	19.3	1.1	16.3	16.3	9.2	24.4	78.8
Effective Green, g (s)	12.0	12.0	12.0	21.3	21.3	21.3	3.1	18.3	18.3	11.2	26.4	78.8
Actuated g/C Ratio	0.15	0.15	0.15	0.27	0.27	0.27	0.04	0.23	0.23	0.14	0.34	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	490	266	226	420	862	413	63	750	335	240	1135	1777
v/s Ratio Prot	0.04	c0.05	0.00	c0.15	0.14	0.02	0.01	c0.07		0.02	c0.22	
v/s Ratio Perm									0.02			0.14
v/c Ratio	0.23	0.36	0.03	0.57	0.52	0.06	0.17	0.30	0.08	0.15	0.64	0.14
Uniform Delay, d1	29.3	30.0	28.4	24.8	24.4	21.3	36.6	25.0	23.7	29.6	22.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.8	0.1	1.8	0.5	0.1	1.3	0.2	0.1	0.3	1.3	0.2
Delay (s)	29.6	30.8	28.5	26.6	24.9	21.4	37.9	25.2	23.8	29.9	23.5	0.2
Level of Service	C	C	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		29.9			25.0			25.1			17.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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	0	0	12	0	17	3	190	4	27	648	7
Future Vol, veh/h	3	0	0	12	0	17	3	190	4	27	648	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	69	69	69	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	8	8	8	2	2	2
Mvmt Flow	6	0	0	17	0	25	3	211	4	30	720	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1002	1006	724	998	-	211	728	0	0	216	0	0
Stage 1	784	784	-	218	-	-	-	-	-	-	-	-
Stage 2	218	222	-	780	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.18	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.272	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	243	429	225	0	834	849	-	-	1354	-	-
Stage 1	389	407	-	789	0	-	-	-	-	-	-	-
Stage 2	789	723	-	391	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	211	237	429	219	-	834	849	-	-	1354	-	-
Mov Cap-2 Maneuver	211	237	-	219	-	-	-	-	-	-	-	-
Stage 1	381	398	-	786	-	-	-	-	-	-	-	-
Stage 2	763	720	-	383	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	22.56	15	0.14	0.31
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	849	-	-	211	-	219	834	1354	-	-
HCM Lane V/C Ratio	0.004	-	-	0.028	-	0.08	0.03	0.022	-	-
HCM Ctrl Dly (s/v)	9.3	-	-	22.6	0	22.9	9.4	7.7	-	-
HCM Lane LOS	A	-	-	C	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	41	41	361	621	39
Future Vol, veh/h	24	41	41	361	621	39
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	79	79	86	86
Heavy Vehicles, %	4	4	7	7	7	7
Mvmt Flow	35	60	52	457	722	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1283	722	767	0	-	0
Stage 1	722	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.17	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.263	-	-	-
Pot Cap-1 Maneuver	180	423	824	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	169	423	824	-	-	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	567	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	21.15	0.99	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	824	-	169	423	-	-
HCM Lane V/C Ratio	0.063	-	0.209	0.142	-	-
HCM Ctrl Dly (s/v)	9.7	-	31.8	14.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.5	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	11	9	389	639	23
Future Vol, veh/h	13	11	9	389	639	23
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	89	89	88	88
Heavy Vehicles, %	0	0	8	8	4	4
Mvmt Flow	16	14	10	437	726	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1183	726	752	0	-	0
Stage 1	726	-	-	-	-	-
Stage 2	457	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.18	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.272	-	-	-
Pot Cap-1 Maneuver	211	428	831	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	428	831	-	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	642	-	-	-	-	-

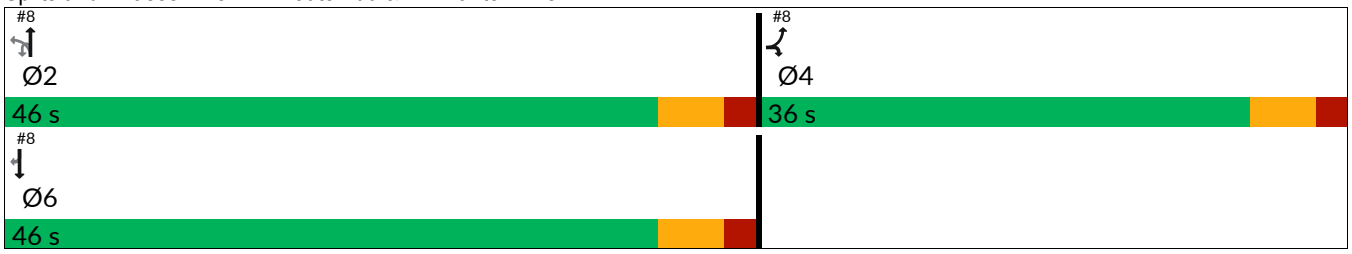
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	19.13	0.21	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	831	-	209	428	-	-
HCM Lane V/C Ratio	0.012	-	0.079	0.033	-	-
HCM Ctrl Dly (s/v)	9.4	-	23.7	13.7	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	88	51	1	45	310	546	104
Future Volume (vph)	88	51	1	45	310	546	104
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1711	1531	0	1678	1827	1783	1568
Flt Permitted	0.950			0.368			
Satd. Flow (perm)	1711	1531	0	650	1827	1783	1568
Satd. Flow (RTOR)		62					114
Adj. Flow (vph)	107	62	1	52	360	600	114
Lane Group Flow (vph)	107	62	0	53	360	600	114
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.25	0.15		0.12	0.29	0.50	0.10
Control Delay (s/veh)	17.0	6.3		5.6	5.7	7.7	1.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.0	6.3		5.6	5.7	7.7	1.5
Queue Length 50th (ft)	21	0		5	41	81	0
Queue Length 95th (ft)	58	20		19	87	181	14
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	1257	1141		586	1648	1608	1425
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	0.09	0.05		0.09	0.22	0.37	0.08

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 44.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	88	51	1	45	310	546	104
Future Volume (vph)	88	51	1	45	310	546	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1531		1678	1827	1783	1568
Flt Permitted	0.95	1.00		0.37	1.00	1.00	1.00
Satd. Flow (perm)	1711	1531		650	1827	1783	1568
Peak-hour factor, PHF	0.82	0.82	0.86	0.86	0.86	0.91	0.91
Adj. Flow (vph)	107	62	1	52	360	600	114
RTOR Reduction (vph)	0	50	0	0	0	0	43
Lane Group Flow (vph)	107	12	0	53	360	600	71
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	7.1	7.1		26.6	26.6	26.6	26.6
Effective Green, g (s)	9.1	9.1		28.6	28.6	28.6	28.6
Actuated g/C Ratio	0.20	0.20		0.63	0.63	0.63	0.63
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	340	304		406	1143	1115	981
v/s Ratio Prot	c0.06	0.01			0.20	c0.34	
v/s Ratio Perm				0.08			0.05
v/c Ratio	0.31	0.04		0.13	0.31	0.54	0.07
Uniform Delay, d1	15.6	14.8		3.5	4.0	4.8	3.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1		0.1	0.2	0.5	0.0
Delay (s)	16.2	14.8		3.6	4.1	5.3	3.4
Level of Service	B	B		A	A	A	A
Approach Delay (s/veh)	15.7				4.1	5.0	
Approach LOS	B				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	56	95	352	914	45
Future Vol, veh/h	4	56	95	352	914	45
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	82	82	86	86
Heavy Vehicles, %	5	5	5	5	1	1
Mvmt Flow	6	84	116	429	1063	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1724	1063	1115	0	-	0
Stage 1	1063	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	96	268	615	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	268	615	-	-	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	266	-	-	-	-	-
Stage 2	508	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	30.24	2.59	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	615	-	230	-	-
HCM Lane V/C Ratio	0.188	-	0.389	-	-
HCM Ctrl Dly (s/v)	12.2	-	30.2	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.7	-	1.7	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	135	143	6	4	6
Future Vol, veh/h	8	135	143	6	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	76	76	38	38
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	11	182	188	8	11	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	196	0	-	0	305	192
Stage 1	-	-	-	-	192	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	4.13	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.219	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1375	-	-	-	680	855
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1375	-	-	-	674	855
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.43	0	9.74
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1375	-	-	-	674	855
HCM Lane V/C Ratio	0.008	-	-	-	0.016	0.018
HCM Ctrl Dly (s/v)	7.6	-	-	-	10.4	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	120	36	45	104	13	23
Future Vol, veh/h	120	36	45	104	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	72	72	69	69
Heavy Vehicles, %	3	3	2	2	0	0
Mvmt Flow	162	49	63	144	19	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	211	0	456	105
Stage 1	-	-	-	-	186	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	4.13	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.219	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1358	-	552	935
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1358	-	527	935
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	780	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.35	10.11
HCM LOS			B

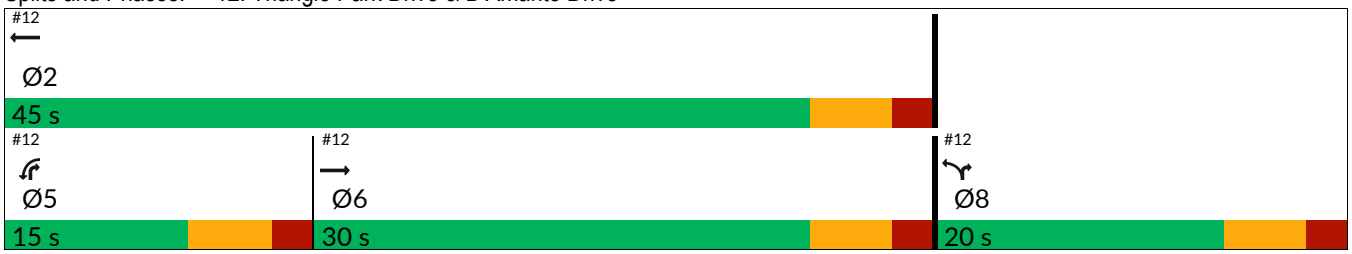
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	527	935	-	-	1358	-
HCM Lane V/C Ratio	0.036	0.036	-	-	0.046	-
HCM Ctrl Dly (s/v)	12.1	9	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	119	59	38	79	39	37
Future Volume (vph)	119	59	38	79	39	37
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.950					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3282	0	1694	1845	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3282	0	1694	1845	1770	1583
Satd. Flow (RTOR)	78					48
Adj. Flow (vph)	157	78	56	116	51	48
Lane Group Flow (vph)	235	0	56	116	51	48
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	30.0		15.0	45.0	20.0	
Total Split (%)	46.2%		23.1%	69.2%	30.8%	
Maximum Green (s)	24.0		9.0	39.0	14.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		None	Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.13		0.13	0.08	0.12	0.07
Control Delay (s/veh)	8.1		13.4	3.8	13.5	2.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.1		13.4	3.8	13.5	2.0
Queue Length 50th (ft)	14		10	9	9	0
Queue Length 95th (ft)	29		24	18	26	7
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2537		550	1816	836	958
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	0.09		0.10	0.06	0.06	0.05

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 35.5
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

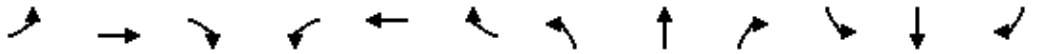
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	119	59	38	79	39	37
Future Volume (vph)	119	59	38	79	39	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3283		1694	1845	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3283		1694	1845	1770	1583
Peak-hour factor, PHF	0.76	0.76	0.68	0.68	0.77	0.77
Adj. Flow (vph)	157	78	56	116	51	48
RTOR Reduction (vph)	45	0	0	0	0	30
Lane Group Flow (vph)	190	0	56	116	51	18
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	15.3		3.9	25.2	3.8	13.7
Effective Green, g (s)	17.3		5.9	27.2	5.8	15.7
Actuated g/C Ratio	0.42		0.14	0.66	0.14	0.38
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1385		243	1224	250	606
v/s Ratio Prot	c0.06		c0.03	0.06	c0.03	0.01
v/s Ratio Perm						
v/c Ratio	0.14		0.23	0.09	0.20	0.03
Uniform Delay, d1	7.3		15.5	2.5	15.6	7.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0		0.5	0.0	0.4	0.0
Delay (s)	7.3		16.0	2.5	16.0	7.9
Level of Service	A		B	A	B	A
Approach Delay (s/veh)	7.3			6.9	12.1	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

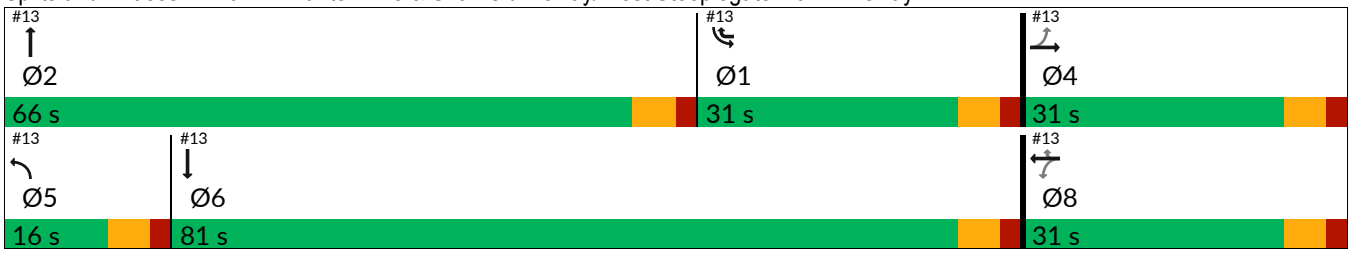
c Critical Lane Group

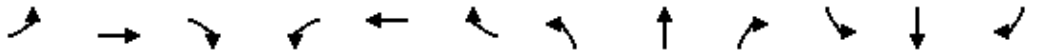


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	0	0	4	17	146	2	7	191	27
Future Volume (vph)	40	0	26	0	0	4	17	146	2	7	191	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.941				0.850		0.998			0.981	
Flt Protected		0.971					0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1963	1669	1787	3448	0	3351	3389	0
Flt Permitted		0.840					0.950			0.950		
Satd. Flow (perm)	0	2853	0	0	1963	1669	1787	3448	0	3351	3389	0
Satd. Flow (RTOR)		128				701		1			22	
Adj. Flow (vph)	51	0	33	0	0	12	20	168	2	8	227	32
Lane Group Flow (vph)	0	84	0	0	0	12	20	170	0	8	259	0
Turn Type	Perm	NA				pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	16.0	66.0		31.0	81.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%	24.2%	12.5%	51.6%		24.2%	63.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	10.0	60.0		25.0	75.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.10				0.01	0.04	0.08		0.01	0.12	
Control Delay (s/veh)		2.3				0.0	10.5	6.8		9.9	5.9	
Queue Delay		0.0				0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		2.3				0.0	10.5	6.8		9.9	5.9	
Queue Length 50th (ft)		0				0	3	6		0	8	
Queue Length 95th (ft)		4				0	14	31		4	37	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		2581				1572	717	3448		3017	3389	
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		0.03				0.01	0.03	0.05		0.00	0.08	

Intersection Summary
Cycle Length: 128
Actuated Cycle Length: 30.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	0	0	4	17	146	2	7	191	27
Future Volume (vph)	40	0	26	0	0	4	17	146	2	7	191	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0				4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95				1.00	1.00	0.95		0.97	0.95	
Frt		0.94				0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.97				1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3297				1669	1787	3449		3351	3391	
Flt Permitted		0.84				1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2853				1669	1787	3449		3351	3391	
Peak-hour factor, PHF	0.78	0.78	0.78	0.33	0.33	0.33	0.87	0.87	0.87	0.84	0.84	0.84
Adj. Flow (vph)	51	0	33	0	0	12	20	168	2	8	227	32
RTOR Reduction (vph)	0	73	0	0	0	9	0	1	0	0	12	0
Lane Group Flow (vph)	0	11	0	0	0	3	20	169	0	8	247	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA				pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		3.2				4.4	1.0	15.7		1.2	15.9	
Effective Green, g (s)		5.2				8.4	3.0	17.7		3.2	17.9	
Actuated g/C Ratio		0.14				0.22	0.08	0.46		0.08	0.47	
Clearance Time (s)		6.0				6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0				3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		389				543	140	1602		281	1593	
v/s Ratio Prot						0.00	0.01	c0.05		0.00	c0.07	
v/s Ratio Perm		c0.00				0.00						
v/c Ratio		0.03				0.00	0.14	0.11		0.03	0.16	
Uniform Delay, d1		14.3				11.6	16.4	5.7		16.0	5.8	
Progression Factor		1.00				1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0				0.0	0.5	0.0		0.0	0.0	
Delay (s)		14.3				11.6	16.8	5.8		16.1	5.8	
Level of Service		B				B	B	A		B	A	
Approach Delay (s/veh)		14.3			11.6			6.9			6.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	38.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

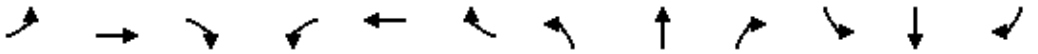
Intersection	
Int Delay, s/veh	1.1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	14	32	374	95	42	418
Future Vol, veh/h	14	32	374	95	42	418
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	75	75	94	94	86	86
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	19	43	398	101	49	486

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	789	249	0	0	499	0
Stage 1	448	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	332	757	-	-	1068	-
Stage 1	616	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	317	757	-	-	1068	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	12.65	0	0.78
HCM LOS	B		

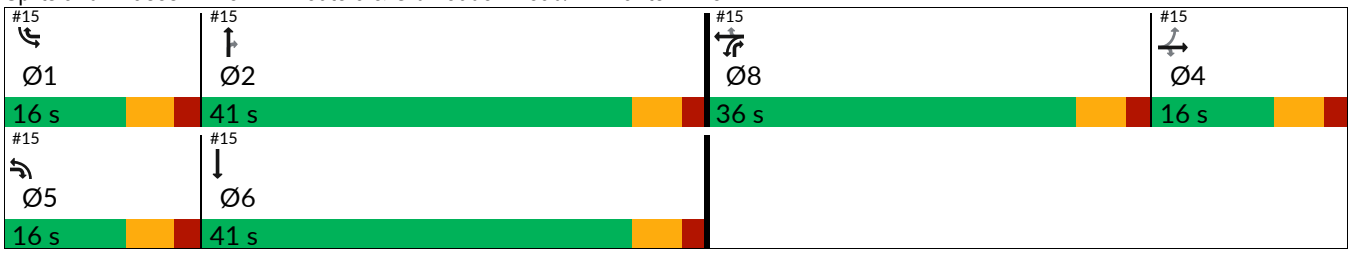
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	532	1068	-
HCM Lane V/C Ratio	-	-	0.115	0.046	-
HCM Ctrl Dly (s/v)	-	-	12.7	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

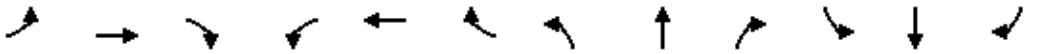


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	21	51	130	20	28	37	220	149	40	279	8
Future Volume (vph)	6	21	51	130	20	28	37	220	149	40	279	8
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.989		0.950	0.964		0.950			0.950		
Satd. Flow (prot)	0	1816	1561	1641	1723	1492	1787	3455	1599	3433	3408	0
Flt Permitted		0.892		0.950	0.964		0.950			0.950		
Satd. Flow (perm)	0	1638	1561	1641	1723	1492	1787	3455	1599	3433	3408	0
Satd. Flow (RTOR)			90			90			186		3	
Adj. Flow (vph)	8	27	65	165	25	35	46	275	186	49	344	10
Lane Group Flow (vph)	0	35	65	94	96	35	46	275	186	49	354	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	16.0	16.0	16.0	36.0	36.0	16.0	16.0	41.0	36.0	16.0	41.0	
Total Split (%)	14.7%	14.7%	14.7%	33.0%	33.0%	14.7%	14.7%	37.6%	33.0%	14.7%	37.6%	
Maximum Green (s)	10.0	10.0	10.0	30.0	30.0	10.0	10.0	35.0	30.0	10.0	35.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.12	0.13	0.25	0.24	0.05	0.14	0.21	0.15	0.08	0.33	
Control Delay (s/veh)		24.6	3.1	22.2	22.0	0.1	24.1	15.7	1.8	24.1	18.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		24.6	3.1	22.2	22.0	0.1	24.1	15.7	1.8	24.1	18.1	
Queue Length 50th (ft)		8	0	21	21	0	10	27	0	5	37	
Queue Length 95th (ft)		33	10	68	69	0	41	71	17	22	95	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		426	595	1128	1185	864	464	2639	1484	892	2604	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.08	0.11	0.08	0.08	0.04	0.10	0.10	0.13	0.05	0.14	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 50.8
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

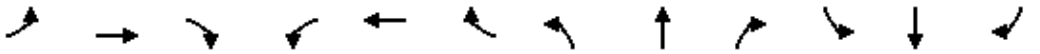




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	21	51	130	20	28	37	220	149	40	279	8
Future Volume (vph)	6	21	51	130	20	28	37	220	149	40	279	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1816	1561	1641	1723	1492	1787	3455	1599	3433	3407	
Flt Permitted		0.89	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1638	1561	1641	1723	1492	1787	3455	1599	3433	3407	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	8	27	65	165	25	35	46	275	186	49	344	10
RTOR Reduction (vph)	0	0	51	0	0	25	0	0	86	0	2	0
Lane Group Flow (vph)	0	35	14	94	96	10	46	275	100	49	352	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		2.5	8.2	9.4	9.4	13.0	5.7	17.2	26.6	3.6	15.1	
Effective Green, g (s)		4.5	12.2	11.4	11.4	17.0	7.7	19.2	30.6	5.6	17.1	
Actuated g/C Ratio		0.08	0.22	0.20	0.20	0.30	0.14	0.34	0.54	0.10	0.30	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		130	446	329	346	447	242	1169	975	339	1027	
v/s Ratio Prot			0.00	c0.06	0.06	0.00	c0.03	0.08	0.02	0.01	c0.10	
v/s Ratio Perm		c0.02	0.00			0.00			0.04			
v/c Ratio		0.27	0.03	0.29	0.28	0.02	0.19	0.24	0.10	0.14	0.34	
Uniform Delay, d1		24.6	17.6	19.2	19.2	14.0	21.7	13.5	6.4	23.4	15.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.0	0.5	0.4	0.0	0.4	0.1	0.0	0.2	0.2	
Delay (s)		25.7	17.6	19.7	19.6	14.0	22.1	13.6	6.4	23.6	15.6	
Level of Service		C	B	B	B	B	C	B	A	C	B	
Approach Delay (s/veh)		20.4			18.8			11.7			16.6	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

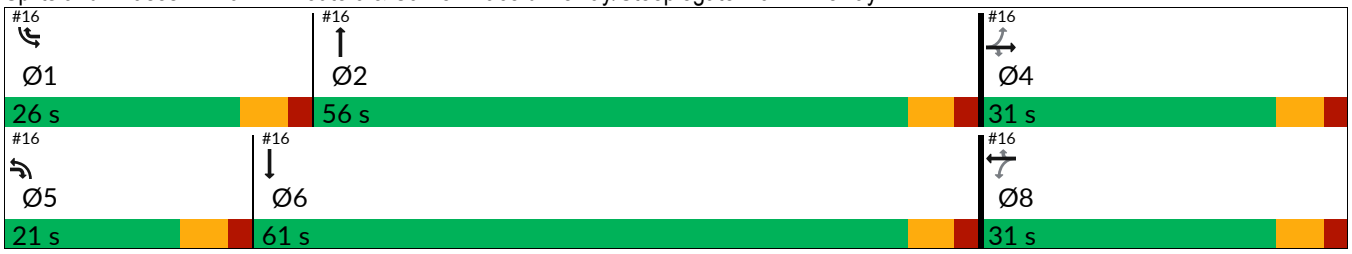
c Critical Lane Group

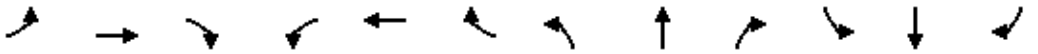


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1	2	15	0	4	9	230	15	1	310	7
Future Volume (vph)	2	1	2	15	0	4	9	230	15	1	310	7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.991			0.997	
Flt Protected		0.966			0.950		0.950			0.950		
Satd. Flow (prot)	0	1699	1495	0	1865	1669	1829	3390	0	1752	3378	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	1759	1495	0	1963	1669	1829	3390	0	1752	3378	0
Satd. Flow (RTOR)			29			29		8			3	
Adj. Flow (vph)	5	2	5	21	0	6	13	338	22	1	388	9
Lane Group Flow (vph)	0	7	5	0	21	6	13	360	0	1	397	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	31.0	31.0	21.0	31.0	31.0	26.0	21.0	56.0		26.0	61.0	
Total Split (%)	27.4%	27.4%	18.6%	27.4%	27.4%	23.0%	18.6%	49.6%		23.0%	54.0%	
Maximum Green (s)	25.0	25.0	15.0	25.0	25.0	20.0	15.0	50.0		20.0	55.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.02	0.01		0.04	0.01	0.03	0.12		0.00	0.14	
Control Delay (s/veh)		12.0	0.5		11.9	0.5	12.3	3.6		13.0	3.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		12.0	0.5		11.9	0.5	12.3	3.6		13.0	3.9	
Queue Length 50th (ft)		1	0		2	0	1	0		0	0	
Queue Length 95th (ft)		4	0		13	0	10	41		3	58	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		1545	925		1724	1299	1011	3390		1254	3378	
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		0.00	0.01		0.01	0.00	0.01	0.11		0.00	0.12	

Intersection Summary
Cycle Length: 113
Actuated Cycle Length: 31.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1	2	15	0	4	9	230	15	1	310	7
Future Volume (vph)	2	1	2	15	0	4	9	230	15	1	310	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1699	1495		1865	1669	1829	3390		1752	3377	
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1759	1495		1963	1669	1829	3390		1752	3377	
Peak-hour factor, PHF	0.42	0.42	0.42	0.71	0.71	0.71	0.68	0.68	0.68	0.80	0.80	0.80
Adj. Flow (vph)	5	2	5	21	0	6	13	338	22	1	388	9
RTOR Reduction (vph)	0	0	4	0	0	5	0	3	0	0	1	0
Lane Group Flow (vph)	0	7	1	0	21	1	13	357	0	1	396	0
Heavy Vehicles (%)	8%	8%	8%	0%	0%	0%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		1.0	1.9		1.0	1.8	0.9	22.2		0.8	22.1	
Effective Green, g (s)		3.0	5.9		3.0	5.8	2.9	24.2		2.8	24.1	
Actuated g/C Ratio		0.07	0.14		0.07	0.14	0.07	0.58		0.07	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		125	352		140	389	126	1953		116	1937	
v/s Ratio Prot			0.00			0.00	c0.01	0.11		0.00	c0.12	
v/s Ratio Perm		0.00	0.00		c0.01	0.00						
v/c Ratio		0.06	0.00		0.15	0.00	0.10	0.18		0.01	0.20	
Uniform Delay, d1		18.2	15.5		18.3	15.6	18.3	4.2		18.3	4.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0		0.5	0.0	0.4	0.0		0.0	0.1	
Delay (s)		18.4	15.5		18.8	15.6	18.7	4.3		18.3	4.4	
Level of Service		B	B		B	B	B	A		B	A	
Approach Delay (s/veh)		17.2			18.1			4.8			4.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

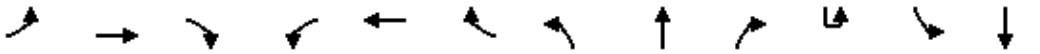
Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	235	1	0	317
Future Vol, veh/h	1	0	235	1	0	317
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	92	92	84	84
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	4	0	255	1	0	377

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	445	128	0	0	257	0
Stage 1	256	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	547	904	-	-	1305	-
Stage 1	769	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	547	904	-	-	1305	-
Mov Cap-2 Maneuver	547	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	831	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.63	0	0
HCM LOS	B		

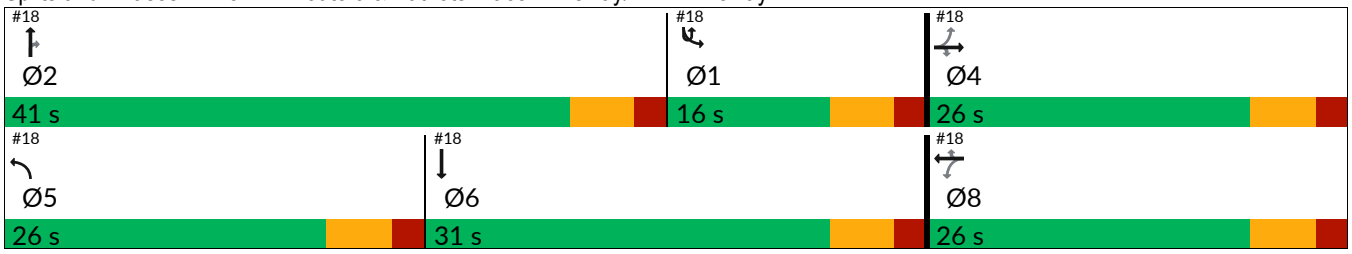
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	547	1305	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Ctrl Dly (s/v)	-	-	11.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	212	10	1	5	284
Future Volume (vph)	2	1	6	27	1	2	13	212	10	1	5	284
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.990
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3322
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3322
Satd. Flow (RTOR)			197			197			118			9
Adj. Flow (vph)	3	1	9	44	2	3	18	286	14	1	6	369
Lane Group Flow (vph)	0	4	9	0	46	3	18	286	14	0	7	395
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.11	0.01	0.04	0.11	0.01		0.02	0.16
Control Delay (s/veh)		12.0	0.0		12.1	0.0	13.1	6.0	0.0		12.6	5.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		12.0	0.0		12.1	0.0	13.1	6.0	0.0		12.6	5.5
Queue Length 50th (ft)		1	0		5	0	2	0	0		1	0
Queue Length 95th (ft)		5	0		21	0	14	45	0		8	59
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		997	1189		1065	1146	1239	3261	1465		662	2855
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.04	0.00	0.01	0.09	0.01		0.01	0.14

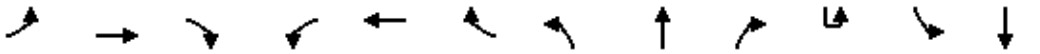
Intersection Summary
Cycle Length: 83
Actuated Cycle Length: 32.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	26
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



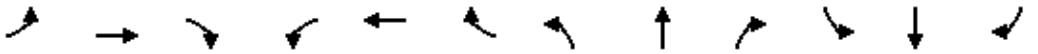
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	212	10	1	5	284
Future Volume (vph)	2	1	6	27	1	2	13	212	10	1	5	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3322
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3322
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.74	0.74	0.74	0.77	0.77	0.77
Adj. Flow (vph)	3	1	9	44	2	3	18	286	14	1	6	369
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	7	0	0	4
Lane Group Flow (vph)	0	4	1	0	46	0	18	286	7	0	7	391
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	1.0	19.9	19.9		1.2	20.1
Effective Green, g (s)		4.7	4.7		4.7	4.7	3.0	21.9	21.9		3.2	22.1
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.07	0.52	0.52		0.08	0.53
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		160	181		171	174	127	1792	802		132	1756
v/s Ratio Prot							0.01	c0.08			0.00	c0.12
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.00			
v/c Ratio		0.03	0.01		0.27	0.00	0.14	0.16	0.01		0.05	0.22
Uniform Delay, d1		16.5	16.5		17.0	16.5	18.2	5.2	4.8		17.9	5.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		0.9	0.0	0.5	0.0	0.0		0.2	0.1
Delay (s)		16.6	16.5		17.8	16.5	18.7	5.2	4.8		18.1	5.3
Level of Service		B	B		B	B	B	A	A		B	A
Approach Delay (s/veh)		16.5			17.7			6.0				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.77
Adj. Flow (vph)	26
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

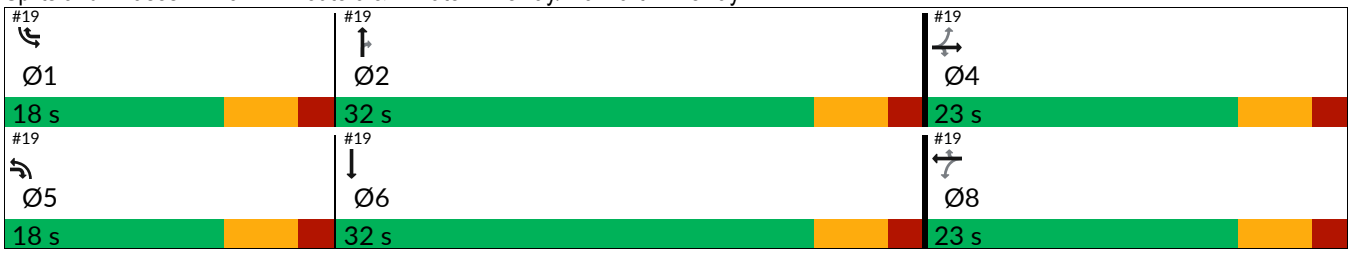
Intersection Summary

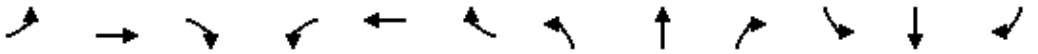


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	113	11	51	223	25
Future Volume (vph)	49	11	66	21	6	40	34	113	11	51	223	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.985	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3437	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3437	0
Satd. Flow (RTOR)			77			48			134		19	
Adj. Flow (vph)	57	13	77	25	7	48	43	141	14	61	265	30
Lane Group Flow (vph)	0	70	77	0	32	48	43	141	14	61	295	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	23.0	23.0	18.0	23.0	23.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (%)	31.5%	31.5%	24.7%	31.5%	31.5%	24.7%	24.7%	43.8%	43.8%	24.7%	43.8%	
Maximum Green (s)	17.0	17.0	12.0	17.0	17.0	12.0	12.0	26.0	26.0	12.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.18	0.10		0.09	0.07	0.09	0.07	0.01	0.14	0.15	
Control Delay (s/veh)		14.3	2.0		13.9	2.1	14.7	11.6	0.0	14.3	10.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		14.3	2.0		13.9	2.1	14.7	11.6	0.0	14.3	10.2	
Queue Length 50th (ft)		13	0		6	0	8	13	0	11	26	
Queue Length 95th (ft)		38	11		21	8	26	28	0	34	51	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		821	1042		759	978	764	2716	1286	721	2706	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.09	0.07		0.04	0.05	0.06	0.05	0.01	0.08	0.11	

Intersection Summary
Cycle Length: 73
Actuated Cycle Length: 35.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	113	11	51	223	25
Future Volume (vph)	49	11	66	21	6	40	34	113	11	51	223	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3436	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3436	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	57	13	77	25	7	48	42	141	14	61	265	30
RTOR Reduction (vph)	0	0	55	0	0	34	0	0	8	0	11	0
Lane Group Flow (vph)	0	70	22	0	32	14	43	141	6	61	284	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.2	7.8		4.2	8.1	3.6	15.3	15.3	3.9	15.6	
Effective Green, g (s)		6.2	11.8		6.2	12.1	5.6	17.3	17.3	5.9	17.6	
Actuated g/C Ratio		0.15	0.29		0.15	0.29	0.14	0.42	0.42	0.14	0.43	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		211	616		195	595	241	1443	668	240	1460	
v/s Ratio Prot			0.00			0.00	0.02	0.04		c0.04	c0.08	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.33	0.04		0.16	0.02	0.18	0.10	0.01	0.25	0.19	
Uniform Delay, d1		15.7	10.7		15.3	10.4	15.9	7.3	7.0	15.8	7.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9	0.0		0.4	0.0	0.4	0.0	0.0	0.6	0.1	
Delay (s)		16.7	10.7		15.7	10.5	16.2	7.3	7.0	16.4	7.5	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		13.6			12.6			9.2			9.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	41.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

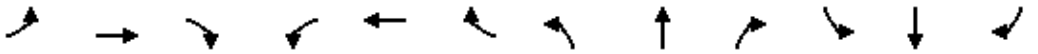
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	0	1	0	0	0	1	212	0	4	4	386	0
Future Vol, veh/h	0	0	1	0	0	0	1	212	0	4	4	386	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	160	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	25	25	25	90	90	90	93	93	93	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	0	0	0	0
Mvmt Flow	0	0	4	0	0	0	1	228	0	5	5	460	0

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	595	709	230	479	709	114	460	0	0	228	228	0	0
Stage 1	479	479	-	230	230	-	-	-	-	-	-	-	-
Stage 2	116	230	-	249	479	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	6.4	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	2.21	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	392	362	779	474	362	923	1105	-	-	1038	1352	-	-
Stage 1	542	559	-	758	718	-	-	-	-	-	-	-	-
Stage 2	882	718	-	739	559	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	389	358	779	468	358	923	1105	-	-	1175	1175	-	-
Mov Cap-2 Maneuver	389	358	-	468	358	-	-	-	-	-	-	-	-
Stage 1	538	554	-	757	717	-	-	-	-	-	-	-	-
Stage 2	881	717	-	729	554	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.65	0	0.04	0.16
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1105	-	-	779	-	1175	-	-
HCM Lane V/C Ratio	0.001	-	-	0.005	-	0.008	-	-
HCM Ctrl Dly (s/v)	8.3	-	-	9.6	0	8.1	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

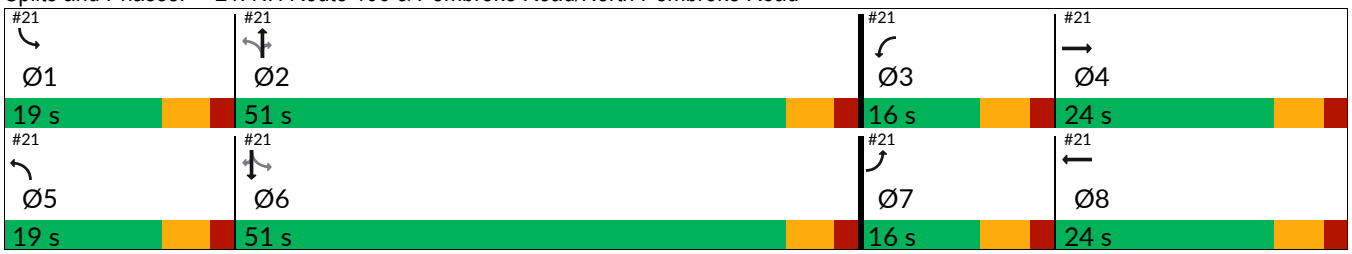


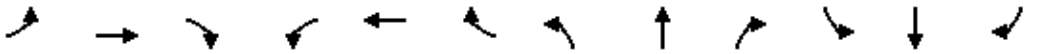
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	20	96	52	71	48	58	391	24	37	801	124
Future Volume (vph)	32	20	96	52	71	48	58	391	24	37	801	124
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1648	0	1770	1574	0	1776	1810	1538	1829	1863	1531
Flt Permitted	0.950			0.950			0.077			0.384		
Satd. Flow (perm)	1787	1648	0	1770	1574	0	144	1810	1538	739	1863	1531
Satd. Flow (RTOR)		117			27				149			149
Adj. Flow (vph)	39	24	117	70	96	65	73	489	30	42	900	139
Lane Group Flow (vph)	39	141	0	70	161	0	73	489	30	42	900	139
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.21	0.42		0.35	0.52		0.28	0.48	0.03	0.08	0.92	0.16
Control Delay (s/veh)	44.9	14.7		46.9	37.4		11.2	17.9	0.1	8.8	40.4	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.9	14.7		46.9	37.4		11.2	17.9	0.1	8.8	40.4	3.1
Queue Length 50th (ft)	23	13		42	79		17	211	0	9	~563	0
Queue Length 95th (ft)	53	55		74	118		37	304	0	26	#932	30
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	240	460		238	377		367	1026	936	658	982	877
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.31		0.29	0.43		0.20	0.48	0.03	0.06	0.92	0.16

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 92.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	20	96	52	71	48	58	391	24	37	801	124
Future Volume (vph)	32	20	96	52	71	48	58	391	24	37	801	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1647		1770	1575		1776	1810	1538	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	1787	1647		1770	1575		143	1810	1538	738	1863	1531
Peak-hour factor, PHF	0.82	0.82	0.82	0.74	0.74	0.74	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	39	24	117	70	96	65	72	489	30	42	900	139
RTOR Reduction (vph)	0	100	0	0	22	0	0	0	14	0	0	68
Lane Group Flow (vph)	39	41	0	70	139	0	73	489	16	42	900	71
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.7	12.5		6.8	14.6		56.4	50.2	50.2	51.6	47.8	47.8
Effective Green, g (s)	6.7	14.5		8.8	16.6		60.4	52.2	52.2	55.6	49.8	49.8
Actuated g/C Ratio	0.07	0.15		0.09	0.17		0.62	0.54	0.54	0.57	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	123	245		160	268		226	971	825	486	953	783
v/s Ratio Prot	0.02	0.03		c0.04	c0.09		c0.03	0.27		0.01	c0.48	
v/s Ratio Perm							0.17		0.01	0.04		0.05
v/c Ratio	0.32	0.17		0.44	0.52		0.32	0.50	0.02	0.09	0.94	0.09
Uniform Delay, d1	43.1	36.1		41.9	36.7		18.8	14.3	10.6	9.7	22.4	12.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.3		1.9	1.7		0.8	0.4	0.0	0.1	17.2	0.1
Delay (s)	44.6	36.5		43.8	38.4		19.7	14.7	10.6	9.8	39.6	12.2
Level of Service	D	D		D	D		B	B	B	A	D	B
Approach Delay (s/veh)		38.2			40.0			15.1			34.9	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	127	55	7	16	13	112	367	35	113	538	289
Future Volume (vph)	113	127	55	7	16	13	112	367	35	113	538	289
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1720	0	1736	1930	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.730			0.535			0.177			0.509		
Satd. Flow (perm)	1360	1720	0	977	1930	0	322	1818	1599	958	1818	1546
Satd. Flow (RTOR)		24			19				66			307
Adj. Flow (vph)	135	151	65	10	23	19	133	437	42	120	572	307
Lane Group Flow (vph)	135	216	0	10	42	0	133	437	42	120	572	307
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.41	0.49		0.04	0.09		0.29	0.39	0.04	0.31	0.78	0.38
Control Delay (s/veh)	22.8	21.0		17.1	12.0		6.8	7.3	1.1	17.7	28.5	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.8	21.0		17.1	12.0		6.8	7.3	1.1	17.7	28.5	3.9
Queue Length 50th (ft)	40	58		3	6		16	63	0	30	180	0
Queue Length 95th (ft)	78	105		10	19		38	121	5	76	#396	47
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	448	583		322	649		505	1232	1105	385	732	806
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.37		0.03	0.06		0.26	0.35	0.04	0.31	0.78	0.38

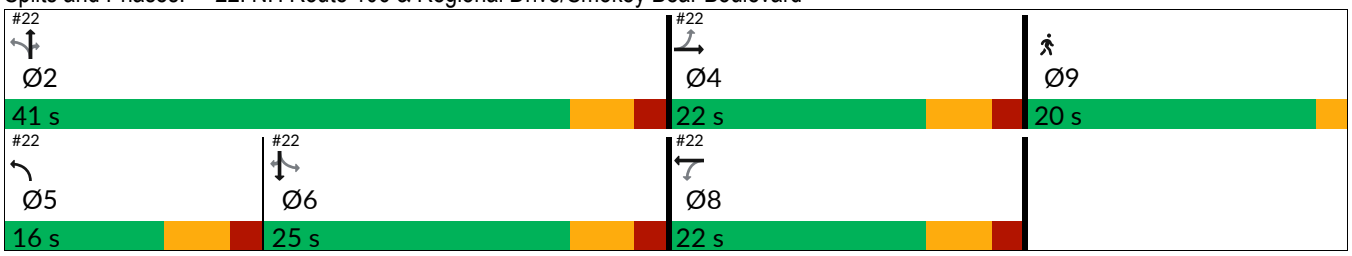
Intersection Summary
Cycle Length: 83

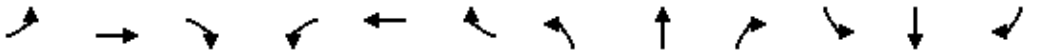
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 55.7
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

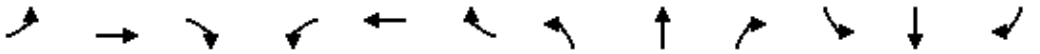




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	127	55	7	16	13	112	367	35	113	538	289
Future Volume (vph)	113	127	55	7	16	13	112	367	35	113	538	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1930		1728	1818	1599	1787	1818	1546
Flt Permitted	0.73	1.00		0.54	1.00		0.18	1.00	1.00	0.51	1.00	1.00
Satd. Flow (perm)	1359	1719		978	1930		321	1818	1599	957	1818	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.69	0.69	0.69	0.84	0.84	0.84	0.94	0.94	0.94
Adj. Flow (vph)	135	151	65	10	23	19	133	437	42	120	572	307
RTOR Reduction (vph)	0	18	0	0	14	0	0	0	16	0	0	186
Lane Group Flow (vph)	135	198	0	10	28	0	133	437	26	120	572	121
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	11.5	11.5		11.5	11.5		33.3	33.3	33.3	20.4	20.4	20.4
Effective Green, g (s)	13.5	13.5		13.5	13.5		35.3	35.3	35.3	22.4	22.4	22.4
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.62	0.62	0.62	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	323	408		232	458		419	1129	993	377	716	609
v/s Ratio Prot		c0.11			0.01		0.05	c0.24			c0.31	
v/s Ratio Perm	0.10			0.01			0.15		0.02	0.13		0.08
v/c Ratio	0.42	0.48		0.04	0.06		0.32	0.39	0.03	0.32	0.80	0.20
Uniform Delay, d1	18.3	18.7		16.7	16.7		7.1	5.4	4.1	11.9	15.2	11.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9		0.1	0.1		0.4	0.2	0.0	0.5	6.2	0.2
Delay (s)	19.2	19.6		16.8	16.8		7.5	5.6	4.1	12.4	21.4	11.5
Level of Service	B	B		B	B		A	A	A	B	C	B
Approach Delay (s/veh)		19.4			16.8			5.9			17.3	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

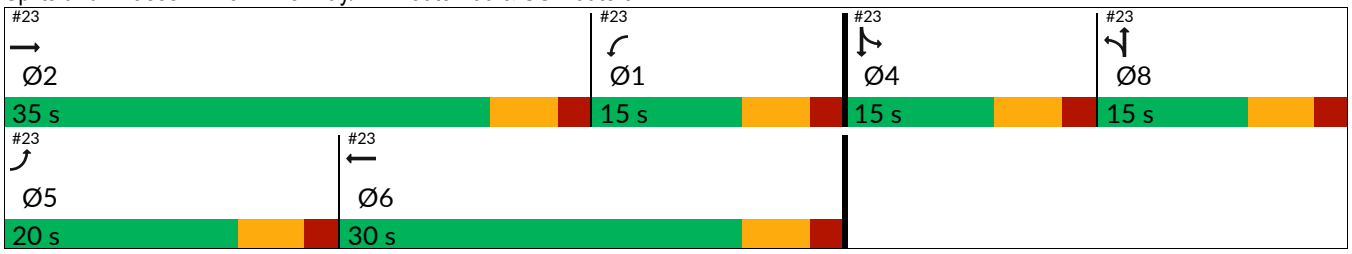
c Critical Lane Group

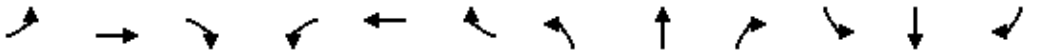


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	222	57	0	619	248	15	5	4	120	17	173
Future Volume (vph)	169	222	57	0	619	248	15	5	4	120	17	173
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Satd. Flow (RTOR)			368			368			368			368
Adj. Flow (vph)	204	267	69	0	711	285	17	6	4	133	19	192
Lane Group Flow (vph)	204	267	69	0	711	285	17	6	4	133	19	192
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	20.0	35.0		15.0	30.0		15.0	15.0		15.0	15.0	
Total Split (%)	25.0%	43.8%		18.8%	37.5%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	14.0	29.0		9.0	24.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.52	0.12	0.04		0.55	0.16	0.04	0.02	0.00	0.24	0.06	0.13
Control Delay (s/veh)	29.6	5.4	0.1		19.3	0.2	29.7	30.0	0.0	27.7	28.1	0.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.6	5.4	0.1		19.3	0.2	29.7	30.0	0.0	27.7	28.1	0.2
Queue Length 50th (ft)	63	13	0		102	0	2	2	0	21	6	0
Queue Length 95th (ft)	152	42	0		198	0	13	14	0	58	28	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150			200	250		150	250		200
Base Capacity (vph)	478	2239	1660		1648	1759	638	346	1660	638	346	1509
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.12	0.04		0.43	0.16	0.03	0.02	0.00	0.21	0.05	0.13

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 59.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

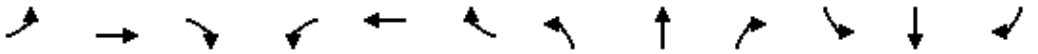




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	222	57	0	619	248	15	5	4	120	17	173
Future Volume (vph)	169	222	57	0	619	248	15	5	4	120	17	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	267	69	0	711	285	17	6	4	133	19	192
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	204	267	69	0	711	285	17	6	4	133	19	192
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.1	38.6	64.7		20.5	64.7	2.0	2.0	64.7	6.1	6.1	64.7
Effective Green, g (s)	14.1	40.6	64.7		22.5	64.7	4.0	4.0	64.7	8.1	8.1	64.7
Actuated g/C Ratio	0.22	0.63	1.00		0.35	1.00	0.06	0.06	1.00	0.13	0.13	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	355	2046	1660		1201	1759	195	106	1660	396	214	1509
v/s Ratio Prot	c0.13	0.08			c0.21		0.01	0.00		c0.04	0.01	
v/s Ratio Perm			0.04			c0.16			0.00			0.13
v/c Ratio	0.57	0.13	0.04		0.59	0.16	0.09	0.06	0.00	0.34	0.09	0.13
Uniform Delay, d1	22.6	4.9	0.0		17.3	0.0	28.6	28.6	0.0	25.8	25.0	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.0	0.0		0.8	0.2	0.2	0.2	0.0	0.5	0.2	0.2
Delay (s)	24.9	4.9	0.0		18.1	0.2	28.8	28.8	0.0	26.3	25.2	0.2
Level of Service	C	A	A		B	A	C	C	A	C	C	A
Approach Delay (s/veh)		11.8			13.0			24.5			11.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	541	800	3	0	840	21	1	0	1	27	0	288
Future Volume (vph)	541	800	3	0	840	21	1	0	1	27	0	288
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	1770	3300	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.737			0.757	
Satd. Flow (perm)	1770	3300	0	1689	3196	0	0	1400	1830	0	1299	1459
Satd. Flow (RTOR)					2				150			335
Adj. Flow (vph)	685	1013	4	0	1120	28	2	0	2	31	0	335
Lane Group Flow (vph)	685	1017	0	0	1148	0	0	2	2	0	31	335
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.08	0.38			0.87			0.01	0.01		0.23	0.74
Control Delay (s/veh)	91.2	3.0			35.0			38.0	0.0		43.0	15.4
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	91.2	3.0			35.0			38.0	0.0		43.0	15.4
Queue Length 50th (ft)	~469	63			337			1	0		18	0
Queue Length 95th (ft)	#575	81			338			4	0		46	71
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	633	2675			1313			176	362		163	477
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	1.08	0.38			0.87			0.01	0.01		0.19	0.70

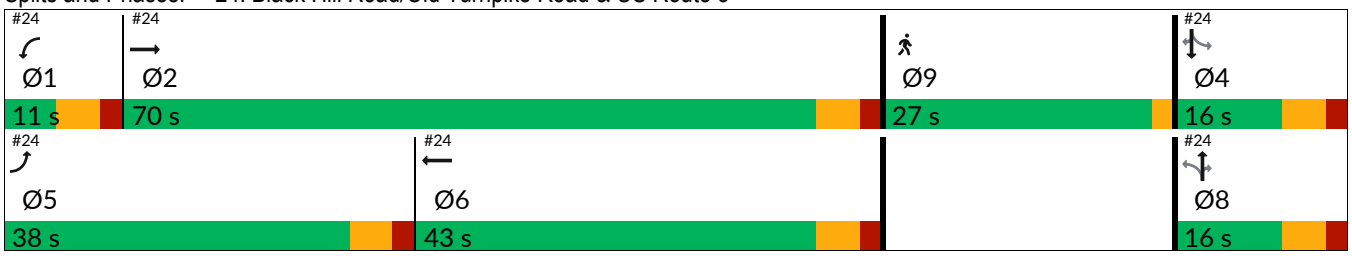
Intersection Summary
Cycle Length: 124

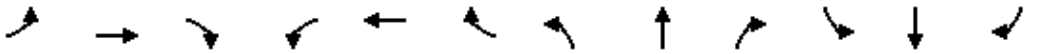
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

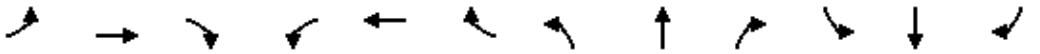




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	541	800	3	0	840	21	1	0	1	27	0	288
Future Volume (vph)	541	800	3	0	840	21	1	0	1	27	0	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3301			3197			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.74	1.00		0.76	1.00
Satd. Flow (perm)	1770	3301			3197			1400	1830		1299	1459
Peak-hour factor, PHF	0.79	0.79	0.79	0.75	0.75	0.75	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	685	1013	4	0	1120	28	2	0	2	31	0	335
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	2	0	0	300
Lane Group Flow (vph)	685	1017	0	0	1147	0	0	2	0	0	31	35
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	32.0	75.0			37.0			8.0	8.0		8.0	8.0
Effective Green, g (s)	34.0	77.0			39.0			10.0	10.0		10.0	10.0
Actuated g/C Ratio	0.36	0.81			0.41			0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	633	2675			1312			147	192		136	153
v/s Ratio Prot	c0.39	0.31			c0.36							
v/s Ratio Perm								0.00	0.00		0.02	c0.02
v/c Ratio	1.08	0.38			0.87			0.01	0.00		0.23	0.23
Uniform Delay, d1	30.5	2.5			25.7			38.1	38.0		39.0	39.0
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	60.0	0.1			6.7			0.0	0.0		0.9	0.8
Delay (s)	90.5	2.6			32.5			38.1	38.0		39.8	39.7
Level of Service	F	A			C			D	D		D	D
Approach Delay (s/veh)		38.0			32.5			38.1			39.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	718	7	7	1082	44	1	0	8	16	0	16
Future Volume (vph)	13	718	7	7	1082	44	1	0	8	16	0	16
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	4906	0	1652	3401	0	1805	1615	0	1727	1495	0
Flt Permitted	0.950			0.950			0.744			0.748		
Satd. Flow (perm)	1711	4906	0	1652	3401	0	1414	1615	0	1360	1495	0
Satd. Flow (RTOR)		1			5			732			186	
Adj. Flow (vph)	14	772	8	8	1230	50	2	0	14	21	0	21
Lane Group Flow (vph)	14	780	0	8	1280	0	2	14	0	21	21	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	34.0		26.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.8%	27.6%		21.1%			26.8%	26.8%		26.8%	26.8%	
Maximum Green (s)	6.0	28.0		20.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.13	0.43		0.03	0.50		0.01	0.02		0.12	0.06	
Control Delay (s/veh)	57.0	30.7		46.6	1.7		43.0	0.0		46.4	0.3	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.0	30.7		46.6	2.0		43.0	0.0		46.4	0.3	
Queue Length 50th (ft)	11	167		5	23		1	0		16	0	
Queue Length 95th (ft)	33	236		m8	44		6	0		34	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	111	1822		297	2546		333	940		320	494	
Starvation Cap Reductn	0	0		0	538		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.43		0.03	0.64		0.01	0.01		0.07	0.04	

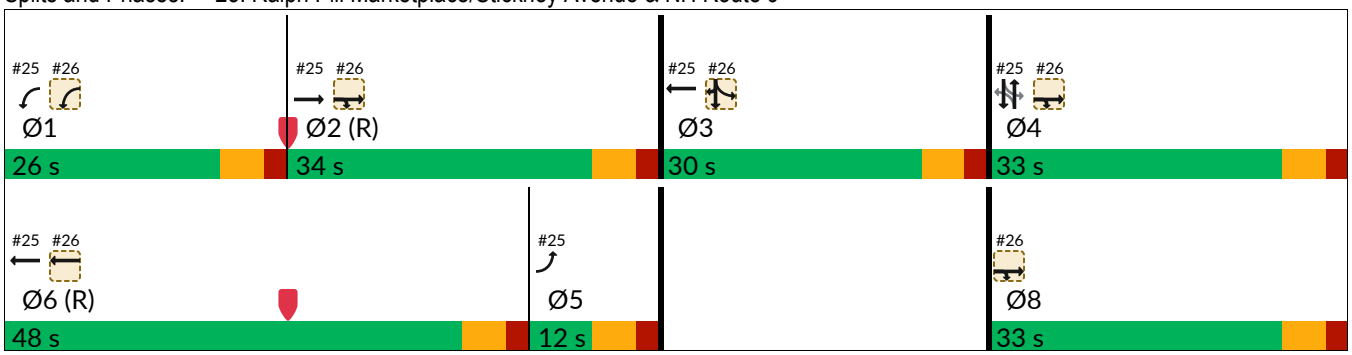
Intersection Summary
Cycle Length: 123

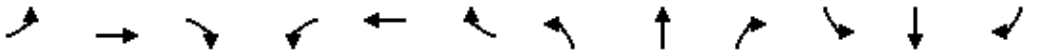
Lane Group	Ø3	Ø6	Ø8
Lane Configurations	[redacted]	[redacted]	[redacted]
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	30.0	48.0	33.0
Total Split (%)	24%	39%	27%
Maximum Green (s)	24.0	42.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

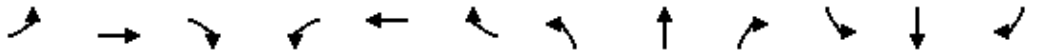




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	718	7	7	1082	44	1	0	8	16	0	16
Future Volume (vph)	13	718	7	7	1082	44	1	0	8	16	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	4908		1652	3401		1805	1615		1727	1495	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	1711	4908		1652	3401		1413	1615		1360	1495	
Peak-hour factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88	0.58	0.58	0.58	0.75	0.75	0.75
Adj. Flow (vph)	14	772	8	8	1230	50	2	0	14	21	0	21
RTOR Reduction (vph)	0	1	0	0	2	0	0	12	0	0	18	0
Lane Group Flow (vph)	14	779	0	8	1279	0	2	2	0	21	3	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	43.7		16.2	82.1		14.5	14.5		14.5	14.5	
Effective Green, g (s)	4.4	45.7		18.2	86.1		16.5	16.5		16.5	16.5	
Actuated g/C Ratio	0.04	0.37		0.15	0.70		0.13	0.13		0.13	0.13	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	61	1823		244	2380		189	216		182	200	
v/s Ratio Prot	0.01	c0.16		0.00	c0.38			0.00			0.00	
v/s Ratio Perm							0.00			c0.02		
v/c Ratio	0.23	0.43		0.03	0.54		0.01	0.01		0.12	0.01	
Uniform Delay, d1	57.7	28.9		44.9	8.9		46.2	46.2		46.8	46.2	
Progression Factor	1.00	1.00		1.08	0.23		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.7		0.0	0.2		0.0	0.0		0.3	0.0	
Delay (s)	59.6	29.6		48.7	2.2		46.2	46.2		47.1	46.2	
Level of Service	E	C		D	A		D	D		D	D	
Approach Delay (s/veh)		30.1			2.5			46.2			46.7	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	626	116	238	713	0	0	0	0	199	0	420
Future Volume (vph)	0	626	116	238	713	0	0	0	0	199	0	420
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Satd. Flow (RTOR)			125									313
Adj. Flow (vph)	0	673	125	283	849	0	0	0	0	249	0	525
Lane Group Flow (vph)	0	673	125	283	849	0	0	0	0	0	249	525
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				26.0	48.0					30.0	30.0	30.0
Total Split (%)				21.1%	39.0%					24.4%	24.4%	24.4%
Maximum Green (s)				20.0	42.0					24.0	24.0	24.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.27	0.13	0.60	0.51						0.65	0.89
Control Delay (s/veh)		1.4	0.3	57.8	17.0						53.3	38.0
Queue Delay		0.1	0.2	1.2	1.8						0.0	0.0
Total Delay (s/veh)		1.4	0.4	59.0	18.8						53.3	38.0
Queue Length 50th (ft)		6	0	103	155						186	184
Queue Length 95th (ft)		8	0	109	248						242	#256
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2984	1138	570	1677						382	587
Starvation Cap Reductn		809	542	126	631						0	0
Spillback Cap Reductn		67	0	0	4						0	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.31	0.21	0.64	0.81						0.65	0.89

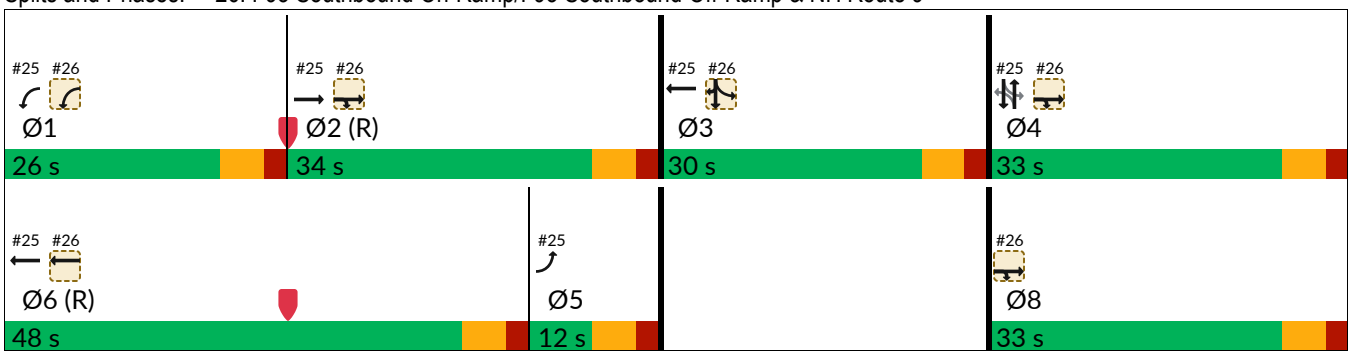
Intersection Summary
Cycle Length: 123

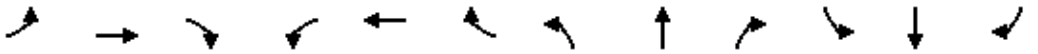
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	34.0	33.0	12.0	33.0
Total Split (%)	28%	27%	10%	27%
Maximum Green (s)	28.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

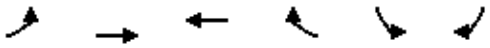




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	626	116	238	713	0	0	0	0	199	0	420
Future Volume (vph)	0	626	116	238	713	0	0	0	0	199	0	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3173	3271						1770	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3173	3271						1770	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	0	673	125	283	849	0	0	0	0	249	0	525
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	0	0	0	245
Lane Group Flow (vph)	0	673	63	283	849	0	0	0	0	0	249	280
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		58.2	58.2	16.2	57.5						24.6	24.6
Effective Green, g (s)		62.2	62.2	18.2	59.5						26.6	26.6
Actuated g/C Ratio		0.51	0.51	0.15	0.48						0.22	0.22
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2485	907	469	1582						382	342
v/s Ratio Prot		c0.14	0.04	c0.09	c0.26						0.14	c0.18
v/s Ratio Perm												
v/c Ratio		0.27	0.07	0.60	0.54						0.65	0.82
Uniform Delay, d1		17.4	15.6	49.0	22.1						44.0	45.9
Progression Factor		0.12	0.01	1.08	0.74						1.00	1.00
Incremental Delay, d2		0.1	0.0	2.2	1.3						4.0	14.0
Delay (s)		2.2	0.2	54.9	17.7						47.9	59.9
Level of Service		A	A	D	B						D	E
Approach Delay (s/veh)		1.9			27.0			0.0			56.1	
Approach LOS		A			C			A			E	

Intersection Summary				
HCM 2000 Control Delay (s/veh)	27.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	52.4%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

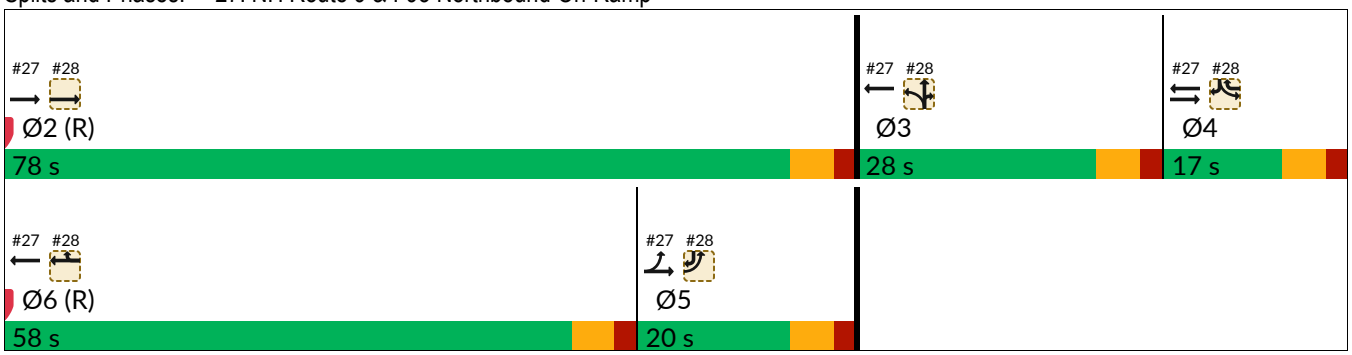


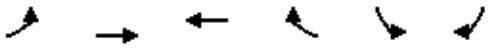
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	133	692	951	58	0	0				
Future Volume (vph)	133	692	951	58	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1652	3303	4700	1620	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1652	3303	4700	1620	0	0				
Satd. Flow (RTOR)				53						
Adj. Flow (vph)	149	778	1057	64	0	0				
Lane Group Flow (vph)	149	778	1057	64	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	20.0						78.0	28.0	17.0	58.0
Total Split (%)	16.3%						63%	23%	14%	47%
Maximum Green (s)	14.0						72.0	22.0	11.0	52.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.63	0.32	0.28	0.04						
Control Delay (s/veh)	52.9	7.0	1.9	0.0						
Queue Delay	7.9	0.4	0.1	0.0						
Total Delay (s/veh)	60.8	7.4	2.1	0.0						
Queue Length 50th (ft)	118	96	38	0						
Queue Length 95th (ft)	m#207	123	34	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	237	2529	3972	1620						
Starvation Cap Reductn	55	1170	1660	0						
Spillback Cap Reductn	0	0	253	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.82	0.57	0.46	0.04						

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

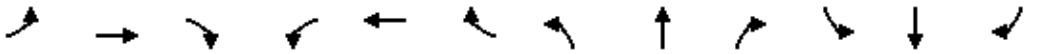




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	133	692	951	58	0	0
Future Volume (vph)	133	692	951	58	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	2.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1652	3303	4700	1620		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1652	3303	4700	1620		
Peak-hour factor, PHF	0.89	0.89	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	778	1057	64	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	149	778	1057	64	0	0
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	15.6	87.2	95.4	123.0		
Effective Green, g (s)	17.6	89.2	97.4	123.0		
Actuated g/C Ratio	0.14	0.73	0.79	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	236	2395	3721	1620		
v/s Ratio Prot	c0.09	c0.24	c0.22			
v/s Ratio Perm				0.04		
v/c Ratio	0.63	0.32	0.28	0.04		
Uniform Delay, d1	49.6	6.1	3.4	0.0		
Progression Factor	0.81	1.10	0.51	1.00		
Incremental Delay, d2	5.2	0.1	0.0	0.0		
Delay (s)	45.2	6.8	1.8	0.0		
Level of Service	D	A	A	A		
Approach Delay (s/veh)		13.0	1.7		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

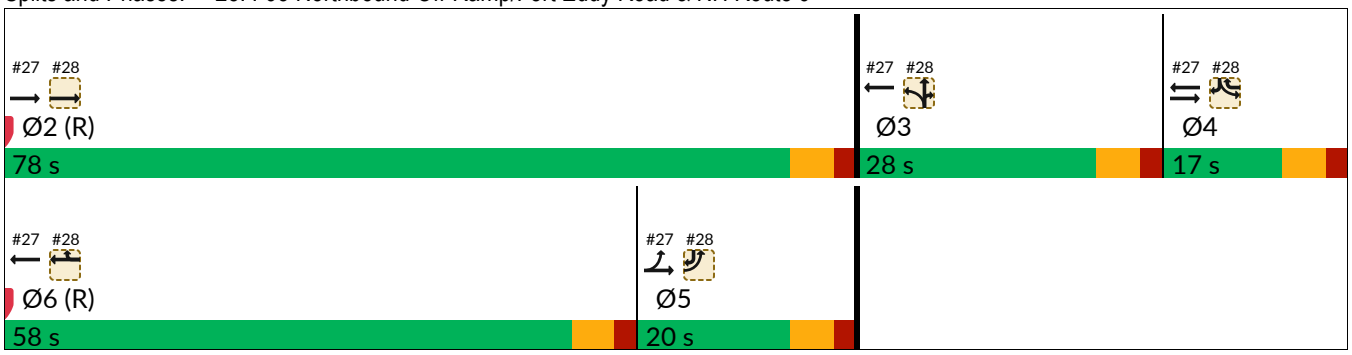


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	594	0	0	663	84	191	125	458	89	0	155
Future Volume (vph)	98	594	0	0	663	84	191	125	458	89	0	155
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.903	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3204	3421	0	0	3455	1652	1752	3032	1474	3367	0	1605
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	3421	0	0	3455	1652	1752	3032	1474	3367	0	1605
Satd. Flow (RTOR)						91		248	248			150
Adj. Flow (vph)	113	683	0	0	721	91	245	160	587	120	0	209
Lane Group Flow (vph)	113	683	0	0	721	91	245	454	293	120	0	209
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Detector Phase	5	2			6	4 6	3	3	3	4		4 5
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Minimum Split (s)	12.0	23.0			32.0		12.0	12.0	12.0	12.0		
Total Split (s)	20.0	78.0			58.0		28.0	28.0	28.0	17.0		
Total Split (%)	16.3%	63.4%			47.2%		22.8%	22.8%	22.8%	13.8%		
Maximum Green (s)	14.0	72.0			52.0		22.0	22.0	22.0	11.0		
Yellow Time (s)	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		
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0	-2.0		
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Recall Mode	None	C-Min			C-Min		None	None	None	None		
Walk Time (s)		7.0			7.0							
Flash Don't Walk (s)		10.0			19.0							
Pedestrian Calls (#/hr)		0			0							
v/c Ratio	0.25	0.36			0.54	0.10	0.67	0.55	0.58	0.27		0.38
Control Delay (s/veh)	30.8	7.0			29.6	3.4	55.3	22.1	14.0	51.9		8.7
Queue Delay	0.0	0.4			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	30.8	7.4			29.6	3.4	55.3	22.1	14.0	51.9		8.7
Queue Length 50th (ft)	44	107			215	0	188	81	34	47		23
Queue Length 95th (ft)	51	126			297	13	240	103	79	64		43
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	460	2058			1516	1033	367	831	505	443		551
Starvation Cap Reductn	0	789			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.25	0.54			0.48	0.09	0.67	0.55	0.58	0.27		0.38

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

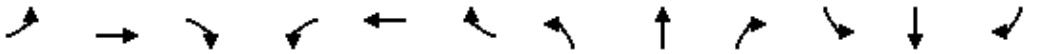
Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	594	0	0	663	84	191	125	458	89	0	155
Future Volume (vph)	98	594	0	0	663	84	191	125	458	89	0	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3204	3421			3455	1652	1752	3031	1474	3367		1605
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3204	3421			3455	1652	1752	3031	1474	3367		1605
Peak-hour factor, PHF	0.87	0.87	0.87	0.92	0.92	0.92	0.78	0.78	0.78	0.74	0.74	0.74
Adj. Flow (vph)	113	683	0	0	721	91	245	160	587	120	0	209
RTOR Reduction (vph)	0	0	0	0	0	41	0	196	196	0	0	109
Lane Group Flow (vph)	113	683	0	0	721	50	245	258	97	120	0	100
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Actuated Green, G (s)	15.6	67.0			45.4	65.6	23.8	23.8	23.8	14.2		29.8
Effective Green, g (s)	17.6	69.0			47.4	67.6	25.8	25.8	25.8	16.2		33.8
Actuated g/C Ratio	0.14	0.56			0.39	0.55	0.21	0.21	0.21	0.13		0.27
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	458	1919			1331	907	367	635	309	443		441
v/s Ratio Prot	0.04	c0.20			c0.21	0.03	c0.14	0.09	0.07	c0.04		0.06
v/s Ratio Perm												
v/c Ratio	0.25	0.36			0.54	0.06	0.67	0.41	0.31	0.27		0.23
Uniform Delay, d1	46.8	14.8			29.4	12.9	44.7	42.0	41.1	48.1		34.5
Progression Factor	0.62	0.45			0.98	1.39	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.3	0.5			1.6	0.0	4.5	0.4	0.6	0.3		0.3
Delay (s)	29.5	7.2			30.3	17.9	49.2	42.4	41.7	48.4		34.8
Level of Service	C	A			C	B	D	D	D	D		C
Approach Delay (s/veh)		10.4			28.9			43.9			39.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

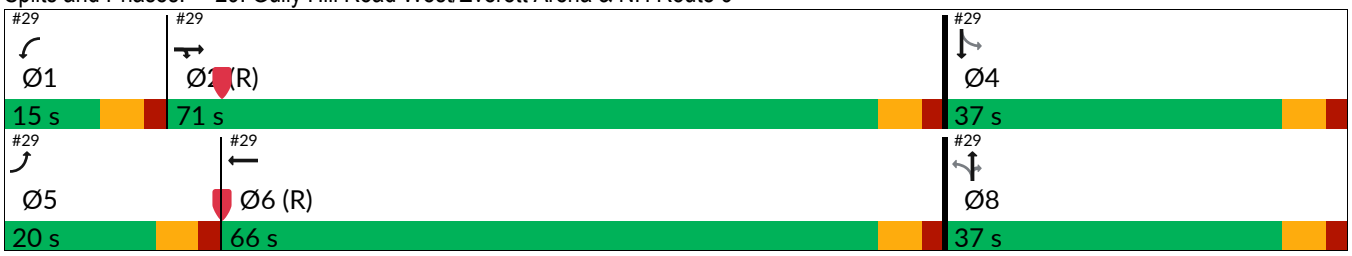


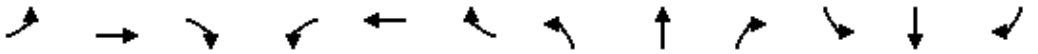
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1010	128	25	709	0	33	0	8	0	1	5
Future Volume (vph)	3	1010	128	25	709	0	33	0	8	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1728	3455	1492	1728	3455	0	0	1752	1620	0	1792	0
Flt Permitted	0.950			0.950				0.748				
Satd. Flow (perm)	1728	3455	1492	1728	3455	0	0	1380	1620	0	1792	0
Satd. Flow (RTOR)			81						80		12	
Adj. Flow (vph)	4	1247	158	26	746	0	38	0	9	0	2	12
Lane Group Flow (vph)	4	1247	158	26	746	0	0	38	9	0	14	0
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0	
Total Split (s)	20.0	71.0	71.0	15.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	16.3%	57.7%	57.7%	12.2%	53.7%		30.1%	30.1%	30.1%	30.1%	30.1%	
Maximum Green (s)	14.0	65.0	65.0	9.0	60.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
v/c Ratio	0.04	0.44	0.13	0.20	0.25			0.31	0.04		0.08	
Control Delay (s/veh)	57.7	5.8	3.1	61.5	2.0			58.1	0.4		26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	57.7	5.8	3.1	61.5	2.0			58.1	0.4		26.7	
Queue Length 50th (ft)	3	202	13	20	42			30	0		1	
Queue Length 95th (ft)	m8	146	18	55	58			62	0		6	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150								
Base Capacity (vph)	224	2865	1251	156	3036			370	493		489	
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	0.02	0.44	0.13	0.17	0.25			0.10	0.02		0.03	

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 55 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9

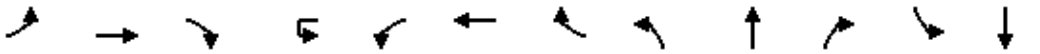




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1010	128	25	709	0	33	0	8	0	1	5
Future Volume (vph)	3	1010	128	25	709	0	33	0	8	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	3455			1752	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	3455			1380	1620		1792	
Peak-hour factor, PHF	0.81	0.81	0.81	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	4	1247	158	26	746	0	38	0	9	0	2	12
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	8	0	11	0
Lane Group Flow (vph)	4	1247	140	26	746	0	0	38	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.3	93.6	93.6	5.0	97.3			6.4	6.4		6.4	
Effective Green, g (s)	3.3	95.6	95.6	7.0	99.3			8.4	8.4		8.4	
Actuated g/C Ratio	0.03	0.78	0.78	0.06	0.81			0.07	0.07		0.07	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2685	1159	98	2789			94	110		122	
v/s Ratio Prot	0.00	c0.36	0.09	c0.02	c0.22						0.00	
v/s Ratio Perm								c0.03	0.00			
v/c Ratio	0.09	0.46	0.12	0.27	0.27			0.40	0.01		0.02	
Uniform Delay, d1	58.4	4.8	3.4	55.5	2.9			54.9	53.4		53.5	
Progression Factor	1.06	0.96	1.14	1.11	0.70			1.00	1.00		1.00	
Incremental Delay, d2	0.8	0.5	0.2	1.4	0.2			2.8	0.0		0.1	
Delay (s)	62.7	5.1	4.0	62.8	2.3			57.7	53.4		53.5	
Level of Service	E	A	A	E	A			E	D		D	
Approach Delay (s/veh)		5.2			4.3			56.9			53.5	
Approach LOS		A			A			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	999	16	1	40	706	1	28	0	37	1	0
Future Volume (vph)	3	999	16	1	40	706	1	28	0	37	1	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.998							0.850			
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Satd. Flow (RTOR)		1							542			
Adj. Flow (vph)	4	1314	21	1	44	784	1	30	0	39	4	0
Lane Group Flow (vph)	4	1335	0	0	45	785	0	30	39	0	4	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	15.0	50.0		15.0	15.0	50.0		14.0	15.0		14.0	15.0
Total Split (%)	12.2%	40.7%		12.2%	12.2%	40.7%		11.4%	12.2%		11.4%	12.2%
Maximum Green (s)	9.0	44.0		9.0	9.0	44.0		8.0	9.0		8.0	9.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.50			0.30	0.27		0.19	0.06		0.03	
Control Delay (s/veh)	74.3	4.7			57.1	3.6		51.9	0.2		54.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	
Total Delay (s/veh)	74.3	4.7			57.1	3.6		51.9	0.2		54.0	
Queue Length 50th (ft)	3	368			34	43		24	0		3	
Queue Length 95th (ft)	m9	55			73	165		52	0		5	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	154	2649			164	2929		169	629		151	
Starvation Cap Reductn	0	96			0	0		0	0		0	
Spillback Cap Reductn	0	0			0	0		0	0		0	
Storage Cap Reductn	0	0			0	0		0	0		0	
Reduced v/c Ratio	0.03	0.52			0.27	0.27		0.18	0.06		0.03	

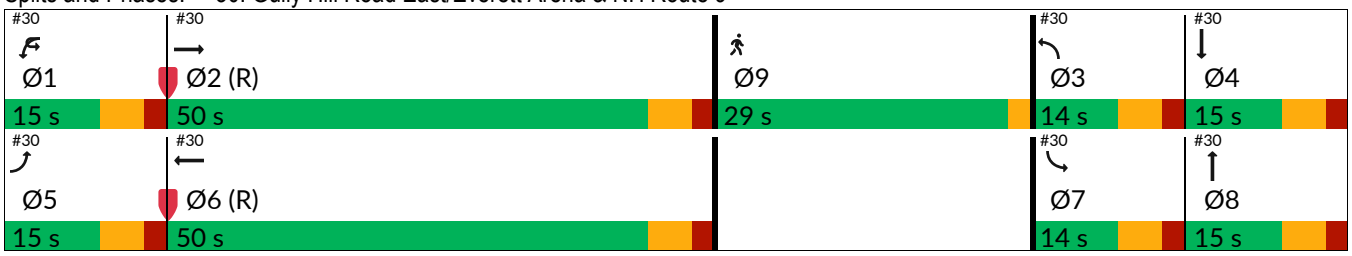
Intersection Summary
Cycle Length: 123

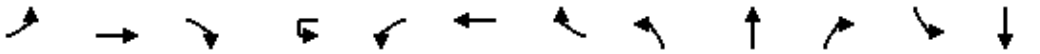
Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		24%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 123
Offset: 61 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9





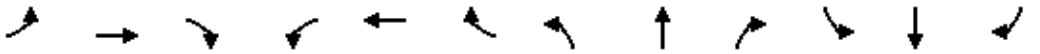
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	999	16	1	40	706	1	28	0	37	1	0
Future Volume (vph)	3	999	16	1	40	706	1	28	0	37	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	
Frt	1.00	1.00			1.00	1.00		1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (prot)	1728	3447			1728	3454		1703	1524		1865	
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (perm)	1728	3447			1728	3454		1703	1524		1865	
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	4	1314	21	1	44	784	1	30	0	39	4	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	4	1335	0	0	45	785	0	30	3	0	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.3	83.3			7.5	89.5		7.0	6.9		1.3	
Effective Green, g (s)	3.3	85.3			9.5	91.5		9.0	8.9		3.3	
Actuated g/C Ratio	0.03	0.69			0.08	0.74		0.07	0.07		0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2390			133	2569		124	110		50	
v/s Ratio Prot	0.00	c0.39			c0.03	0.23		c0.02	c0.00		0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.56			0.34	0.31		0.24	0.03		0.08	
Uniform Delay, d1	58.4	9.4			53.8	5.2		53.8	53.0		58.4	
Progression Factor	1.37	0.50			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.8	0.9			1.5	0.3		1.0	0.1		0.7	
Delay (s)	81.0	5.6			55.3	5.5		54.8	53.1		59.1	
Level of Service	F	A			E	A		D	D		E	
Approach Delay (s/veh)		5.8				8.2			53.8			59.1
Approach LOS		A				A			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

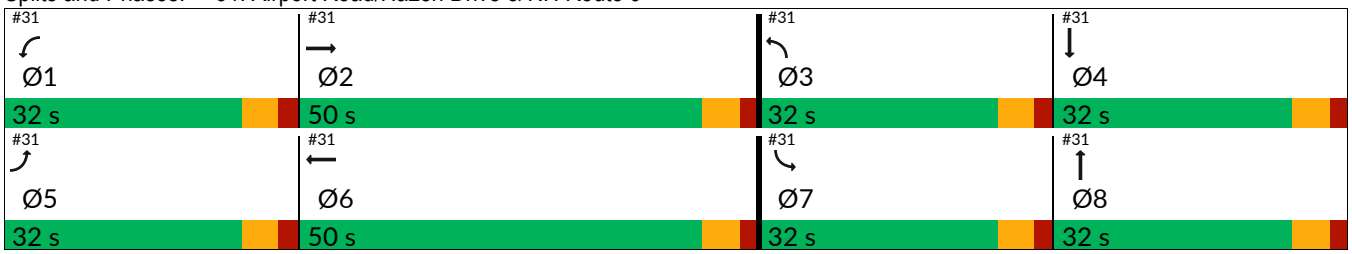


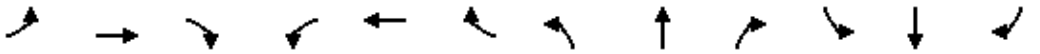
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	512	206	140	576	120	102	121	101	20	117	70
Future Volume (vph)	259	512	206	140	576	120	102	121	101	20	117	70
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			275			157			157			157
Adj. Flow (vph)	345	683	275	151	619	129	119	141	117	26	150	90
Lane Group Flow (vph)	345	683	275	151	619	129	119	141	117	26	150	90
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.70	0.52	0.17	0.53	0.68	0.08	0.49	0.29	0.07	0.17	0.53	0.06
Control Delay (s/veh)	46.1	28.9	0.2	49.3	39.2	0.1	50.3	35.5	0.1	51.9	49.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.1	28.9	0.2	49.3	39.2	0.1	50.3	35.5	0.1	51.9	49.4	0.1
Queue Length 50th (ft)	204	181	0	92	192	0	74	81	0	17	94	0
Queue Length 95th (ft)	320	251	0	184	297	0	148	150	0	45	159	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	491	1559	1599	491	1559	1652	465	516	1568	461	485	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.44	0.17	0.31	0.40	0.08	0.26	0.27	0.07	0.06	0.31	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 104.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

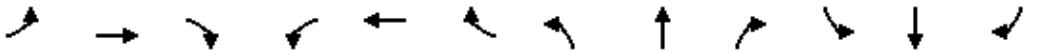




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	512	206	140	576	120	102	121	101	20	117	70
Future Volume (vph)	259	512	206	140	576	120	102	121	101	20	117	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.75	0.75	0.75	0.93	0.93	0.93	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	345	683	275	151	619	129	119	141	117	26	150	90
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	345	683	275	151	619	129	119	141	117	26	150	90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	26.6	37.3	106.4	14.6	25.3	106.4	13.1	25.9	106.4	4.6	17.4	106.4
Effective Green, g (s)	28.6	39.3	106.4	16.6	27.3	106.4	15.1	27.9	106.4	6.6	19.4	106.4
Actuated g/C Ratio	0.27	0.37	1.00	0.16	0.26	1.00	0.14	0.26	1.00	0.06	0.18	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	480	1276	1599	278	886	1652	240	467	1568	104	321	1501
v/s Ratio Prot	c0.19	0.20		0.08	c0.18		c0.07	0.08		0.02	c0.08	
v/s Ratio Perm			0.17			0.08			0.07			0.06
v/c Ratio	0.72	0.54	0.17	0.54	0.70	0.08	0.50	0.30	0.07	0.25	0.47	0.06
Uniform Delay, d1	35.3	26.4	0.0	41.4	35.8	0.0	42.1	31.4	0.0	47.5	38.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.4	0.2	2.2	2.4	0.1	1.6	0.4	0.1	1.3	1.1	0.1
Delay (s)	40.4	26.8	0.2	43.6	38.2	0.1	43.7	31.8	0.1	48.8	40.0	0.1
Level of Service	D	C	A	D	D	A	D	C	A	D	D	A
Approach Delay (s/veh)		24.8			33.7			25.7			27.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	404	21	7	466	168	82	96	7	154	181	114
Future Volume (vph)	45	404	21	7	466	168	82	96	7	154	181	114
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.993			0.960			0.990			0.945	
Flt Protected	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (prot)	1787	3313	0	1652	3284	0	1652	1721	0	1585	1684	0
Flt Permitted	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (perm)	1787	3313	0	1652	3284	0	1652	1721	0	1585	1684	0
Satd. Flow (RTOR)		3			34			2			17	
Adj. Flow (vph)	50	449	23	8	507	183	117	137	10	177	208	131
Lane Group Flow (vph)	50	472	0	8	690	0	117	147	0	159	357	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.24	0.35		0.05	0.67		0.41	0.49		0.39	0.81	
Control Delay (s/veh)	43.2	19.5		43.9	30.1		40.2	41.3		35.6	49.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	43.2	19.5		43.9	30.1		40.2	41.3		35.6	49.1	
Queue Length 50th (ft)	27	87		5	177		63	79		84	203	
Queue Length 95th (ft)	69	171		21	268		95	114		166	#424	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125			130			350		
Base Capacity (vph)	353	1517		326	1319		422	441		405	443	
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	0.14	0.31		0.02	0.52		0.28	0.33		0.39	0.81	

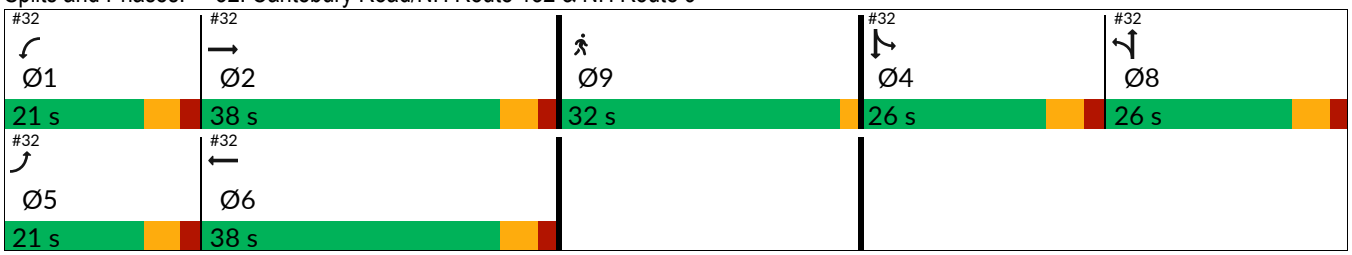
Intersection Summary
Cycle Length: 143

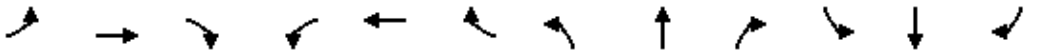
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 89
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	404	21	7	466	168	82	96	7	154	181	114
Future Volume (vph)	45	404	21	7	466	168	82	96	7	154	181	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3312		1652	3285		1652	1721		1585	1685	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3312		1652	3285		1652	1721		1585	1685	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.70	0.70	0.70	0.87	0.87	0.87
Adj. Flow (vph)	50	449	23	8	507	183	117	137	10	177	208	131
RTOR Reduction (vph)	0	2	0	0	23	0	0	2	0	0	13	0
Lane Group Flow (vph)	50	470	0	8	667	0	117	145	0	159	344	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	6.6	34.1		1.2	28.7		13.4	13.4		20.7	20.7	
Effective Green, g (s)	8.6	36.1		3.2	30.7		15.4	15.4		22.7	22.7	
Actuated g/C Ratio	0.09	0.39		0.03	0.33		0.16	0.16		0.24	0.24	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	1280		56	1079		272	283		385	409	
v/s Ratio Prot	c0.03	0.14		0.00	c0.20		0.07	c0.08		0.10	c0.20	
v/s Ratio Perm												
v/c Ratio	0.30	0.37		0.14	0.62		0.43	0.51		0.41	0.84	
Uniform Delay, d1	39.6	20.5		43.8	26.4		35.1	35.6		29.7	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.2		1.2	1.1		1.1	1.6		0.7	14.4	
Delay (s)	40.7	20.7		44.9	27.5		36.2	37.2		30.5	48.1	
Level of Service	D	C		D	C		D	D		C	D	
Approach Delay (s/veh)		22.6			27.7			36.7			42.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

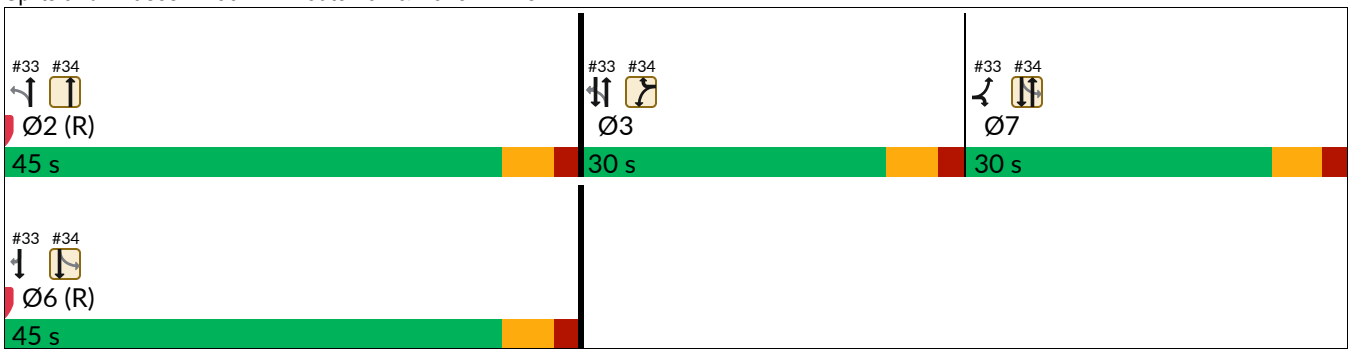
c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	101	11	25	278	404	506			
Future Volume (vph)	101	11	25	278	404	506			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	1719	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.942					
Satd. Flow (perm)	1719	1538	0	1680	1881	1546			
Satd. Flow (RTOR)		16				610			
Adj. Flow (vph)	144	16	30	335	487	610			
Lane Group Flow (vph)	144	16	0	365	487	610			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.34	0.04		0.32	0.38	0.49			
Control Delay (s/veh)	35.2	13.6		8.0	8.7	3.3			
Queue Delay	0.0	0.0		0.0	1.0	0.5			
Total Delay (s/veh)	35.2	13.6		8.0	9.6	3.9			
Queue Length 50th (ft)	83	0		93	160	59			
Queue Length 95th (ft)	107	12		125	202	43			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	425	392		1144	1280	1247			
Starvation Cap Reductn	0	0		0	516	282			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.34	0.04		0.32	0.64	0.63			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	11	25	278	404	506
Future Volume (vph)	101	11	25	278	404	506
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1719	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.94	1.00	1.00
Satd. Flow (perm)	1719	1538		1679	1881	1546
Peak-hour factor, PHF	0.70	0.70	0.83	0.83	0.83	0.83
Adj. Flow (vph)	144	16	30	335	487	610
RTOR Reduction (vph)	0	12	0	0	0	198
Lane Group Flow (vph)	144	4	0	365	487	412
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	24.0	24.0		69.0	69.0	69.0
Effective Green, g (s)	26.0	26.0		71.0	71.0	71.0
Actuated g/C Ratio	0.25	0.25		0.68	0.68	0.68
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	425	380		1135	1271	1045
v/s Ratio Prot	c0.08	0.00			0.26	
v/s Ratio Perm				0.22		c0.27
v/c Ratio	0.34	0.01		0.32	0.38	0.39
Uniform Delay, d1	32.4	29.8		7.0	7.4	7.5
Progression Factor	1.00	1.00		1.00	1.05	3.98
Incremental Delay, d2	0.5	0.0		0.2	0.2	0.2
Delay (s)	32.9	29.8		7.2	7.9	30.1
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	32.6			7.2	20.3	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

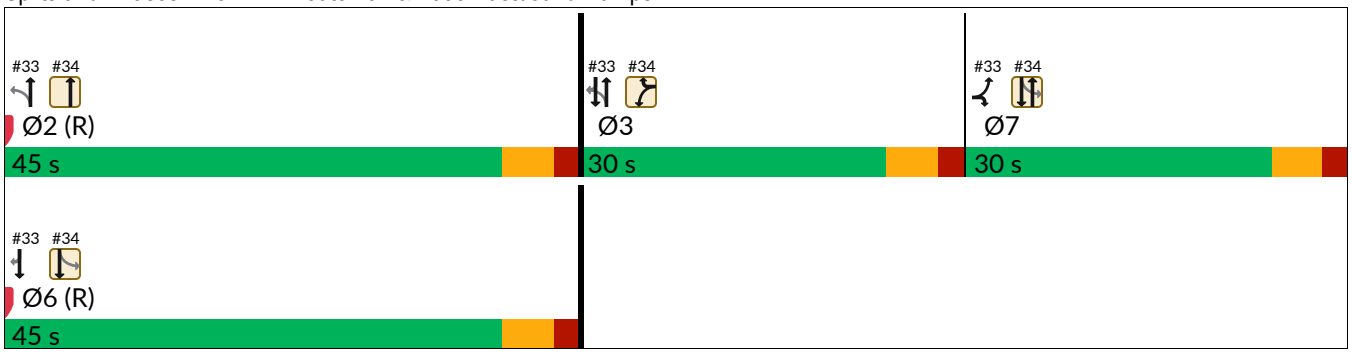
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	256	133	349	47	32	667			
Future Volume (vph)	256	133	349	47	32	667			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.982						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3264	0	1728	1818			
Flt Permitted	0.950				0.451				
Satd. Flow (perm)	1770	1583	3264	0	820	1818			
Satd. Flow (RTOR)		152	31						
Adj. Flow (vph)	298	155	447	60	38	785			
Lane Group Flow (vph)	298	155	507	0	38	785			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.65	0.30	0.23		0.07	0.65			
Control Delay (s/veh)	42.8	7.1	4.6		6.5	13.5			
Queue Delay	0.0	0.0	0.0		0.0	0.0			
Total Delay (s/veh)	42.8	7.1	4.6		6.5	13.5			
Queue Length 50th (ft)	185	2	39		8	271			
Queue Length 95th (ft)	265	46	44		18	348			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	464	527	2232		558	1238			
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	0.64	0.29	0.23		0.07	0.63			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

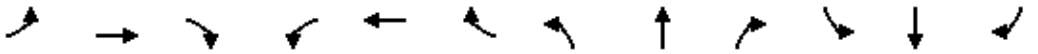


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	256	133	349	47	32	667
Future Volume (vph)	256	133	349	47	32	667
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3264		1728	1818
Flt Permitted	0.95	1.00	1.00		0.45	1.00
Satd. Flow (perm)	1770	1583	3264		821	1818
Peak-hour factor, PHF	0.86	0.86	0.78	0.78	0.85	0.85
Adj. Flow (vph)	298	155	447	60	38	785
RTOR Reduction (vph)	0	113	10	0	0	0
Lane Group Flow (vph)	298	42	497	0	38	785
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	25.1	25.1	67.9		67.9	67.9
Effective Green, g (s)	27.1	27.1	69.9		69.9	69.9
Actuated g/C Ratio	0.26	0.26	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	456	408	2172		546	1210
v/s Ratio Prot	c0.17	0.03	0.15			c0.43
v/s Ratio Perm					0.05	
v/c Ratio	0.65	0.10	0.23		0.07	0.65
Uniform Delay, d1	34.8	29.7	6.9		6.2	10.3
Progression Factor	1.00	1.00	0.66		1.00	1.00
Incremental Delay, d2	3.4	0.1	0.1		0.1	1.2
Delay (s)	38.1	29.8	4.6		6.2	11.5
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	35.3		4.6			11.3
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

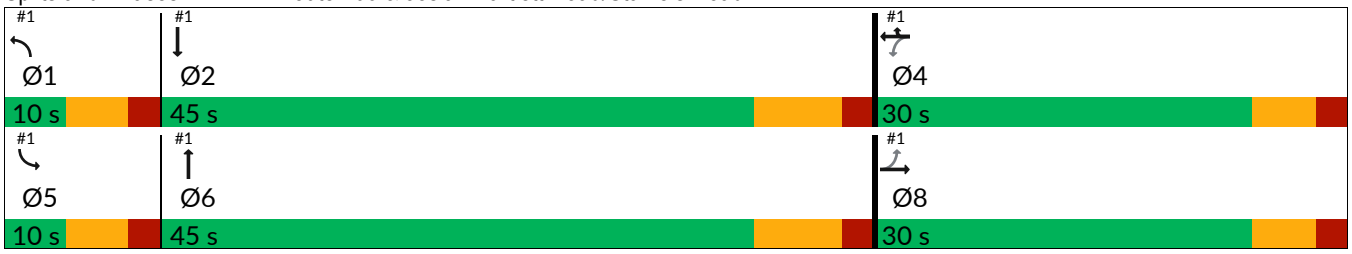
2024 Existing Weekday Evening Peak-Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	65	1	60	1	1043	124	30	531	6
Future Volume (vph)	0	2	4	65	1	60	1	1043	124	30	531	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910				0.850		0.984			0.998	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1811	1583	1787	3517	0	1770	3532	0
Flt Permitted					0.723		0.950			0.950		
Satd. Flow (perm)	0	1662	0	0	1374	1583	1787	3517	0	1770	3532	0
Satd. Flow (RTOR)		6				135		20			2	
Adj. Flow (vph)	0	3	6	72	1	67	1	1110	132	32	571	6
Lane Group Flow (vph)	0	9	0	0	73	67	1	1242	0	32	577	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.28	0.16	0.01	0.52		0.24	0.23	
Control Delay (s/veh)		17.3			26.6	1.2	32.0	9.0		35.8	5.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.3			26.6	1.2	32.0	9.0		35.8	5.6	
Queue Length 50th (ft)		1			20	0	0	99		10	36	
Queue Length 95th (ft)		9			64	4	5	260		41	102	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		803			661	832	132	2509		131	2610	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.11	0.08	0.01	0.50		0.24	0.22	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 57.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



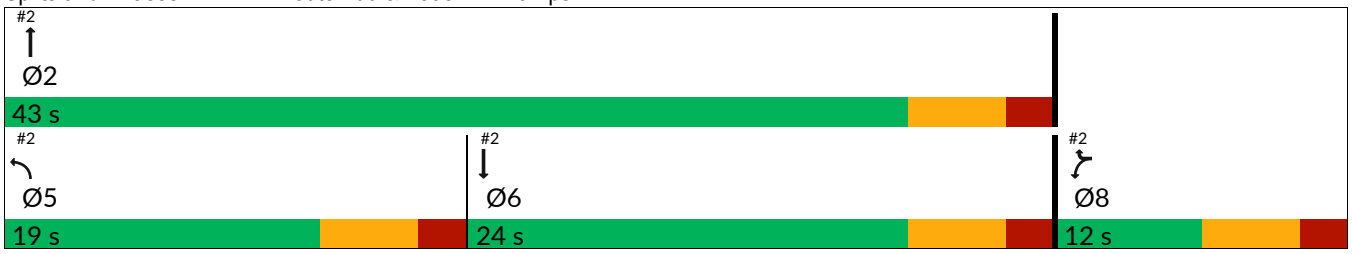
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	65	1	60	1	1043	124	30	531	6
Future Volume (vph)	0	2	4	65	1	60	1	1043	124	30	531	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.91			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1663			1811	1583	1787	3517		1770	3534	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1663			1374	1583	1787	3517		1770	3534	
Peak-hour factor, PHF	0.63	0.63	0.63	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	3	6	72	1	67	1	1110	132	32	571	6
RTOR Reduction (vph)	0	5	0	0	0	57	0	8	0	0	1	0
Lane Group Flow (vph)	0	4	0	0	73	10	1	1234	0	32	576	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.1			7.1	7.1	0.6	35.8		1.3	36.5	
Effective Green, g (s)		9.1			9.1	9.1	0.6	37.8		1.3	38.5	
Actuated g/C Ratio		0.14			0.14	0.14	0.01	0.59		0.02	0.60	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		237			196	226	16	2087		36	2135	
v/s Ratio Prot		0.00				0.01	0.00	c0.35		c0.02	0.16	
v/s Ratio Perm					c0.05							
v/c Ratio		0.02			0.37	0.04	0.06	0.59		0.89	0.27	
Uniform Delay, d1		23.5			24.7	23.5	31.3	8.1		31.1	6.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.2	0.1	1.6	0.5		104.6	0.1	
Delay (s)		23.5			25.9	23.6	32.9	8.6		135.7	6.0	
Level of Service		C			C	C	C	A		F	A	
Approach Delay (s/veh)		23.5			24.8			8.6			12.8	
Approach LOS		C			C			A			B	

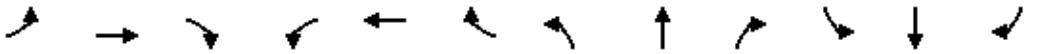
Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	15.5
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	0	15	501	1421	0	0	373	417
Future Volume (vph)	0	0	0	7	0	15	501	1421	0	0	373	417
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Satd. Flow (RTOR)						179						434
Adj. Flow (vph)	0	0	0	10	0	22	527	1496	0	0	389	434
Lane Group Flow (vph)	0	0	0	10	0	22	527	1496	0	0	389	434
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.03		0.05	0.46	0.49			0.32	0.28
Control Delay (s/veh)				19.1		0.2	14.2	2.9			11.2	0.5
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.1		0.2	14.2	2.9			11.2	0.5
Queue Length 50th (ft)				1		0	29	0			24	0
Queue Length 95th (ft)				10		0	117	137			76	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				415		498	1427	3084			1923	1531
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		0.04	0.37	0.49			0.20	0.28

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 39.4
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

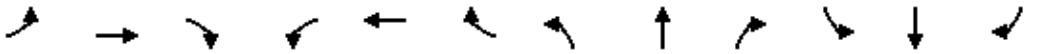




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	0	15	501	1421	0	0	373	417
Future Volume (vph)	0	0	0	7	0	15	501	1421	0	0	373	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1847		1599	3385	3490			3421	1531
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1847		1599	3385	3490			3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	10	0	22	527	1496	0	0	389	434
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	10	0	2	527	1496	0	0	389	434
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.7		1.7	11.1	29.3			12.2	43.0
Effective Green, g (s)				3.7		3.7	13.1	31.3			14.2	43.0
Actuated g/C Ratio				0.09		0.09	0.30	0.73			0.33	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				158		137	1031	2540			1129	1531
v/s Ratio Prot				0.01		0.00	0.16	c0.43			0.11	
v/s Ratio Perm												c0.28
v/c Ratio				0.06		0.01	0.51	0.59			0.34	0.28
Uniform Delay, d1				18.1		18.0	12.3	2.8			10.9	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		0.0	0.4	0.4			0.2	0.5
Delay (s)				18.2		18.0	12.7	3.1			11.1	0.5
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			18.1			5.6			5.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

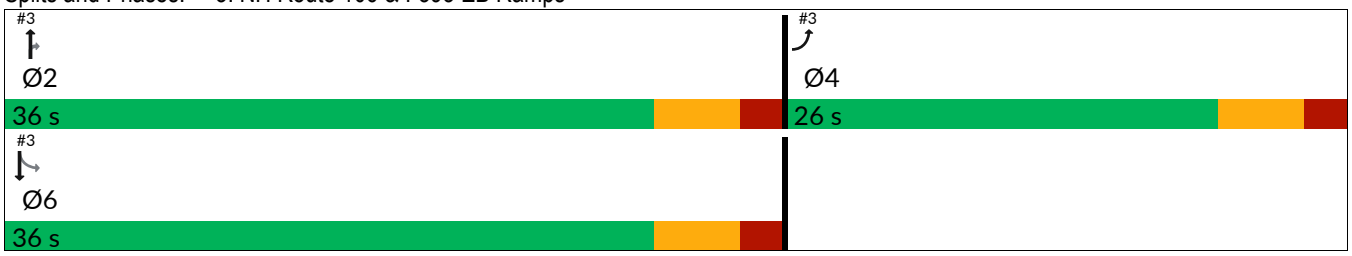
c Critical Lane Group

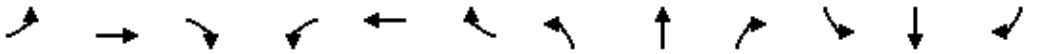


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	829	0	616	0	0	0	0	1093	8	8	372	0
Future Volume (vph)	829	0	616	0	0	0	0	1093	8	8	372	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.924	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3224	0
Satd. Flow (RTOR)			622						53			
Adj. Flow (vph)	837	0	622	0	0	0	0	1201	9	10	448	0
Lane Group Flow (vph)	837	0	622	0	0	0	0	1201	9	0	458	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.69		0.22					0.69	0.01		0.28	
Control Delay (s/veh)	19.7		0.2					13.3	0.0		8.8	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	19.7		0.2					13.3	0.0		8.8	
Queue Length 50th (ft)	135		0					163	0		46	
Queue Length 95th (ft)	192		0					226	0		65	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1385		2814					2008	920		1874	
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	0.60		0.22					0.60	0.01		0.24	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 56.4
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	829	0	616	0	0	0	0	1093	8	8	372	0
Future Volume (vph)	829	0	616	0	0	0	0	1093	8	8	372	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3486	
Flt Permitted	0.95		1.00					1.00	1.00		0.92	
Satd. Flow (perm)	3467		2814					3455	1546		3224	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	837	0	622	0	0	0	0	1201	9	10	448	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	837	0	622	0	0	0	0	1201	5	0	458	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	17.7		56.1					26.4	26.4		26.4	
Effective Green, g (s)	19.7		56.1					28.4	28.4		28.4	
Actuated g/C Ratio	0.35		1.00					0.51	0.51		0.51	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1217		2814					1749	782		1632	
v/s Ratio Prot	c0.24							c0.35				
v/s Ratio Perm			0.22						0.00		0.14	
v/c Ratio	0.69		0.22					0.69	0.01		0.28	
Uniform Delay, d1	15.6		0.0					10.5	6.9		8.0	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	1.6		0.2					1.1	0.0		0.1	
Delay (s)	17.2		0.2					11.6	6.9		8.1	
Level of Service	B		A					B	A		A	
Approach Delay (s/veh)		9.9			0.0			11.6			8.1	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

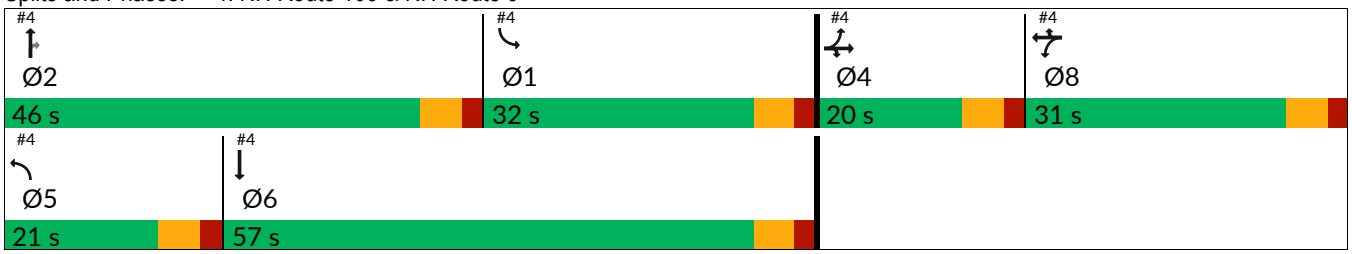
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	257	41	234	179	47	40	704	432	85	595	308
Future Volume (vph)	350	257	41	234	179	47	40	704	432	85	595	308
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.983		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1557	3221	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.983		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1557	3221	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			475			302
Adj. Flow (vph)	385	282	45	275	211	55	44	774	475	93	654	338
Lane Group Flow (vph)	385	282	45	159	327	55	44	774	475	93	654	338
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.66	0.90	0.11	0.52	0.51	0.12	0.24	0.62	0.55	0.40	0.46	0.19
Control Delay (s/veh)	47.7	74.4	0.5	44.2	39.7	0.6	48.8	29.5	5.2	48.2	23.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.7	74.4	0.5	44.2	39.7	0.6	48.8	29.5	5.2	48.2	23.1	0.2
Queue Length 50th (ft)	122	182	0	103	105	0	26	213	0	56	163	0
Queue Length 95th (ft)	#233	#433	0	182	159	0	69	330	74	119	253	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	581	315	415	455	942	574	318	1572	962	524	1984	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.90	0.11	0.35	0.35	0.10	0.14	0.49	0.49	0.18	0.33	0.19

Intersection Summary

Cycle Length: 129
Actuated Cycle Length: 96.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	257	41	234	179	47	40	704	432	85	595	308
Future Volume (vph)	350	257	41	234	179	47	40	704	432	85	595	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1557	3220	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1557	3220	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	385	282	45	275	211	55	44	774	475	93	654	338
RTOR Reduction (vph)	0	0	37	0	0	44	0	0	308	0	0	0
Lane Group Flow (vph)	385	282	8	159	327	11	44	774	167	93	654	338
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.7	14.7	14.7	17.0	17.0	17.0	5.0	32.6	32.6	10.3	37.9	98.6
Effective Green, g (s)	16.7	16.7	16.7	19.0	19.0	19.0	7.0	34.6	34.6	12.3	39.9	98.6
Actuated g/C Ratio	0.17	0.17	0.17	0.19	0.19	0.19	0.07	0.35	0.35	0.12	0.40	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	567	307	261	300	620	295	122	1212	542	215	1398	1812
v/s Ratio Prot	0.11	c0.16	0.00	c0.10	0.10	0.01	0.03	c0.22		0.05	c0.19	
v/s Ratio Perm									0.11			0.19
v/c Ratio	0.68	0.92	0.03	0.53	0.53	0.04	0.36	0.64	0.31	0.43	0.47	0.19
Uniform Delay, d1	38.4	40.3	34.2	35.8	35.8	32.4	43.7	26.8	23.3	39.9	21.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	30.8	0.0	1.8	0.8	0.1	1.8	1.1	0.3	1.4	0.2	0.2
Delay (s)	41.7	71.1	34.2	37.6	36.6	32.4	45.5	27.9	23.6	41.3	21.8	0.2
Level of Service	D	E	C	D	D	C	D	C	C	D	C	A
Approach Delay (s/veh)		52.8			36.4			26.9			16.8	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	9	73	1	159	0	735	20	98	676	0
Future Vol, veh/h	1	1	9	73	1	159	0	735	20	98	676	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	32	32	32	85	85	85	84	84	84	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	3	3	3
Mvmt Flow	3	3	28	86	1	187	0	875	24	100	690	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1765	1789	690	1766	1765	875	690	0	0	899	0	0
Stage 1	890	890	-	875	875	-	-	-	-	-	-	-
Stage 2	876	899	-	891	890	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.13	-	-
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	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	66	82	449	~ 66	85	351	909	-	-	751	-	-
Stage 1	340	364	-	347	370	-	-	-	-	-	-	-
Stage 2	347	360	-	340	364	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	71	449	~ 52	74	351	909	-	-	751	-	-
Mov Cap-2 Maneuver	26	71	-	~ 52	74	-	-	-	-	-	-	-
Stage 1	295	315	-	347	370	-	-	-	-	-	-	-
Stage 2	162	360	-	273	315	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	32.1	174.32	0	1.33
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	909	-	-	39	449	52	351	751	-	-
HCM Lane V/C Ratio	-	-	-	0.162	0.063	1.663	0.532	0.133	-	-
HCM Ctrl Dly (s/v)	0	-	-	115.6	13.6$	496.7	26.3	10.5	-	-
HCM Lane LOS	A	-	-	F	B	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	8.2	3	0.5	-	-

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

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	144	148	950	623	135
Future Vol, veh/h	37	144	148	950	623	135
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	90	90	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	39	150	164	1056	656	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2040	656	798	0	-	0
Stage 1	656	-	-	-	-	-
Stage 2	1384	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	63	467	829	-	-	-
Stage 1	518	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	50	467	829	-	-	-
Mov Cap-2 Maneuver	50	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	233	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	52	1.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	829	-	50	467	-	-
HCM Lane V/C Ratio	0.198	-	0.769	0.321	-	-
HCM Ctrl Dly (s/v)	10.4	-	191	16.3	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.7	-	3.1	1.4	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	19	22	1065	721	46
Future Vol, veh/h	33	19	22	1065	721	46
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	92	92
Heavy Vehicles, %	0	0	1	1	3	3
Mvmt Flow	38	22	25	1210	784	50

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2044	784	834	0	-	0
Stage 1	784	-	-	-	-	-
Stage 2	1260	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	63	397	804	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	269	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	61	397	804	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	269	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	89.81	0.19	0
HCM LOS	F		

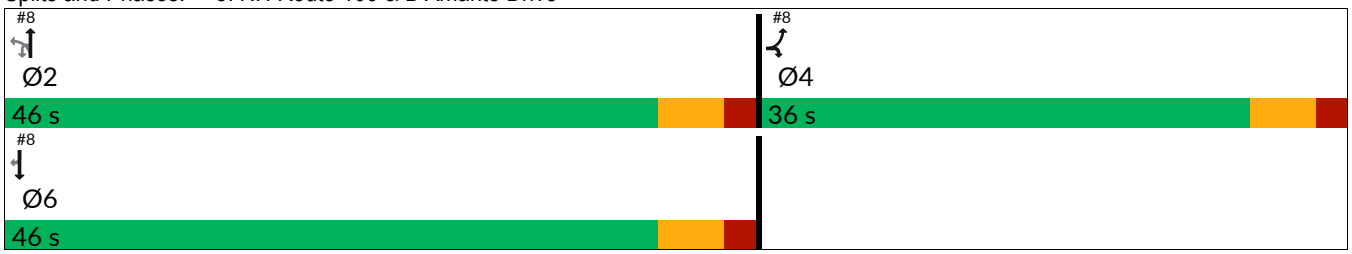
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	804	-	61	397	-	-
HCM Lane V/C Ratio	0.031	-	0.618	0.054	-	-
HCM Ctrl Dly (s/v)	9.6	-	133.1	14.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2.6	0.2	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	267	75	1	153	820	554	186
Future Volume (vph)	267	75	1	153	820	554	186
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1711	1863	1783	1568
Flt Permitted	0.950			0.347			
Satd. Flow (perm)	1745	1561	0	625	1863	1783	1568
Satd. Flow (RTOR)		76					202
Adj. Flow (vph)	270	76	1	180	965	602	202
Lane Group Flow (vph)	270	76	0	181	965	602	202
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.61	0.17		0.46	0.82	0.54	0.19
Control Delay (s/veh)	28.3	6.0		13.0	19.5	10.4	1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.3	6.0		13.0	19.5	10.4	1.7
Queue Length 50th (ft)	98	0		35	274	126	0
Queue Length 95th (ft)	165	27		97	#591	268	26
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	807	763		392	1170	1120	1060
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	0.10		0.46	0.82	0.54	0.19

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 69.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	267	75	1	153	820	554	186
Future Volume (vph)	267	75	1	153	820	554	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1711	1863	1783	1568
Flt Permitted	0.95	1.00		0.35	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		626	1863	1783	1568
Peak-hour factor, PHF	0.99	0.99	0.85	0.85	0.85	0.92	0.92
Adj. Flow (vph)	270	76	1	180	965	602	202
RTOR Reduction (vph)	0	57	0	0	0	0	75
Lane Group Flow (vph)	270	19	0	181	965	602	127
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	15.7	15.7		41.5	41.5	41.5	41.5
Effective Green, g (s)	17.7	17.7		43.5	43.5	43.5	43.5
Actuated g/C Ratio	0.26	0.26		0.63	0.63	0.63	0.63
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	446	399		393	1171	1120	985
v/s Ratio Prot	c0.15	0.01			c0.52	0.34	
v/s Ratio Perm				0.29			0.08
v/c Ratio	0.61	0.05		0.46	0.82	0.54	0.13
Uniform Delay, d1	22.7	19.4		6.7	9.9	7.2	5.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1		0.9	4.8	0.5	0.1
Delay (s)	25.0	19.5		7.6	14.7	7.7	5.3
Level of Service	C	B		A	B	A	A
Approach Delay (s/veh)	23.8				13.6	7.1	
Approach LOS	C				B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	160	161	959	684	32
Future Vol, veh/h	15	160	161	959	684	32
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	91	91	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	198	177	1054	743	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2151	743	778	0	-	0
Stage 1	743	-	-	-	-	-
Stage 2	1408	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	53	416	843	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	42	416	843	-	-	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	227	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	82.52	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	843	-	236	-	-
HCM Lane V/C Ratio	0.21	-	0.915	-	-
HCM Ctrl Dly (s/v)	10.4	-	82.5	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	7.8	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	319	318	21	23	22
Future Vol, veh/h	24	319	318	21	23	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	94	94	72	72
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	26	347	338	22	32	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	361	0	-	0	575	349
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.115	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2095	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1203	-	-	-	468	698
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	796	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1203	-	-	-	458	698
Mov Cap-2 Maneuver	-	-	-	-	458	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	796	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.56	0	11.96
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1203	-	-	-	458	698
HCM Lane V/C Ratio	0.022	-	-	-	0.07	0.044
HCM Ctrl Dly (s/v)	8.1	-	-	-	13.5	10.4
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	216	85	120	220	130	127
Future Vol, veh/h	216	85	120	220	130	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	91	91	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	251	99	132	242	135	132

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	350	0	806	175
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	505	-
Critical Hdwy	-	-	4.115	-	6.615	6.915
Critical Hdwy Stg 1	-	-	-	-	5.815	-
Critical Hdwy Stg 2	-	-	-	-	5.415	-
Follow-up Hdwy	-	-	2.2095	-	3.5095	3.3095
Pot Cap-1 Maneuver	-	-	1214	-	337	841
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	607	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1214	-	300	841
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	607	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.94	18.38
HCM LOS			C

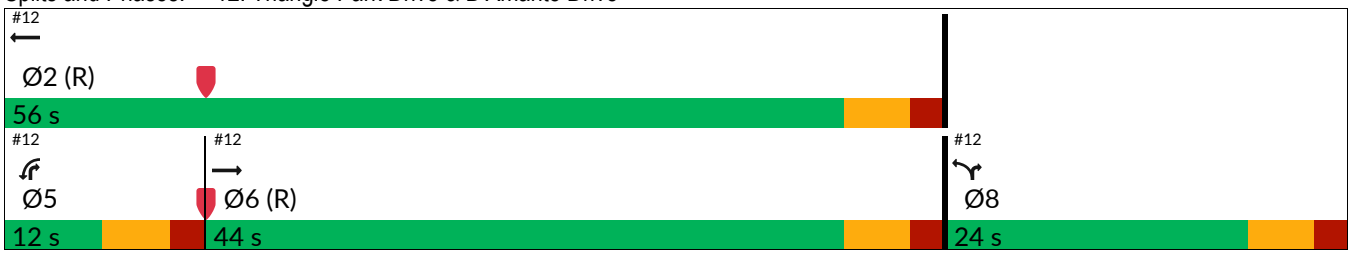
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	300	841	-	-	1214	-
HCM Lane V/C Ratio	0.451	0.157	-	-	0.109	-
HCM Ctrl Dly (s/v)	26.5	10.1	-	-	8.3	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2.2	0.6	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	242	109	47	303	101	59
Future Volume (vph)	242	109	47	303	101	59
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.953					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3293	0	1728	1881	1787	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3293	0	1728	1881	1787	1599
Satd. Flow (RTOR)	124					79
Adj. Flow (vph)	275	124	54	348	135	79
Lane Group Flow (vph)	399	0	54	348	135	79
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	44.0		12.0	56.0	24.0	
Total Split (%)	55.0%		15.0%	70.0%	30.0%	
Maximum Green (s)	38.0		6.0	50.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		None	C-Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.20		0.25	0.25	0.45	0.13
Control Delay (s/veh)	5.6		33.9	4.5	34.3	4.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.6		33.9	4.5	34.3	4.4
Queue Length 50th (ft)	20		25	46	62	0
Queue Length 95th (ft)	44		54	89	88	16
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2005		216	1380	446	592
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	0.20		0.25	0.25	0.30	0.13

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

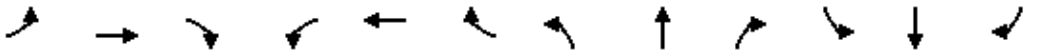
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	242	109	47	303	101	59
Future Volume (vph)	242	109	47	303	101	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3294		1728	1881	1787	1599
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3294		1728	1881	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.87	0.87	0.75	0.75
Adj. Flow (vph)	275	124	54	348	135	79
RTOR Reduction (vph)	53	0	0	0	0	53
Lane Group Flow (vph)	346	0	54	348	135	26
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	43.9		6.8	56.7	11.3	24.1
Effective Green, g (s)	45.9		8.8	58.7	13.3	26.1
Actuated g/C Ratio	0.57		0.11	0.73	0.17	0.33
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1889		190	1380	297	521
v/s Ratio Prot	0.11		0.03	c0.18	c0.08	0.02
v/s Ratio Perm						
v/c Ratio	0.18		0.28	0.25	0.45	0.05
Uniform Delay, d1	8.1		32.7	3.5	30.1	18.5
Progression Factor	0.81		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		0.8	0.4	1.1	0.0
Delay (s)	6.8		33.5	3.9	31.2	18.5
Level of Service	A		C	A	C	B
Approach Delay (s/veh)	6.8			7.9	26.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

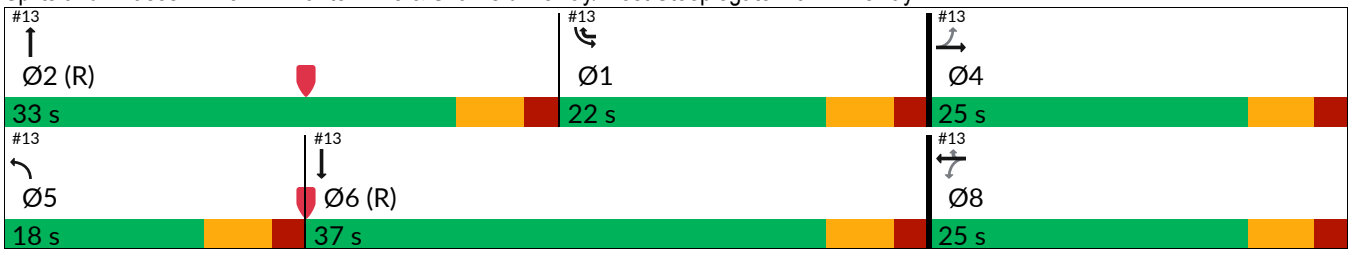


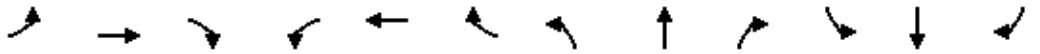
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	2	41	7	6	33	43	358	23	43	368	48
Future Volume (vph)	94	2	41	7	6	33	43	358	23	43	368	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.955				0.850		0.991			0.983	
Flt Protected		0.967			0.973		0.950			0.950		
Satd. Flow (prot)	0	3334	0	0	1910	1669	1787	3424	0	3351	3396	0
Flt Permitted		0.782			0.793		0.950			0.950		
Satd. Flow (perm)	0	2696	0	0	1557	1669	1787	3424	0	3351	3396	0
Satd. Flow (RTOR)		44				123		9			21	
Adj. Flow (vph)	101	2	44	11	9	51	46	381	24	51	433	56
Lane Group Flow (vph)	0	147	0	0	20	51	46	405	0	51	489	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	25.0	25.0		25.0	25.0	22.0	18.0	33.0		22.0	37.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%	27.5%	22.5%	41.3%		27.5%	46.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	16.0	12.0	27.0		16.0	31.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.38			0.10	0.08	0.22	0.20		0.09	0.22	
Control Delay (s/veh)		24.3			30.3	0.2	35.5	6.7		27.4	7.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.3			30.3	0.2	35.5	6.7		27.4	7.0	
Queue Length 50th (ft)		24			9	0	21	36		10	52	
Queue Length 95th (ft)		50			19	0	46	57		24	85	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		740			408	668	312	2000		753	2245	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.20			0.05	0.08	0.15	0.20		0.07	0.22	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	2	41	7	6	33	43	358	23	43	368	48
Future Volume (vph)	94	2	41	7	6	33	43	358	23	43	368	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95		0.97	0.95	
Frt		0.96			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3333			1911	1669	1787	3424		3351	3396	
Flt Permitted		0.78			0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2697			1557	1669	1787	3424		3351	3396	
Peak-hour factor, PHF	0.93	0.93	0.93	0.65	0.65	0.65	0.94	0.94	0.94	0.85	0.85	0.85
Adj. Flow (vph)	101	2	44	11	9	51	46	381	24	51	433	56
RTOR Reduction (vph)	0	38	0	0	0	36	0	4	0	0	8	0
Lane Group Flow (vph)	0	109	0	0	20	15	46	401	0	51	481	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		8.5			8.5	19.7	5.2	42.3		11.2	48.3	
Effective Green, g (s)		10.5			10.5	23.7	7.2	44.3		13.2	50.3	
Actuated g/C Ratio		0.13			0.13	0.30	0.09	0.55		0.16	0.63	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		353			204	577	160	1896		552	2135	
v/s Ratio Prot						0.00	c0.03	0.12		0.02	c0.14	
v/s Ratio Perm		c0.04			0.01	0.00						
v/c Ratio		0.31			0.10	0.03	0.29	0.21		0.09	0.23	
Uniform Delay, d1		31.5			30.6	20.0	34.0	9.0		28.3	6.4	
Progression Factor		1.00			1.00	1.00	1.06	0.68		1.00	1.00	
Incremental Delay, d2		0.5			0.2	0.0	1.0	0.2		0.1	0.2	
Delay (s)		32.0			30.8	20.0	37.0	6.4		28.4	6.7	
Level of Service		C			C	B	D	A		C	A	
Approach Delay (s/veh)		32.0			23.0			9.5			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	67	830	131	19	853
Future Vol, veh/h	0	67	830	131	19	853
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	85	85	85	85	93	93
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	79	976	154	20	917

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1553	565	0	0	1131	0
Stage 1	1054	-	-	-	-	-
Stage 2	499	-	-	-	-	-
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	106	473	-	-	625	-
Stage 1	301	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	103	473	-	-	625	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	291	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	14.13	0	0.24
HCM LOS	B		

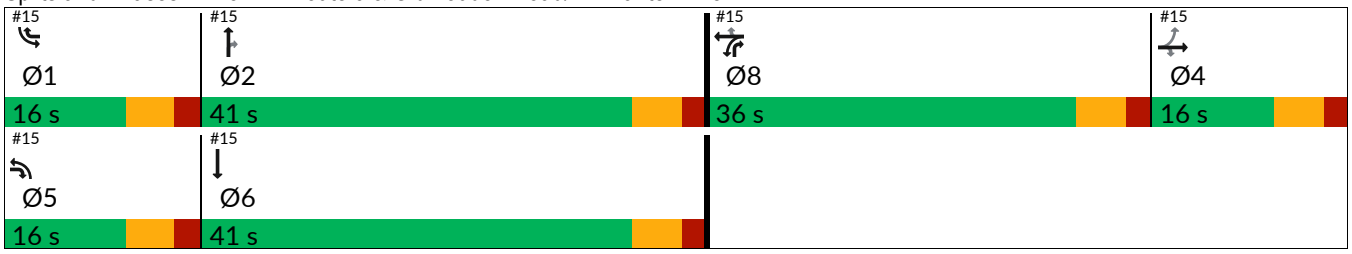
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	473	625	-
HCM Lane V/C Ratio	-	-	0.167	0.033	-
HCM Ctrl Dly (s/v)	-	-	14.1	11	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	34	72	305	72	108	89	478	330	95	495	14
Future Volume (vph)	12	34	72	305	72	108	89	478	330	95	495	14
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.987		0.950	0.970		0.950			0.950		
Satd. Flow (prot)	0	1813	1561	1641	1734	1492	1787	3455	1599	3467	3441	0
Flt Permitted		0.834		0.950	0.970		0.950			0.950		
Satd. Flow (perm)	0	1532	1561	1641	1734	1492	1787	3455	1599	3467	3441	0
Satd. Flow (RTOR)			90			124			371		3	
Adj. Flow (vph)	14	39	82	351	83	124	100	537	371	102	532	15
Lane Group Flow (vph)	0	53	82	214	220	124	100	537	371	102	547	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	16.0	16.0	16.0	36.0	36.0	16.0	16.0	41.0	36.0	16.0	41.0	
Total Split (%)	14.7%	14.7%	14.7%	33.0%	33.0%	14.7%	14.7%	37.6%	33.0%	14.7%	37.6%	
Maximum Green (s)	10.0	10.0	10.0	30.0	30.0	10.0	10.0	35.0	30.0	10.0	35.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.24	0.17	0.47	0.46	0.17	0.36	0.52	0.32	0.21	0.46	
Control Delay (s/veh)		38.6	6.3	28.8	28.3	2.5	39.1	25.8	1.6	35.8	25.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		38.6	6.3	28.8	28.3	2.5	39.1	25.8	1.6	35.8	25.3	
Queue Length 50th (ft)		24	0	95	98	0	46	117	0	24	125	
Queue Length 95th (ft)		68	29	180	183	19	114	204	29	57	211	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		276	506	789	833	794	322	1920	1368	625	1914	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.19	0.16	0.27	0.26	0.16	0.31	0.28	0.27	0.16	0.29	

Intersection Summary

Cycle Length: 109
Actuated Cycle Length: 73.5
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	34	72	305	72	108	89	478	330	95	495	14
Future Volume (vph)	12	34	72	305	72	108	89	478	330	95	495	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1813	1561	1641	1733	1492	1787	3455	1599	3467	3441	
Flt Permitted		0.83	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1531	1561	1641	1733	1492	1787	3455	1599	3467	3441	
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	14	39	82	351	83	124	100	537	371	102	532	15
RTOR Reduction (vph)	0	0	65	0	0	75	0	0	159	0	2	0
Lane Group Flow (vph)	0	53	17	214	220	49	100	537	212	102	545	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		4.6	11.7	18.1	18.1	26.3	7.1	21.8	39.9	8.2	22.9	
Effective Green, g (s)		6.6	15.7	20.1	20.1	30.3	9.1	23.8	43.9	10.2	24.9	
Actuated g/C Ratio		0.09	0.20	0.26	0.26	0.40	0.12	0.31	0.57	0.13	0.32	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		131	400	430	454	589	212	1072	998	461	1117	
v/s Ratio Prot			0.00	c0.13	0.13	0.01	c0.06	0.16	0.06	0.03	c0.16	
v/s Ratio Perm		c0.03	0.01			0.02			0.08			
v/c Ratio		0.40	0.04	0.50	0.48	0.08	0.47	0.50	0.21	0.22	0.49	
Uniform Delay, d1		33.2	24.5	24.0	23.9	14.5	31.6	21.6	8.0	29.7	20.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.0	0.0	0.9	0.8	0.1	1.7	0.4	0.1	0.2	0.3	
Delay (s)		35.2	24.5	24.9	24.7	14.6	33.2	22.0	8.1	29.9	21.1	
Level of Service		D	C	C	C	B	C	C	A	C	C	
Approach Delay (s/veh)		28.7			22.6			18.0			22.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

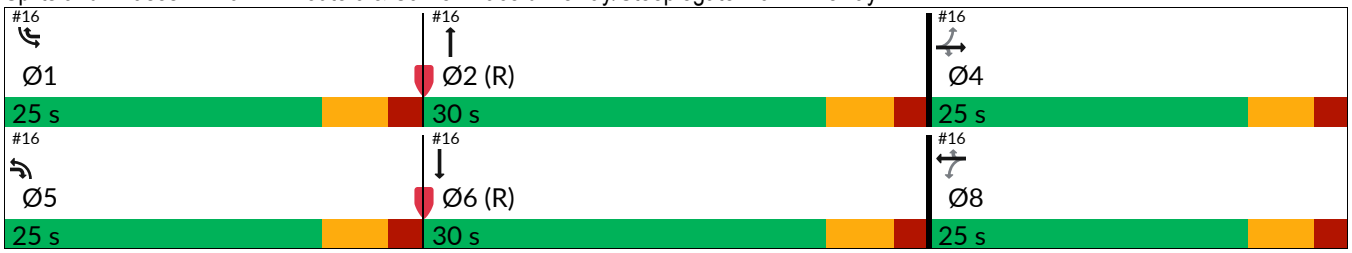
c Critical Lane Group

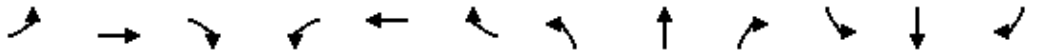
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	5	37	19	5	18	34	541	23	17	548	24
Future Volume (vph)	49	5	37	19	5	18	34	541	23	17	548	24
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.994			0.994	
Flt Protected		0.957			0.961		0.950			0.950		
Satd. Flow (prot)	0	1818	1615	0	1887	1669	1847	3434	0	1787	3434	0
Flt Permitted		0.727			0.742		0.950			0.950		
Satd. Flow (perm)	0	1381	1615	0	1457	1669	1847	3434	0	1787	3434	0
Satd. Flow (RTOR)			44			41		5			6	
Adj. Flow (vph)	58	6	44	21	5	20	36	576	24	20	660	29
Lane Group Flow (vph)	0	64	44	0	26	20	36	600	0	20	689	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	30.0		25.0	30.0	
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	37.5%		31.3%	37.5%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	19.0	24.0		19.0	24.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.34	0.09		0.13	0.04	0.17	0.25		0.11	0.30	
Control Delay (s/veh)		35.2	6.2		30.4	2.6	33.4	7.0		24.9	12.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		35.2	6.2		30.4	2.6	33.4	7.0		24.9	12.4	
Queue Length 50th (ft)		29	0		12	0	17	66		10	87	
Queue Length 95th (ft)		58	17		32	7	43	113		17	184	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		362	704		382	726	484	2417		469	2291	
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		0.18	0.06		0.07	0.03	0.07	0.25		0.04	0.30	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	5	37	19	5	18	34	541	23	17	548	24
Future Volume (vph)	49	5	37	19	5	18	34	541	23	17	548	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1818	1615		1887	1669	1847	3434		1787	3433	
Flt Permitted		0.73	1.00		0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1382	1615		1456	1669	1847	3434		1787	3433	
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.94	0.94	0.94	0.83	0.83	0.83
Adj. Flow (vph)	58	6	44	21	5	20	36	576	24	20	660	29
RTOR Reduction (vph)	0	0	34	0	0	16	0	2	0	0	2	0
Lane Group Flow (vph)	0	64	10	0	26	4	36	598	0	20	687	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		7.9	13.9		7.9	12.2	6.0	49.8		4.3	48.1	
Effective Green, g (s)		9.9	17.9		9.9	16.2	8.0	51.8		6.3	50.1	
Actuated g/C Ratio		0.12	0.22		0.12	0.20	0.10	0.65		0.08	0.63	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		171	442		180	421	184	2223		140	2149	
v/s Ratio Prot			0.00			0.00	c0.02	0.17		0.01	c0.20	
v/s Ratio Perm		c0.05	0.00		0.02	0.00						
v/c Ratio		0.37	0.02		0.14	0.01	0.20	0.27		0.14	0.32	
Uniform Delay, d1		32.2	24.2		31.3	25.5	33.0	6.0		34.3	7.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.75	1.51	
Incremental Delay, d2		1.4	0.0		0.4	0.0	0.5	0.3		0.5	0.4	
Delay (s)		33.6	24.2		31.6	25.5	33.6	6.3		26.1	10.9	
Level of Service		C	C		C	C	C	A		C	B	
Approach Delay (s/veh)		29.8			29.0			7.9			11.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	604	4	1	583
Future Vol, veh/h	6	1	604	4	1	583
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	97	97	88	88
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	10	2	623	4	1	663

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	958	313	0	0	627	0
Stage 1	625	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	259	688	-	-	958	-
Stage 1	502	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	688	-	-	958	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	704	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	18.25	0	0.02
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	284	958	-
HCM Lane V/C Ratio	-	-	0.043	0.001	-
HCM Ctrl Dly (s/v)	-	-	18.3	8.8	-
HCM Lane LOS	-	-	C	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)	53	7	79	73	5	21	73	486	46	16	432	38
Future Volume (vph)	53	7	79	73	5	21	73	486	46	16	432	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3414	0
Flt Permitted		0.638			0.688		0.950			0.950		
Satd. Flow (perm)	0	1200	1599	0	1294	1599	1805	3490	1561	1787	3414	0
Satd. Flow (RTOR)			205			205			123		12	
Adj. Flow (vph)	62	8	93	109	7	31	74	496	47	19	502	44
Lane Group Flow (vph)	0	70	93	0	116	31	74	496	47	19	546	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	23.0	31.0	31.0	23.0	31.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	28.8%	38.8%	38.8%	28.8%	38.8%	
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	25.0	25.0	17.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.21		0.50	0.07	0.31	0.22	0.04	0.07	0.26	
Control Delay (s/veh)		31.3	1.0		36.1	0.3	43.9	11.3	0.6	40.4	16.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.3	1.0		36.1	0.3	43.9	11.3	0.6	40.4	16.2	
Queue Length 50th (ft)		31	0		53	0	40	29	0	10	54	
Queue Length 95th (ft)		59	0		68	0	83	114	0	m0	195	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		330	588		355	588	428	2242	1046	438	2082	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.21	0.16		0.33	0.05	0.17	0.22	0.04	0.04	0.26	

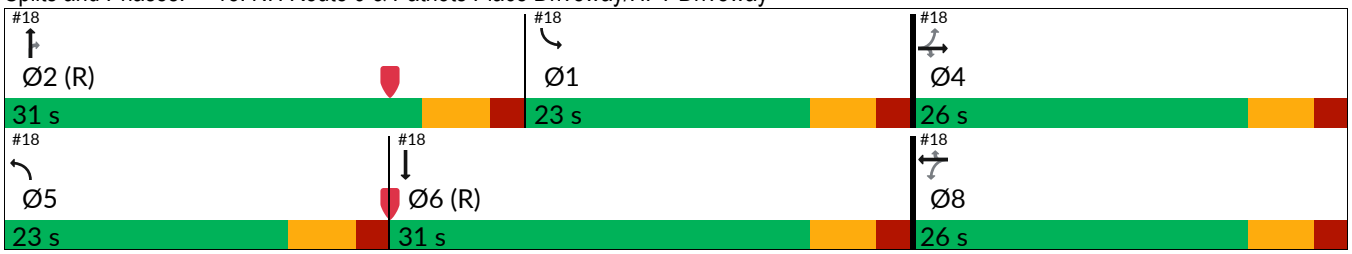
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	486	46	16	432	38
Future Volume (vph)	53	7	79	73	5	21	73	486	46	16	432	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3413	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1201	1599		1295	1599	1805	3490	1561	1787	3413	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	62	8	93	109	7	31	74	496	47	19	502	44
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	20	0	5	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	496	27	19	541	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.0	11.0		11.0	11.0	7.5	43.8	43.8	7.2	43.5	
Effective Green, g (s)		13.0	13.0		13.0	13.0	9.5	45.8	45.8	9.2	45.5	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.12	0.57	0.57	0.12	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	259		210	259	214	1998	893	205	1941	
v/s Ratio Prot							c0.04	0.14		0.01	c0.16	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.36	0.06		0.55	0.02	0.35	0.25	0.03	0.09	0.28	
Uniform Delay, d1		29.8	28.3		30.8	28.1	32.4	8.5	7.4	31.7	8.8	
Progression Factor		1.00	1.00		1.00	1.00	1.33	1.01	1.00	1.58	1.49	
Incremental Delay, d2		1.1	0.1		3.1	0.0	1.0	0.3	0.1	0.2	0.4	
Delay (s)		30.9	28.4		33.9	28.2	43.9	8.9	7.5	50.1	13.6	
Level of Service		C	C		C	C	D	A	A	D	B	
Approach Delay (s/veh)		29.5			32.7			13.0			14.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

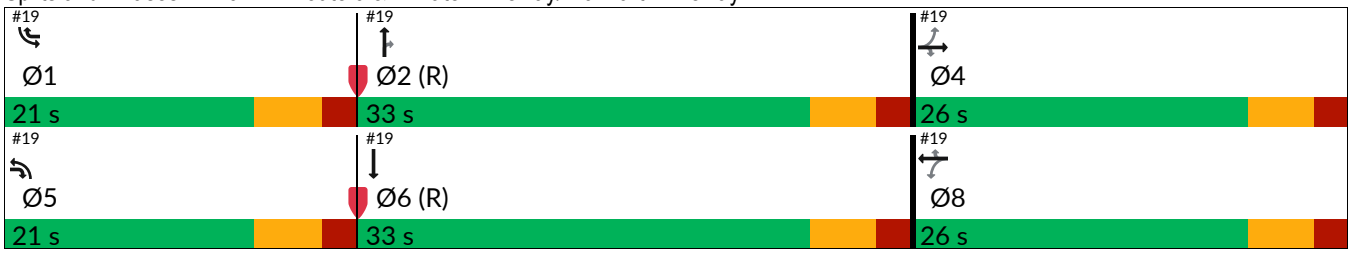
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	419	20	122	375	49
Future Volume (vph)	86	17	36	75	22	179	58	419	20	122	375	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.983	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3430	0
Flt Permitted		0.655			0.655		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1191	1546	1787	3455	1599	1685	3430	0
Satd. Flow (RTOR)			42			163			123		20	
Adj. Flow (vph)	100	20	42	89	26	213	73	524	25	145	446	58
Lane Group Flow (vph)	0	120	42	0	115	213	73	524	25	145	504	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	21.0	26.0	26.0	21.0	21.0	33.0	33.0	21.0	33.0	
Total Split (%)	32.5%	32.5%	26.3%	32.5%	32.5%	26.3%	26.3%	41.3%	41.3%	26.3%	41.3%	
Maximum Green (s)	20.0	20.0	15.0	20.0	20.0	15.0	15.0	27.0	27.0	15.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.07		0.53	0.31	0.31	0.29	0.03	0.49	0.24	
Control Delay (s/veh)		37.5	4.6		38.0	4.7	32.9	10.9	1.8	34.7	10.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		37.5	4.6		38.0	4.7	32.9	10.9	1.8	34.7	10.6	
Queue Length 50th (ft)		55	0		53	15	33	63	0	66	64	
Queue Length 95th (ft)		93	15		89	37	44	117	4	104	108	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		342	689		327	737	379	1814	898	365	2090	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.35	0.06		0.35	0.29	0.19	0.29	0.03	0.40	0.24	

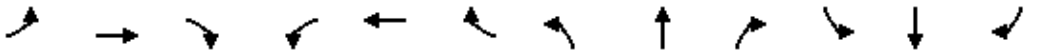
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	419	20	122	375	49
Future Volume (vph)	86	17	36	75	22	179	58	419	20	122	375	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3429	
Flt Permitted		0.65	1.00		0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1192	1546	1787	3455	1599	1685	3429	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	100	20	42	89	26	213	72	524	25	145	446	58
RTOR Reduction (vph)	0	0	30	0	0	108	0	0	12	0	9	0
Lane Group Flow (vph)	0	120	12	0	115	105	73	524	13	145	495	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.1	18.6		11.1	23.2	7.5	38.8	38.8	12.1	43.4	
Effective Green, g (s)		13.1	22.6		13.1	27.2	9.5	40.8	40.8	14.1	45.4	
Actuated g/C Ratio		0.16	0.28		0.16	0.34	0.12	0.51	0.51	0.18	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	536		195	602	212	1762	815	296	1945	
v/s Ratio Prot			0.00			0.03	0.04	c0.15		c0.09	0.14	
v/s Ratio Perm		0.10	0.00		c0.10	0.04			0.01			
v/c Ratio		0.59	0.02		0.59	0.18	0.34	0.30	0.02	0.49	0.25	
Uniform Delay, d1		31.0	20.7		31.0	18.5	32.4	11.3	9.7	29.7	8.7	
Progression Factor		1.00	1.00		1.00	1.00	0.96	0.79	1.00	1.00	1.00	
Incremental Delay, d2		4.6	0.0		4.5	0.1	1.0	0.4	0.0	1.3	0.3	
Delay (s)		35.5	20.7		35.5	18.7	32.2	9.3	9.7	31.0	9.1	
Level of Service		D	C		D	B	C	A	A	C	A	
Approach Delay (s/veh)		31.7			24.6			12.0			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

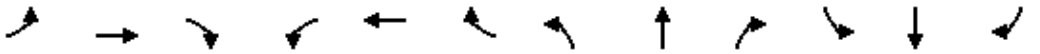
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	4	0	4	0	0	1	1	640	1	3	1	523	0
Future Vol, veh/h	4	0	4	0	0	1	1	640	1	3	1	523	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	160	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	30	30	30	25	25	25	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1	1
Mvmt Flow	13	0	13	0	0	4	1	681	1	3	1	556	0

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	907	1249	278	970	1248	341	556	0	0	682	682	0	0
Stage 1	565	565	-	684	684	-	-	-	-	-	-	-	-
Stage 2	343	684	-	287	565	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	6.42	4.12	-	-
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	2.21	-	-	2.51	2.21	-	-
Pot Cap-1 Maneuver	234	175	725	210	175	661	1017	-	-	534	914	-	-
Stage 1	482	511	-	410	452	-	-	-	-	-	-	-	-
Stage 2	652	452	-	702	511	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	230	173	725	205	173	661	1017	-	-	593	593	-	-
Mov Cap-2 Maneuver	230	173	-	205	173	-	-	-	-	-	-	-	-
Stage 1	479	508	-	409	452	-	-	-	-	-	-	-	-
Stage 2	647	451	-	684	508	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.14	10.48	0.01	0.08
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1017	-	-	350	661	593	-	-
HCM Lane V/C Ratio	0.001	-	-	0.076	0.006	0.007	-	-
HCM Ctrl Dly (s/v)	8.5	-	-	16.1	10.5	11.1	-	-
HCM Lane LOS	A	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

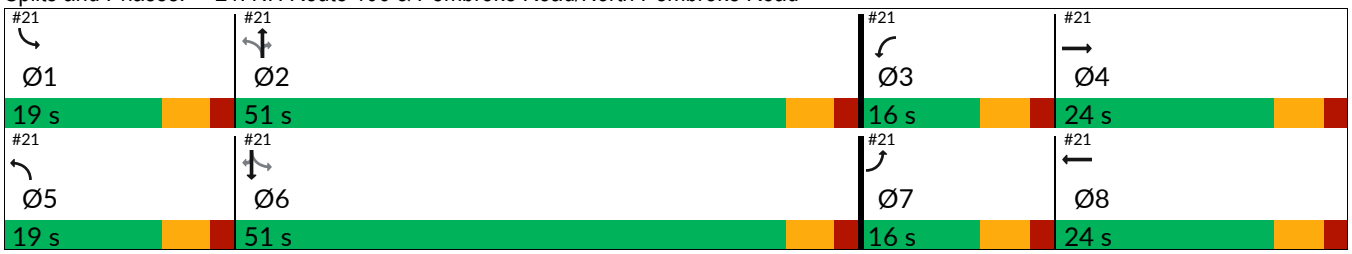


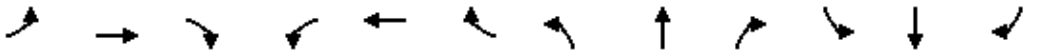
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	67	86	25	37	49	66	855	52	77	644	123
Future Volume (vph)	201	67	86	25	37	49	66	855	52	77	644	123
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.916			0.914				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1723	0	1736	1503	0	1811	1845	1568	1829	1863	1531
Flt Permitted	0.950			0.950			0.166			0.084		
Satd. Flow (perm)	1787	1723	0	1736	1503	0	316	1845	1568	162	1863	1531
Satd. Flow (RTOR)		51			53				149			149
Adj. Flow (vph)	245	82	105	35	51	68	73	950	58	83	692	132
Lane Group Flow (vph)	245	187	0	35	119	0	73	950	58	83	692	132
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	1.08	0.45		0.20	0.48		0.22	1.03	0.07	0.32	0.74	0.16
Control Delay (s/veh)	125.0	30.2		44.9	29.4		10.2	65.5	0.2	12.1	27.2	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	125.0	30.2		44.9	29.4		10.2	65.5	0.2	12.1	27.2	2.7
Queue Length 50th (ft)	~174	78		21	39		17	~662	0	19	338	0
Queue Length 95th (ft)	#322	137		44	67		41	#1044	0	45	#605	27
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	227	440		221	360		430	920	856	364	933	841
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.43		0.16	0.33		0.17	1.03	0.07	0.23	0.74	0.16

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 95.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

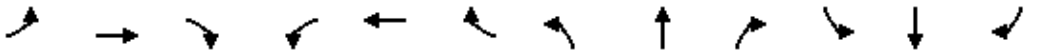




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	67	86	25	37	49	66	855	52	77	644	123
Future Volume (vph)	201	67	86	25	37	49	66	855	52	77	644	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1723		1736	1503		1811	1845	1568	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.17	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1787	1723		1736	1503		316	1845	1568	161	1863	1531
Peak-hour factor, PHF	0.82	0.82	0.82	0.72	0.72	0.72	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	245	82	105	35	51	68	73	950	58	83	692	132
RTOR Reduction (vph)	0	40	0	0	45	0	0	0	30	0	0	68
Lane Group Flow (vph)	245	147	0	35	74	0	73	950	28	83	692	64
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	18.8		4.8	13.5		51.3	45.5	45.5	51.7	45.7	45.7
Effective Green, g (s)	12.1	20.8		6.8	15.5		55.3	47.5	47.5	55.7	47.7	47.7
Actuated g/C Ratio	0.12	0.21		0.07	0.16		0.56	0.48	0.48	0.56	0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	218	361		119	235		294	884	751	225	896	736
v/s Ratio Prot	c0.14	c0.09		0.02	0.05		0.02	c0.52		c0.03	0.37	
v/s Ratio Perm							0.12		0.02	0.18		0.04
v/c Ratio	1.12	0.41		0.29	0.32		0.25	1.07	0.04	0.37	0.77	0.09
Uniform Delay, d1	43.5	33.8		43.9	37.1		14.4	25.8	13.7	20.0	21.2	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	98.2	0.7		1.4	0.8		0.4	52.4	0.0	1.0	4.2	0.1
Delay (s)	141.7	34.6		45.2	37.9		14.9	78.2	13.7	21.0	25.4	14.0
Level of Service	F	C		D	D		B	E	B	C	C	B
Approach Delay (s/veh)		95.3			39.5			70.5			23.3	
Approach LOS		F			D			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	8	95	13	40	46	58	582	1	8	510	238
Future Volume (vph)	331	8	95	13	40	46	58	582	1	8	510	238
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.862			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1568	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.694			0.676			0.166			0.427		
Satd. Flow (perm)	1306	1568	0	1284	1981	0	302	1818	1599	803	1818	1546
Satd. Flow (RTOR)		116			52				66			262
Adj. Flow (vph)	404	10	116	15	45	52	62	626	1	9	560	262
Lane Group Flow (vph)	404	126	0	15	97	0	62	626	1	9	560	262
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.94	0.21		0.04	0.14		0.16	0.66	0.00	0.03	0.78	0.34
Control Delay (s/veh)	56.0	5.8		16.0	9.6		6.9	13.1	0.0	13.3	27.0	3.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.0	5.8		16.0	9.6		6.9	13.1	0.0	13.3	27.0	3.7
Queue Length 50th (ft)	~153	3		4	12		9	134	0	2	186	0
Queue Length 95th (ft)	#286	29		16	41		22	221	0	10	#358	41
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	430	594		423	687		471	1231	1104	315	715	767
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.21		0.04	0.14		0.13	0.51	0.00	0.03	0.78	0.34

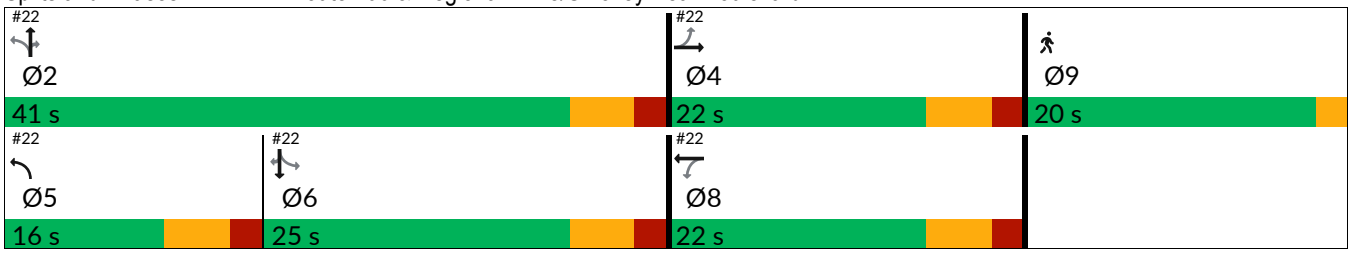
Intersection Summary
Cycle Length: 83

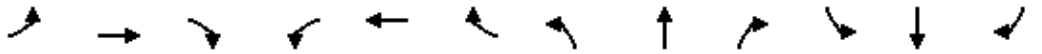
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 55.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

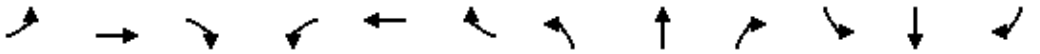




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	8	95	13	40	46	58	582	1	8	510	238
Future Volume (vph)	331	8	95	13	40	46	58	582	1	8	510	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.69	1.00		0.68	1.00		0.17	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	1306	1567		1285	1980		303	1818	1599	804	1818	1546
Peak-hour factor, PHF	0.82	0.82	0.82	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	404	10	116	15	45	52	62	626	1	9	560	262
RTOR Reduction (vph)	0	80	0	0	36	0	0	0	0	0	0	164
Lane Group Flow (vph)	404	46	0	15	61	0	62	626	1	9	560	98
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		29.8	29.8	29.8	19.8	19.8	19.8
Effective Green, g (s)	18.2	18.2		18.2	18.2		31.8	31.8	31.8	21.8	21.8	21.8
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55	0.55	0.38	0.38	0.38
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	409	491		403	621		313	996	876	302	683	581
v/s Ratio Prot		0.03			0.03		0.02	c0.34			c0.31	
v/s Ratio Perm	c0.31			0.01			0.09		0.00	0.01		0.06
v/c Ratio	0.99	0.09		0.04	0.10		0.20	0.63	0.00	0.03	0.82	0.17
Uniform Delay, d1	19.8	14.1		13.8	14.1		8.6	9.0	5.9	11.4	16.3	12.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.9	0.1		0.0	0.1		0.3	1.3	0.0	0.0	7.6	0.1
Delay (s)	60.6	14.2		13.9	14.2		8.9	10.3	5.9	11.5	24.0	12.2
Level of Service	E	B		B	B		A	B	A	B	C	B
Approach Delay (s/veh)		49.6			14.1			10.2			20.1	
Approach LOS		D			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

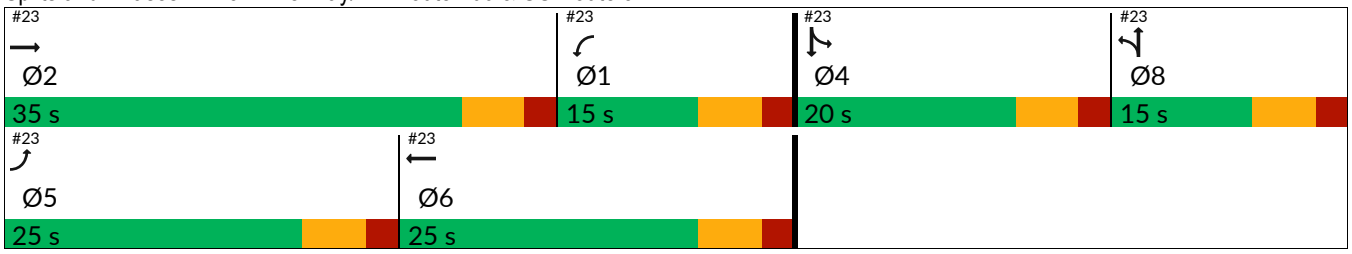
c Critical Lane Group

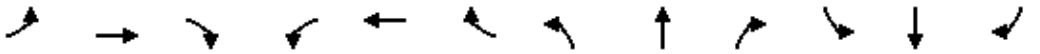


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	663	7	1	347	278	48	19	4	393	2	195
Future Volume (vph)	166	663	7	1	347	278	48	19	4	393	2	195
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Satd. Flow (RTOR)			347			347			347			347
Adj. Flow (vph)	177	705	7	1	377	302	68	27	6	432	2	214
Lane Group Flow (vph)	177	705	7	1	377	302	68	27	6	432	2	214
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		20.0	20.0	
Total Split (%)	29.4%	41.2%		17.6%	29.4%		17.6%	17.6%		23.5%	23.5%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		14.0	14.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.48	0.43	0.00	0.00	0.47	0.17	0.15	0.11	0.00	0.59	0.01	0.14
Control Delay (s/veh)	30.2	15.0	0.0	31.0	26.6	0.2	30.9	31.6	0.0	30.0	26.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	15.0	0.0	31.0	26.6	0.2	30.9	31.6	0.0	30.0	26.0	0.2
Queue Length 50th (ft)	69	101	0	0	76	0	13	11	0	87	1	0
Queue Length 95th (ft)	140	211	0	5	132	0	28	30	0	163	7	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150	200		200	250		150	250		200
Base Capacity (vph)	564	1750	1759	295	1128	1759	562	304	1725	825	447	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.40	0.00	0.00	0.33	0.17	0.12	0.09	0.00	0.52	0.00	0.14

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 67.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

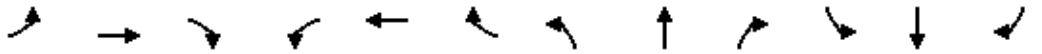




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	663	7	1	347	278	48	19	4	393	2	195
Future Volume (vph)	166	663	7	1	347	278	48	19	4	393	2	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.71	0.71	0.71	0.91	0.91	0.91
Adj. Flow (vph)	177	705	7	1	377	302	68	27	6	432	2	214
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	177	705	7	1	377	302	68	27	6	432	2	214
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.5	30.0	73.5	1.4	18.9	73.5	5.4	5.4	73.5	12.7	12.7	73.5
Effective Green, g (s)	14.5	32.0	73.5	3.4	20.9	73.5	7.4	7.4	73.5	14.7	14.7	73.5
Actuated g/C Ratio	0.20	0.44	1.00	0.05	0.28	1.00	0.10	0.10	1.00	0.20	0.20	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	340	1504	1759	79	982	1759	330	179	1725	663	360	1583
v/s Ratio Prot	c0.10	c0.20		0.00	c0.11		0.02	0.02		c0.13	0.00	
v/s Ratio Perm			0.00			c0.17			0.00			0.14
v/c Ratio	0.52	0.47	0.00	0.01	0.38	0.17	0.21	0.15	0.00	0.65	0.01	0.14
Uniform Delay, d1	26.4	14.7	0.0	33.4	21.1	0.0	30.4	30.2	0.0	27.0	23.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	0.0	0.1	0.3	0.2	0.3	0.4	0.0	2.3	0.0	0.2
Delay (s)	27.8	15.0	0.0	33.5	21.4	0.2	30.7	30.6	0.0	29.3	23.6	0.2
Level of Service	C	B	A	C	C	A	C	C	A	C	C	A
Approach Delay (s/veh)		17.4			12.0			28.8			19.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	376	983	1	2	914	37	1	1	2	81	1	780
Future Volume (vph)	376	983	1	2	914	37	1	1	2	81	1	780
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	1787	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.876			0.726	
Satd. Flow (perm)	1787	3336	0	1668	3316	0	0	1664	1830	0	1320	1546
Satd. Flow (RTOR)					3				150			636
Adj. Flow (vph)	404	1057	1	2	1075	44	2	2	4	90	1	867
Lane Group Flow (vph)	404	1058	0	2	1119	0	0	4	4	0	91	867
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.74	0.42		0.02	0.78			0.02	0.01		0.52	1.15
Control Delay (s/veh)	37.3	4.9		41.5	28.0			37.0	0.0		50.2	93.3
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	37.3	4.9		41.5	28.0			37.0	0.0		50.2	93.3
Queue Length 50th (ft)	209	80		1	288			2	0		50	~249
Queue Length 95th (ft)	313	183		8	376			7	0		#113	#505
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	670	2546		128	1427			220	372		174	756
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	0.60	0.42		0.02	0.78			0.02	0.01		0.52	1.15

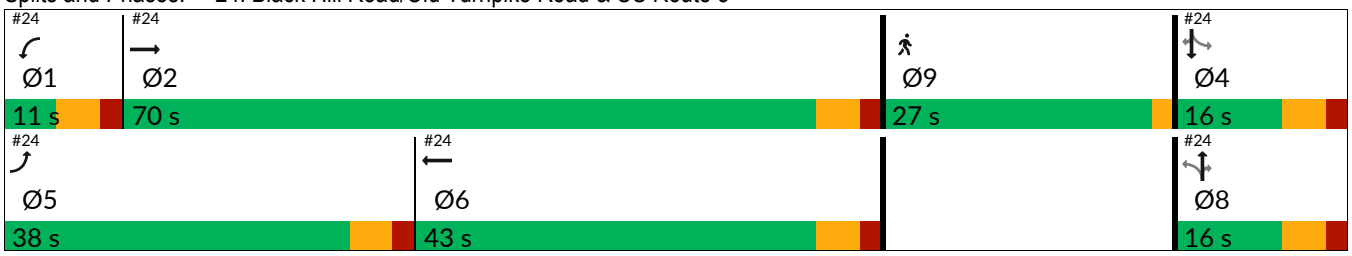
Intersection Summary
Cycle Length: 124

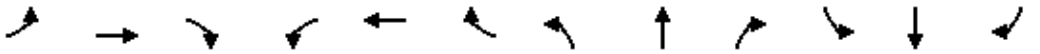
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 91
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

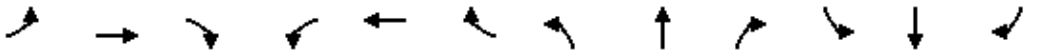




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	376	983	1	2	914	37	1	1	2	81	1	780
Future Volume (vph)	376	983	1	2	914	37	1	1	2	81	1	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	1787	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.88	1.00		0.73	1.00
Satd. Flow (perm)	1787	3336		1668	3316			1664	1830		1321	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.85	0.85	0.85	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	404	1057	1	2	1075	44	2	2	4	90	1	867
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	3	0	0	556
Lane Group Flow (vph)	404	1058	0	2	1117	0	0	4	1	0	91	311
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	25.8	66.8		0.9	41.9			10.0	10.0		10.0	10.0
Effective Green, g (s)	27.8	68.8		2.9	43.9			12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.29	0.72		0.03	0.46			0.13	0.13		0.13	0.13
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	519	2398		50	1521			208	229		165	193
v/s Ratio Prot	c0.23	0.32		0.00	c0.34							
v/s Ratio Perm								0.00	0.00		0.07	c0.20
v/c Ratio	0.78	0.44		0.04	0.73			0.02	0.00		0.55	1.61
Uniform Delay, d1	31.1	5.5		45.0	21.1			36.7	36.6		39.3	41.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.2	0.1		0.3	1.9			0.0	0.0		3.9	297.3
Delay (s)	38.4	5.7		45.4	23.0			36.7	36.6		43.3	339.1
Level of Service	D	A		D	C			D	D		D	F
Approach Delay (s/veh)		14.7			23.1			36.7			311.0	
Approach LOS		B			C			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	97.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1278	7	4	1090	46	4	0	19	52	0	29
Future Volume (vph)	10	1278	7	4	1090	46	4	0	19	52	0	29
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4959	0	1668	3434	0	1805	1615	0	1760	1524	0
Flt Permitted	0.950			0.950			0.734			0.738		
Satd. Flow (perm)	1728	4959	0	1668	3434	0	1395	1615	0	1367	1524	0
Satd. Flow (RTOR)		1			6			554			164	
Adj. Flow (vph)	11	1374	8	4	1185	50	6	0	30	62	0	35
Lane Group Flow (vph)	11	1382	0	4	1235	0	6	30	0	62	35	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			16.0	16.0		16.0	16.0	
Total Split (s)	12.0	53.0		32.0			33.0	33.0		33.0	33.0	
Total Split (%)	8.6%	37.9%		22.9%			23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	6.0	47.0		26.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.11	0.77		0.01	0.51		0.02	0.04		0.24	0.08	
Control Delay (s/veh)	65.4	43.6		61.0	2.0		44.8	0.1		49.6	0.4	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.4	43.6		61.0	2.0		44.8	0.1		49.6	0.4	
Queue Length 50th (ft)	10	417		3	27		4	0		50	0	
Queue Length 95th (ft)	32	479		m6	37		13	0		90	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	98	1788		345	2431		288	773		283	445	
Starvation Cap Reductn	0	0		0	238		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	0.11	0.77		0.01	0.56		0.02	0.04		0.22	0.08	

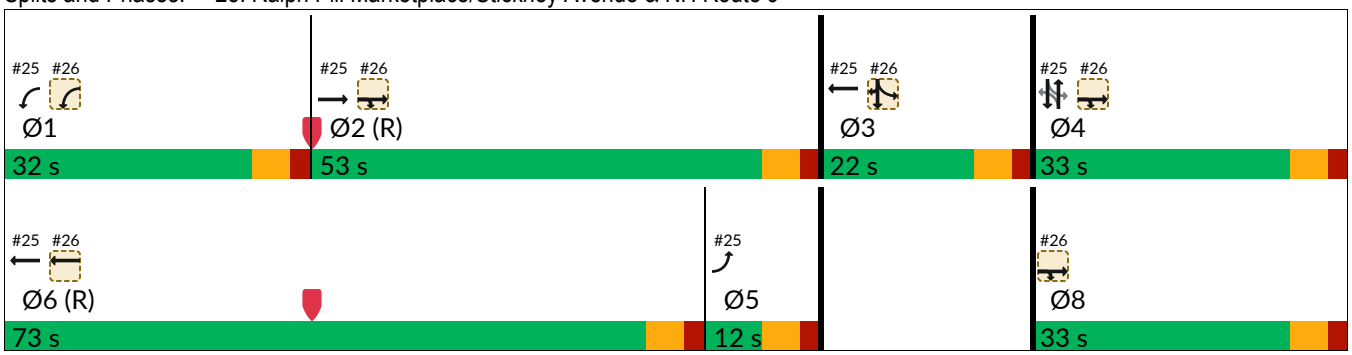
Intersection Summary
Cycle Length: 140

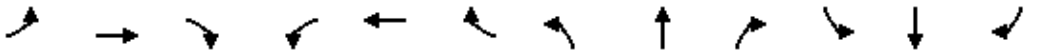
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	16.0	24.0	33.0
Total Split (s)	22.0	73.0	33.0
Total Split (%)	16%	52%	24%
Maximum Green (s)	16.0	67.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

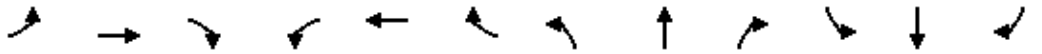




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1278	7	4	1090	46	4	0	19	52	0	29
Future Volume (vph)	10	1278	7	4	1090	46	4	0	19	52	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4960		1668	3434		1805	1615		1760	1524	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1728	4960		1668	3434		1395	1615		1366	1524	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64	0.84	0.84	0.84
Adj. Flow (vph)	11	1374	8	4	1185	50	6	0	30	62	0	35
RTOR Reduction (vph)	0	1	0	0	2	0	0	24	0	0	28	0
Lane Group Flow (vph)	11	1381	0	4	1233	0	6	6	0	62	7	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	48.4		27.0	89.0		24.6	24.6		24.6	24.6	
Effective Green, g (s)	4.4	50.4		29.0	93.0		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.03	0.36		0.21	0.66		0.19	0.19		0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	54	1785		345	2281		265	306		259	289	
v/s Ratio Prot	0.01	c0.28		0.00	c0.36			0.00			0.00	
v/s Ratio Perm							0.00			c0.05		
v/c Ratio	0.20	0.77		0.01	0.54		0.02	0.02		0.24	0.02	
Uniform Delay, d1	66.1	39.7		44.1	12.3		46.1	46.1		48.1	46.1	
Progression Factor	1.00	1.00		1.35	0.17		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	3.3		0.0	0.2		0.0	0.0		0.5	0.0	
Delay (s)	68.0	43.1		59.7	2.3		46.2	46.1		48.6	46.2	
Level of Service	E	D		E	A		D	D		D	D	
Approach Delay (s/veh)		43.3			2.5			46.1			47.7	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1138	211	602	933	0	0	0	0	139	0	207
Future Volume (vph)	0	1138	211	602	933	0	0	0	0	139	0	207
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			232									176
Adj. Flow (vph)	0	1251	232	614	952	0	0	0	0	158	0	235
Lane Group Flow (vph)	0	1251	232	614	952	0	0	0	0	0	158	235
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					16.0	16.0	16.0
Total Split (s)				32.0	73.0					22.0	22.0	22.0
Total Split (%)				22.9%	52.1%					15.7%	15.7%	15.7%
Maximum Green (s)				26.0	67.0					16.0	16.0	16.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.46	0.21	0.92	0.51						0.69	0.66
Control Delay (s/veh)		1.3	0.3	99.3	9.7						74.7	25.6
Queue Delay		0.4	1.0	49.5	0.7						79.5	0.0
Total Delay (s/veh)		1.7	1.3	148.8	10.4						154.1	25.6
Queue Length 50th (ft)		12	0	288	98						141	50
Queue Length 95th (ft)		14	m0	#402	148						#217	136
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2789	1118	670	1874						229	358
Starvation Cap Reductn		900	655	273	534						0	0
Spillback Cap Reductn		551	0	0	0						149	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.66	0.50	1.55	0.71						1.98	0.66

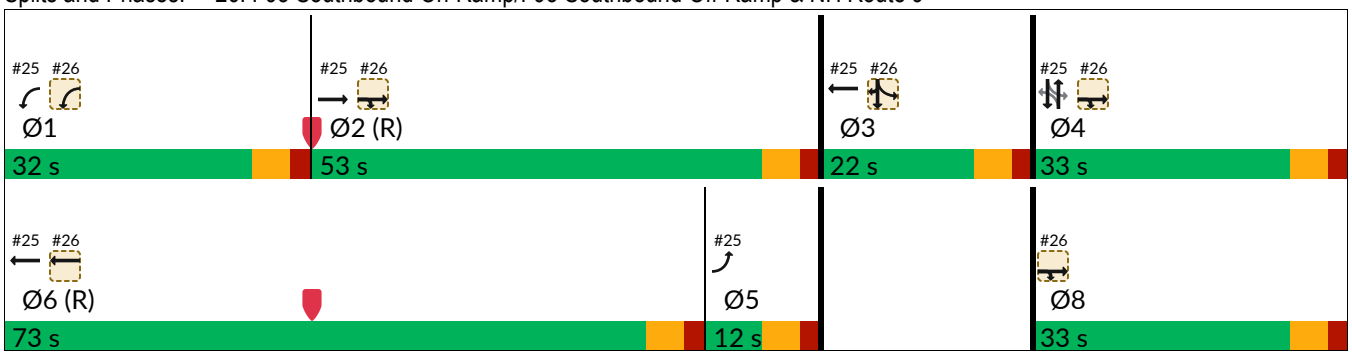
Intersection Summary
Cycle Length: 140

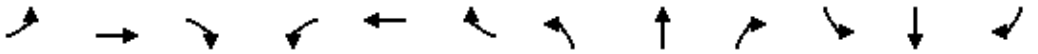
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	16.0	12.0	33.0
Total Split (s)	53.0	33.0	12.0	33.0
Total Split (%)	38%	24%	9%	24%
Maximum Green (s)	47.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
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.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

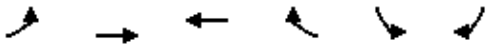




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1138	211	602	933	0	0	0	0	139	0	207
Future Volume (vph)	0	1138	211	602	933	0	0	0	0	139	0	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3236	3336						1787	1599
Peak-hour factor, PHF	0.91	0.91	0.91	0.98	0.98	0.98	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	0	1251	232	614	952	0	0	0	0	158	0	235
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	0	0	0	153
Lane Group Flow (vph)	0	1251	128	614	952	0	0	0	0	0	158	82
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		73.0	73.0	27.0	73.0						16.0	16.0
Effective Green, g (s)		77.0	77.0	29.0	75.0						18.0	18.0
Actuated g/C Ratio		0.55	0.55	0.21	0.54						0.13	0.13
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2703	986	670	1787						229	205
v/s Ratio Prot		c0.25	0.07	c0.19	c0.29						c0.09	0.05
v/s Ratio Perm												
v/c Ratio		0.46	0.13	0.92	0.53						0.69	0.40
Uniform Delay, d1		19.0	15.3	54.3	21.1						58.3	56.0
Progression Factor		0.09	0.01	1.52	0.43						1.00	1.00
Incremental Delay, d2		0.1	0.0	16.1	1.0						8.4	1.3
Delay (s)		1.8	0.2	98.9	10.2						66.7	57.3
Level of Service		A	A	F	B						E	E
Approach Delay (s/veh)		1.5			45.0			0.0			61.1	
Approach LOS		A			D			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

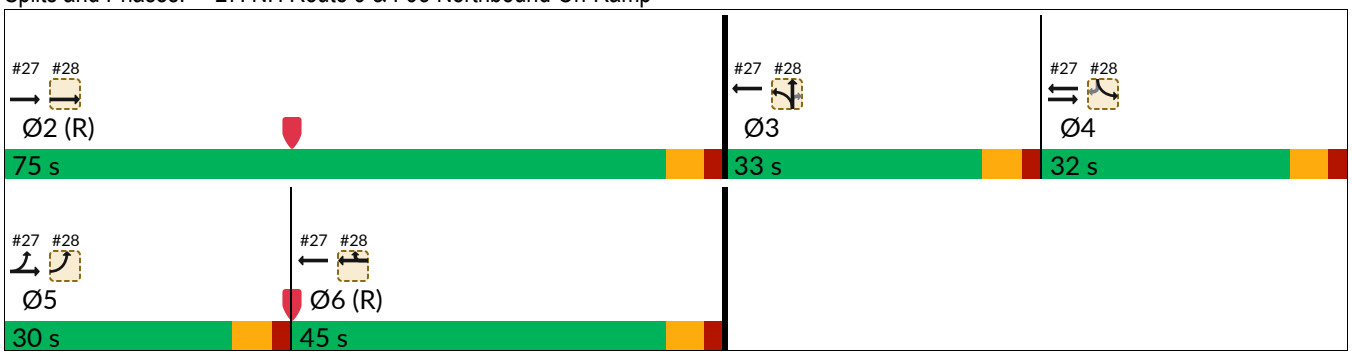


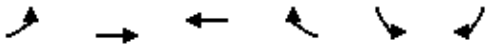
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	230	1047	1535	270	0	0				
Future Volume (vph)	230	1047	1535	270	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				136						
Adj. Flow (vph)	258	1176	1599	281	0	0				
Lane Group Flow (vph)	258	1176	1599	281	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	30.0						75.0	33.0	32.0	45.0
Total Split (%)	21.4%						54%	24%	23%	32%
Maximum Green (s)	24.0						69.0	27.0	26.0	39.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lead							Lead	Lag	Lag
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.83	0.48	0.44	0.17						
Control Delay (s/veh)	90.4	19.8	1.4	0.0						
Queue Delay	61.1	1.1	3.4	0.0						
Total Delay (s/veh)	151.5	20.9	4.9	0.0						
Queue Length 50th (ft)	252	374	31	0						
Queue Length 95th (ft)	#379	447	m34	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	309	2454	3628	1652						
Starvation Cap Reductn	148	953	1902	0						
Spillback Cap Reductn	0	301	1222	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	1.60	0.78	0.93	0.17						

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

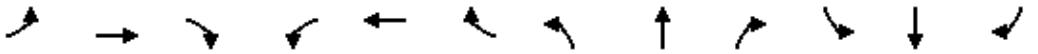




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	230	1047	1535	270	0	0
Future Volume (vph)	230	1047	1535	270	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.89	0.89	0.96	0.96	0.90	0.90
Adj. Flow (vph)	258	1176	1599	281	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	258	1176	1599	281	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	24.0	101.0	104.0	140.0		
Effective Green, g (s)	26.0	103.0	106.0	140.0		
Actuated g/C Ratio	0.19	0.74	0.76	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	309	2454	3628	1652		
v/s Ratio Prot	c0.15	c0.35	c0.33			
v/s Ratio Perm				0.17		
v/c Ratio	0.83	0.48	0.44	0.17		
Uniform Delay, d1	54.9	7.6	6.2	0.0		
Progression Factor	1.27	2.51	0.22	1.00		
Incremental Delay, d2	15.9	0.1	0.0	0.0		
Delay (s)	85.8	19.1	1.4	0.0		
Level of Service	F	B	A	A		
Approach Delay (s/veh)		31.1	1.2		0.0	
Approach LOS		C	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

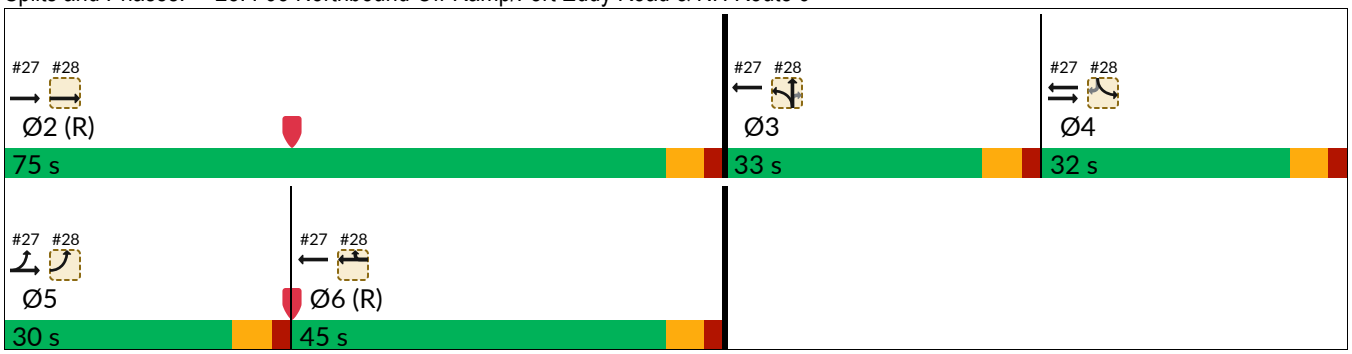


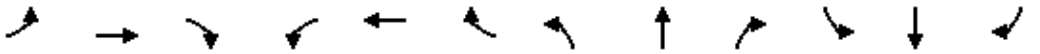
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	707	0	0	1072	356	158	283	393	215	0	575
Future Volume (vph)	340	707	0	0	1072	356	158	283	393	215	0	575
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.941	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1770	3190	1489	3467	0	1652
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1770	3190	1489	3467	0	1652
Satd. Flow (RTOR)						322		79	167			401
Adj. Flow (vph)	382	794	0	0	1218	405	176	314	437	234	0	625
Lane Group Flow (vph)	382	794	0	0	1218	405	176	515	236	234	0	625
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	30.0	75.0			45.0	45.0	33.0	33.0	33.0	32.0		32.0
Total Split (%)	21.4%	53.6%			32.1%	32.1%	23.6%	23.6%	23.6%	22.9%		22.9%
Maximum Green (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead				Lag	Lag	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.64	0.45			1.20	0.57	0.48	0.71	0.54	0.34		0.96
Control Delay (s/veh)	47.6	23.1			146.6	21.6	54.0	49.6	20.1	49.7		46.5
Queue Delay	10.1	0.6			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	57.7	23.6			146.6	21.6	54.0	49.6	20.1	49.7		46.5
Queue Length 50th (ft)	192	304			~696	50	145	209	59	95		241
Queue Length 95th (ft)	244	372			#818	243	224	279	158	137		#499
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	600	1752			1011	711	366	723	440	693		651
Starvation Cap Reductn	186	526			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.92	0.65			1.20	0.57	0.48	0.71	0.54	0.34		0.96

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ 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: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	707	0	0	1072	356	158	283	393	215	0	575
Future Volume (vph)	340	707	0	0	1072	356	158	283	393	215	0	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.94	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1770	3192	1489	3467		1652
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1770	3192	1489	3467		1652
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	382	794	0	0	1218	405	176	314	437	234	0	625
RTOR Reduction (vph)	0	0	0	0	0	228	0	63	132	0	0	321
Lane Group Flow (vph)	382	794	0	0	1218	177	176	452	104	234	0	304
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
Effective Green, g (s)	26.0	71.0			41.0	41.0	29.0	29.0	29.0	28.0		28.0
Actuated g/C Ratio	0.19	0.51			0.29	0.29	0.21	0.21	0.21	0.20		0.20
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	600	1752			1011	483	366	661	308	693		330
v/s Ratio Prot	c0.12	0.23			c0.35	0.11	0.10	c0.14		0.07		
v/s Ratio Perm									0.07			c0.18
v/c Ratio	0.64	0.45			1.20	0.37	0.48	0.68	0.34	0.34		0.92
Uniform Delay, d1	52.6	22.1			49.5	39.2	48.9	51.3	47.3	48.0		54.9
Progression Factor	0.81	1.00			1.13	2.09	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.0	0.8			99.8	1.7	1.0	2.9	0.7	0.3		30.2
Delay (s)	44.7	22.9			155.6	83.7	49.9	54.2	47.9	48.3		85.1
Level of Service	D	C			F	F	D	D	D	D		F
Approach Delay (s/veh)		30.0			137.7			51.8			75.1	
Approach LOS		C			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	81.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1027	256	22	1155	0	238	0	55	0	1
Future Volume (vph)	2	30	1027	256	22	1155	0	238	0	55	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	3455	0	0	1805	1669	0	1763
Flt Permitted		0.950			0.950				0.719			
Satd. Flow (perm)	0	1728	3455	1492	1728	3455	0	0	1366	1669	0	1763
Satd. Flow (RTOR)				128						75		57
Adj. Flow (vph)	2	32	1081	269	23	1229	0	326	0	75	0	2
Lane Group Flow (vph)	0	34	1081	269	23	1229	0	0	326	75	0	59
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Detector Phase	5	5	2	2	1	6		8	8	8	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0
Total Split (s)	20.0	20.0	75.0	75.0	20.0	75.0		45.0	45.0	45.0	45.0	45.0
Total Split (%)	14.3%	14.3%	53.6%	53.6%	14.3%	53.6%		32.1%	32.1%	32.1%	32.1%	32.1%
Maximum Green (s)	14.0	14.0	69.0	69.0	14.0	69.0		39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0	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	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	C-Min		None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0		0		0	0	0	0	0
v/c Ratio		0.27	0.52	0.28	0.20	0.60			0.85	0.14		0.11
Control Delay (s/veh)		63.0	20.2	9.2	62.9	17.9			68.3	7.8		9.3
Queue Delay		0.0	0.1	0.0	0.0	0.1			0.0	0.1		0.0
Total Delay (s/veh)		63.0	20.3	9.2	62.9	18.0			68.3	8.0		9.3
Queue Length 50th (ft)		33	422	21	21	324			276	0		1
Queue Length 95th (ft)		m54	423	177	m47	375			298	21		9
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150							
Base Capacity (vph)		197	2076	947	197	2062			412	556		572
Starvation Cap Reductn		0	0	0	0	123			0	0		0
Spillback Cap Reductn		0	188	0	0	0			0	146		0
Storage Cap Reductn		0	0	0	0	0			0	0		0
Reduced v/c Ratio		0.17	0.57	0.28	0.12	0.63			0.79	0.18		0.10

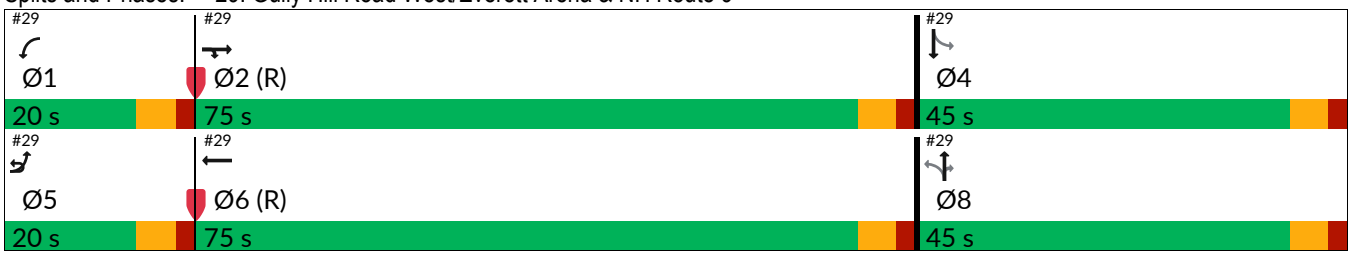
Intersection Summary
Cycle Length: 140

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	57
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Don't Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 127 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



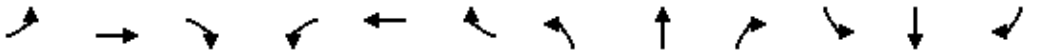
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1027	256	22	1155	0	238	0	55	0	1
Future Volume (vph)	2	30	1027	256	22	1155	0	238	0	55	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	3455			1805	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00			0.72	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	3455			1365	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1081	269	23	1229	0	326	0	75	0	2
RTOR Reduction (vph)	0	0	0	53	0	0	0	0	0	54	0	41
Lane Group Flow (vph)	0	34	1081	216	23	1229	0	0	326	21	0	18
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Actuated Green, G (s)		5.7	79.7	79.7	5.1	79.1			37.2	37.2		37.2
Effective Green, g (s)		7.7	81.7	81.7	7.1	81.1			39.2	39.2		39.2
Actuated g/C Ratio		0.06	0.58	0.58	0.05	0.58			0.28	0.28		0.28
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)		95	2016	870	87	2001			382	467		493
v/s Ratio Prot		c0.02	0.31	0.14	0.01	c0.36						0.01
v/s Ratio Perm									c0.24	0.01		
v/c Ratio		0.36	0.54	0.25	0.26	0.61			0.85	0.04		0.04
Uniform Delay, d1		63.8	17.7	14.2	63.9	19.2			47.7	36.8		36.7
Progression Factor		0.96	1.06	1.01	0.97	0.83			1.00	1.00		1.00
Incremental Delay, d2		2.1	0.9	0.6	1.5	1.3			16.6	0.0		0.0
Delay (s)		63.4	19.6	15.0	63.6	17.2			64.3	36.8		36.7
Level of Service		E	B	B	E	B			E	D		D
Approach Delay (s/veh)			19.7			18.1			59.2			36.7
Approach LOS			B			B			E			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1004	78	159	1069	16	106	1	141	10	0	2
Future Volume (vph)	0	1004	78	159	1069	16	106	1	141	10	0	2
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.998			0.851			0.850	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1818	3417	0	1728	3448	0	1770	1585	0	1847	1652	0
Flt Permitted				0.950			0.950			0.950		
Satd. Flow (perm)	1818	3417	0	1728	3448	0	1770	1585	0	1847	1652	0
Satd. Flow (RTOR)		7			1			160			424	
Adj. Flow (vph)	0	1068	83	175	1175	18	120	1	160	24	0	5
Lane Group Flow (vph)	0	1151	0	175	1193	0	120	161	0	24	5	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	58.0		17.0	63.0		21.0	20.0		16.0	15.0	
Total Split (%)	8.6%	41.4%		12.1%	45.0%		15.0%	14.3%		11.4%	10.7%	
Maximum Green (s)	6.0	52.0		11.0	57.0		15.0	14.0		10.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.58		0.55	0.44		0.50	0.56		0.19	0.01	
Control Delay (s/veh)		33.7		58.6	6.1		62.7	16.1		64.7	0.0	
Queue Delay		2.9		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		36.6		58.6	6.1		62.7	16.1		64.7	0.0	
Queue Length 50th (ft)		581		148	156		103	1		21	0	
Queue Length 95th (ft)		657		225	290		164	64		23	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)				200			90					
Base Capacity (vph)		1972		321	2728		258	327		158	520	
Starvation Cap Reductn		685		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.89		0.55	0.44		0.47	0.49		0.15	0.01	

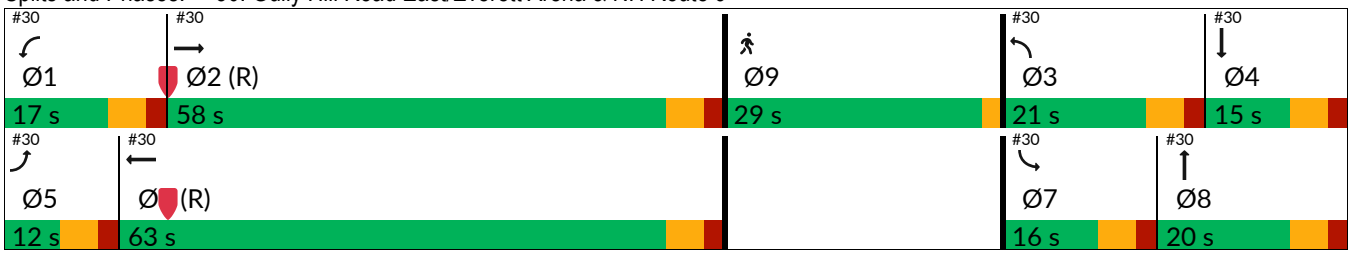
Intersection Summary
Cycle Length: 140

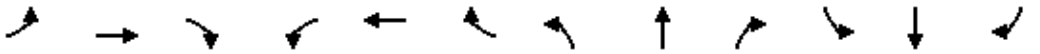
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	21%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 57 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

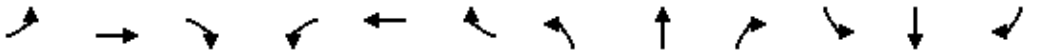




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1004	78	159	1069	16	106	1	141	10	0	2
Future Volume (vph)	0	1004	78	159	1069	16	106	1	141	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3418		1728	3447		1770	1585		1847	1652	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3418		1728	3447		1770	1585		1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1068	83	175	1175	18	120	1	160	24	0	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	143	0	0	5	0
Lane Group Flow (vph)	0	1148	0	175	1193	0	120	18	0	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		73.9		24.1	104.0		16.8	13.0		5.0	1.2	
Effective Green, g (s)		75.9		26.1	106.0		18.8	15.0		7.0	3.2	
Actuated g/C Ratio		0.54		0.19	0.76		0.13	0.11		0.05	0.02	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1853		322	2609		237	169		92	37	
v/s Ratio Prot		c0.34		c0.10	0.35		c0.07	c0.01		0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.62		0.54	0.46		0.51	0.11		0.26	0.00	
Uniform Delay, d1		22.1		51.6	6.3		56.3	56.5		64.0	66.8	
Progression Factor		1.58		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4		1.9	0.6		1.7	0.3		1.5	0.0	
Delay (s)		36.3		53.4	6.9		58.0	56.7		65.5	66.9	
Level of Service		D		D	A		E	E		E	E	
Approach Delay (s/veh)		36.3			12.8			57.3			65.8	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

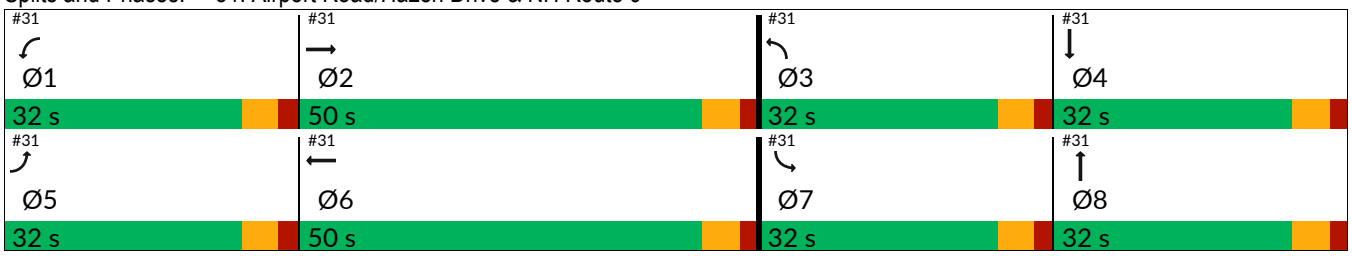


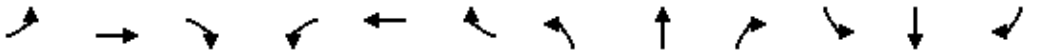
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	901	210	197	727	57	229	100	222	61	189	288
Future Volume (vph)	60	901	210	197	727	57	229	100	222	61	189	288
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			207			157			267			406
Adj. Flow (vph)	67	1012	236	207	765	60	276	120	267	86	266	406
Lane Group Flow (vph)	67	1012	236	207	765	60	276	120	267	86	266	406
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.40	0.88	0.15	0.69	0.52	0.04	0.83	0.24	0.17	0.47	0.78	0.26
Control Delay (s/veh)	67.4	53.9	0.2	66.9	31.8	0.0	74.2	41.6	0.2	67.5	70.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	67.4	53.9	0.2	66.9	31.8	0.0	74.2	41.6	0.2	67.5	70.1	0.4
Queue Length 50th (ft)	60	471	0	184	284	0	247	84	0	77	235	0
Queue Length 95th (ft)	110	#615	0	275	367	0	#351	139	0	104	263	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	379	1204	1599	379	1478	1652	366	499	1599	366	385	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.84	0.15	0.55	0.52	0.04	0.75	0.24	0.17	0.23	0.69	0.26

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 134
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	901	210	197	727	57	229	100	222	61	189	288
Future Volume (vph)	60	901	210	197	727	57	229	100	222	61	189	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.89	0.89	0.89	0.95	0.95	0.95	0.83	0.83	0.83	0.71	0.71	0.71
Adj. Flow (vph)	67	1012	236	207	765	60	276	120	267	86	266	406
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	67	1012	236	207	765	60	276	120	267	86	266	406
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.9	43.9	135.2	20.3	55.3	135.2	23.9	34.8	135.2	12.2	23.1	135.2
Effective Green, g (s)	10.9	45.9	135.2	22.3	57.3	135.2	25.9	36.8	135.2	14.2	25.1	135.2
Actuated g/C Ratio	0.08	0.34	1.00	0.16	0.42	1.00	0.19	0.27	1.00	0.11	0.19	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	144	1172	1599	294	1464	1652	331	494	1599	181	337	1546
v/s Ratio Prot	0.04	c0.29		c0.12	0.22		c0.16	0.07		0.05	c0.15	
v/s Ratio Perm			0.15			0.04			0.17			0.26
v/c Ratio	0.47	0.86	0.15	0.70	0.52	0.04	0.83	0.24	0.17	0.48	0.79	0.26
Uniform Delay, d1	59.4	41.7	0.0	53.3	28.8	0.0	52.6	38.3	0.0	57.0	52.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	6.8	0.2	7.4	0.3	0.0	16.3	0.3	0.2	2.0	11.6	0.4
Delay (s)	61.7	48.5	0.2	60.8	29.2	0.0	68.9	38.6	0.2	59.0	64.1	0.4
Level of Service	E	D	A	E	C	A	E	D	A	E	E	A
Approach Delay (s/veh)		40.5			33.8			35.8			29.4	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	135.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	91	840	34	22	703	266	111	230	49	309	123
Future Volume (vph)	7	91	840	34	22	703	266	111	230	49	309	123
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.994			0.959			0.974			0.947
Flt Protected		0.950			0.950			0.950			0.950	0.991
Satd. Flow (prot)	0	1787	3316	0	1668	3313	0	1668	1710	0	1585	1677
Flt Permitted		0.950			0.950			0.950			0.950	0.991
Satd. Flow (perm)	0	1787	3316	0	1668	3313	0	1668	1710	0	1585	1677
Satd. Flow (RTOR)			3			36			6			16
Adj. Flow (vph)	8	107	988	40	23	748	283	123	256	54	322	128
Lane Group Flow (vph)	0	115	1028	0	23	1031	0	123	310	0	274	271
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.50	0.72		0.17	0.97		0.36	0.88		0.85	0.77
Control Delay (s/veh)		51.5	30.4		49.1	56.4		41.2	67.5		66.2	54.0
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		51.5	30.4		49.1	56.4		41.2	67.5		66.2	54.0
Queue Length 50th (ft)		76	273		15	362		75	208		195	178
Queue Length 95th (ft)		126	408		42	#527		135	#382		#361	#322
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		281	1424		262	1068		340	353		323	354
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		0.41	0.72		0.09	0.97		0.36	0.88		0.85	0.77

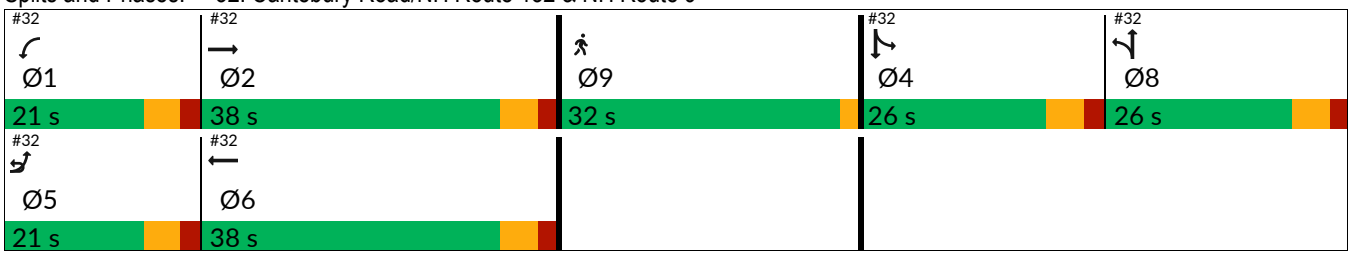
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	91	
Future Volume (vph)	91	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	95	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 108
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	91	840	34	22	703	266	111	230	49	309	123
Future Volume (vph)	7	91	840	34	22	703	266	111	230	49	309	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	0.99		1.00	0.96		1.00	0.97		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (prot)		1787	3317		1668	3313		1668	1710		1585	1678
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (perm)		1787	3317		1668	3313		1668	1710		1585	1678
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	8	107	988	40	23	748	283	123	256	54	322	128
RTOR Reduction (vph)	0	0	2	0	0	24	0	0	5	0	0	13
Lane Group Flow (vph)	0	115	1026	0	23	1007	0	123	305	0	274	258
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		11.9	44.3		3.3	35.7		20.0	20.0		20.0	20.0
Effective Green, g (s)		13.9	46.3		5.3	37.7		22.0	22.0		22.0	22.0
Actuated g/C Ratio		0.12	0.41		0.05	0.34		0.20	0.20		0.20	0.20
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		222	1376		79	1119		328	337		312	330
v/s Ratio Prot		c0.06	c0.31		0.01	c0.30		0.07	c0.18		c0.17	0.15
v/s Ratio Perm												
v/c Ratio		0.52	0.75		0.29	0.90		0.38	0.91		0.88	0.78
Uniform Delay, d1		45.7	27.7		51.3	35.2		38.8	43.8		43.5	42.5
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.0	2.2		2.0	10.0		0.7	26.5		23.2	11.4
Delay (s)		47.8	29.9		53.4	45.1		39.6	70.3		66.7	54.0
Level of Service		D	C		D	D		D	E		E	D
Approach Delay (s/veh)			31.7			45.3			61.6			60.3
Approach LOS			C			D			E			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	91
Future Volume (vph)	91
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	95
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	476	56	7	522	427	138			
Future Volume (vph)	476	56	7	522	427	138			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1787	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.994					
Satd. Flow (perm)	1787	1599	0	1808	1881	1546			
Satd. Flow (RTOR)		63				152			
Adj. Flow (vph)	567	67	9	653	469	152			
Lane Group Flow (vph)	567	67	0	662	469	152			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					45.0	25.0	45.0
Total Split (%)	33.3%	33.3%					43%	24%	43%
Maximum Green (s)	29.0	29.0					39.0	19.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	1.04	0.13		0.59	0.40	0.15			
Control Delay (s/veh)	85.4	8.4		14.6	13.6	4.6			
Queue Delay	0.0	0.0		0.0	1.0	0.0			
Total Delay (s/veh)	85.4	8.4		14.6	14.6	4.6			
Queue Length 50th (ft)	~429	2		242	147	3			
Queue Length 95th (ft)	#573	30		282	247	m28			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	547	533		1116	1162	1013			
Starvation Cap Reductn	0	0		0	427	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	1.04	0.13		0.59	0.64	0.15			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65

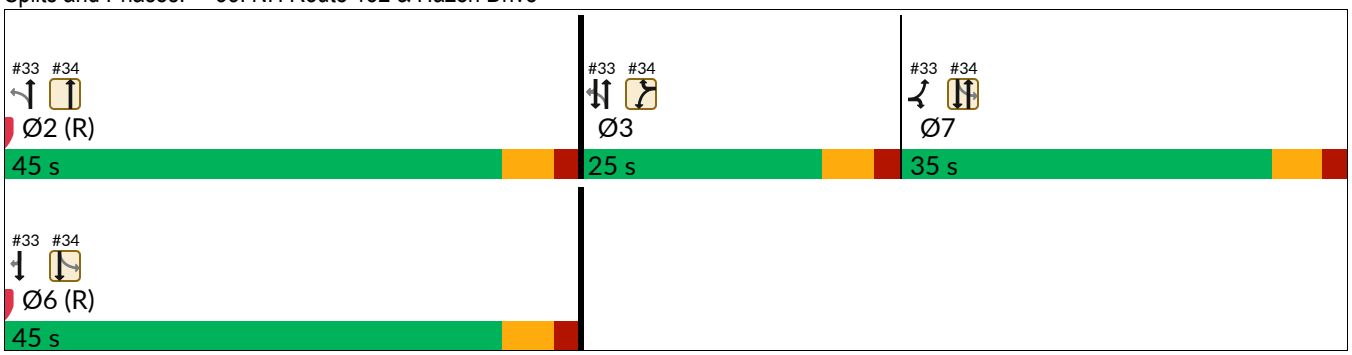
Control Type: Actuated-Coordinated

~ 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.

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

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	476	56	7	522	427	138
Future Volume (vph)	476	56	7	522	427	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1787	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1787	1599		1807	1881	1546
Peak-hour factor, PHF	0.84	0.84	0.80	0.80	0.91	0.91
Adj. Flow (vph)	567	67	9	652	469	152
RTOR Reduction (vph)	0	44	0	0	0	58
Lane Group Flow (vph)	567	23	0	662	469	94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	30.2	30.2		62.8	62.8	62.8
Effective Green, g (s)	32.2	32.2		64.8	64.8	64.8
Actuated g/C Ratio	0.31	0.31		0.62	0.62	0.62
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	548	490		1115	1160	954
v/s Ratio Prot	c0.32	0.01			0.25	
v/s Ratio Perm				c0.37		0.06
v/c Ratio	1.03	0.05		0.59	0.40	0.10
Uniform Delay, d1	36.4	25.6		12.1	10.3	8.2
Progression Factor	1.00	1.00		1.00	1.23	3.28
Incremental Delay, d2	47.7	0.0		0.9	0.2	0.0
Delay (s)	84.1	25.7		13.0	12.9	26.9
Level of Service	F	C		B	B	C
Approach Delay (s/veh)	77.9			13.0	16.3	
Approach LOS	E			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	238	149	795	212	43	342			
Future Volume (vph)	238	149	795	212	43	342			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.968						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3345	0	1728	1818			
Flt Permitted	0.950				0.188				
Satd. Flow (perm)	1787	1599	3345	0	342	1818			
Satd. Flow (RTOR)		167	83						
Adj. Flow (vph)	267	167	981	262	46	368			
Lane Group Flow (vph)	267	167	1243	0	46	368			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	25.0	25.0					45.0	45.0	35.0
Total Split (%)	23.8%	23.8%					43%	43%	33%
Maximum Green (s)	19.0	19.0					39.0	39.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.75	0.37	0.51		0.19	0.28			
Control Delay (s/veh)	54.0	8.2	2.9		6.7	5.7			
Queue Delay	0.0	0.0	0.7		0.0	0.0			
Total Delay (s/veh)	54.0	8.2	3.6		6.7	5.7			
Queue Length 50th (ft)	172	0	61		9	74			
Queue Length 95th (ft)	#281	53	m70		23	111			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	357	453	2481		251	1336			
Starvation Cap Reductn	0	0	812		0	0			
Spillback Cap Reductn	0	0	0		0	0			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.75	0.37	0.74		0.18	0.28			

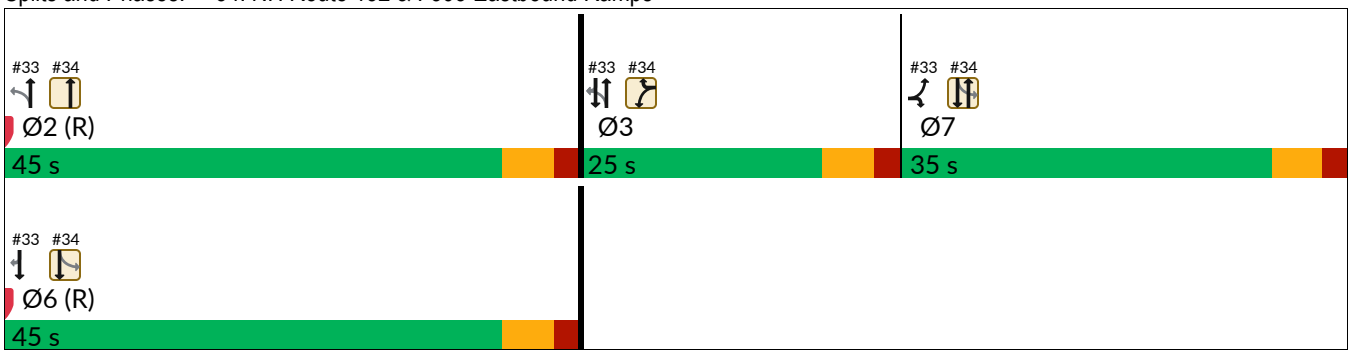
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated

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.

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

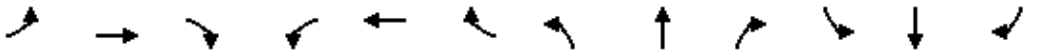


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	238	149	795	212	43	342
Future Volume (vph)	238	149	795	212	43	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3346		1728	1818
Flt Permitted	0.95	1.00	1.00		0.19	1.00
Satd. Flow (perm)	1787	1599	3346		341	1818
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.93	0.93
Adj. Flow (vph)	267	167	981	262	46	368
RTOR Reduction (vph)	0	134	23	0	0	0
Lane Group Flow (vph)	267	33	1220	0	46	368
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	19.0	19.0	74.0		74.0	74.0
Effective Green, g (s)	21.0	21.0	76.0		76.0	76.0
Actuated g/C Ratio	0.20	0.20	0.72		0.72	0.72
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	357	319	2421		246	1315
v/s Ratio Prot	c0.15	0.02	c0.36			0.20
v/s Ratio Perm					0.13	
v/c Ratio	0.75	0.10	0.50		0.19	0.28
Uniform Delay, d1	39.5	34.3	6.3		4.6	5.0
Progression Factor	1.00	1.00	0.42		1.00	1.00
Incremental Delay, d2	8.3	0.1	0.1		0.4	0.1
Delay (s)	47.8	34.5	2.7		5.0	5.1
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	42.7		2.7			5.1
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

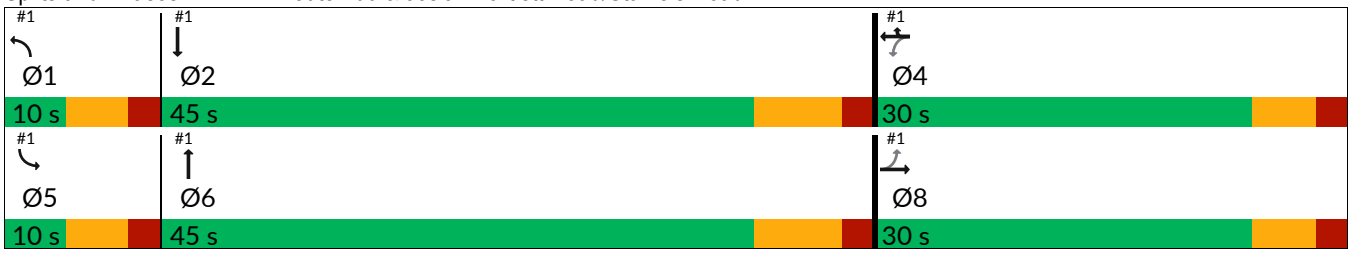
2024 Existing Saturday Midday Peak-Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	56	0	33	5	647	60	28	730	6
Future Volume (vph)	0	5	1	56	0	33	5	647	60	28	730	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.981				0.850		0.987			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1864	0	0	1805	1615	1787	3528	0	1787	3571	0
Flt Permitted					0.748		0.950			0.950		
Satd. Flow (perm)	0	1864	0	0	1421	1615	1787	3528	0	1787	3571	0
Satd. Flow (RTOR)		2				135		15			1	
Adj. Flow (vph)	0	12	2	74	0	43	5	711	66	33	869	7
Lane Group Flow (vph)	0	14	0	0	74	43	5	777	0	33	876	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.24	0.09	0.03	0.36		0.21	0.38	
Control Delay (s/veh)		16.8			20.1	0.4	26.0	8.5		28.3	7.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.8			20.1	0.4	26.0	8.5		28.3	7.4	
Queue Length 50th (ft)		2			13	0	1	48		7	58	
Queue Length 95th (ft)		7			47	0	11	142		35	151	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		1073			817	986	158	2902		158	2935	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.09	0.04	0.03	0.27		0.21	0.30	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 48.1
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



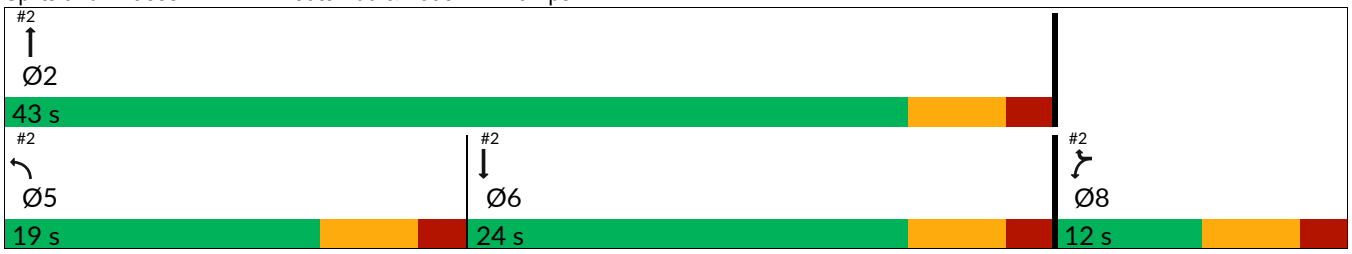
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	56	0	33	5	647	60	28	730	6
Future Volume (vph)	0	5	1	56	0	33	5	647	60	28	730	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1863			1805	1615	1787	3529		1787	3570	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1863			1422	1615	1787	3529		1787	3570	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	0	12	2	74	0	43	5	711	66	33	869	7
RTOR Reduction (vph)	0	2	0	0	0	36	0	7	0	0	0	0
Lane Group Flow (vph)	0	12	0	0	74	7	5	770	0	33	876	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		6.8			6.8	6.8	0.6	26.6		1.3	27.3	
Effective Green, g (s)		8.8			8.8	8.8	0.6	28.6		1.3	29.3	
Actuated g/C Ratio		0.16			0.16	0.16	0.01	0.53		0.02	0.54	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		302			230	262	19	1862		42	1929	
v/s Ratio Prot		0.01				0.00	0.00	0.22		c0.02	c0.25	
v/s Ratio Perm					c0.05							
v/c Ratio		0.04			0.32	0.03	0.26	0.41		0.79	0.45	
Uniform Delay, d1		19.1			20.1	19.1	26.6	7.7		26.3	7.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.8	0.0	7.3	0.1		62.3	0.2	
Delay (s)		19.2			20.9	19.1	33.9	7.9		88.6	7.7	
Level of Service		B			C	B	C	A		F	A	
Approach Delay (s/veh)		19.2			20.2			8.0			10.7	
Approach LOS		B			C			A			B	

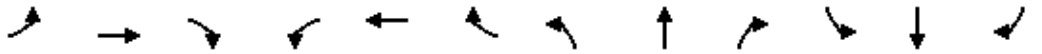
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.5
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	16	533	653	0	0	350	388
Future Volume (vph)	0	0	0	14	0	16	533	653	0	0	350	388
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Satd. Flow (RTOR)						179						431
Adj. Flow (vph)	0	0	0	21	0	24	567	695	0	0	389	431
Lane Group Flow (vph)	0	0	0	21	0	24	567	695	0	0	389	431
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.05		0.05	0.49	0.23			0.34	0.28
Control Delay (s/veh)				17.4		0.2	13.2	2.0			12.0	0.4
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				17.4		0.2	13.2	2.0			12.0	0.4
Queue Length 50th (ft)				3		0	31	0			23	0
Queue Length 95th (ft)				16		0	117	48			76	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				409		493	1436	3136			1975	1546
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				0.05		0.05	0.39	0.22			0.20	0.28

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 37.8
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	16	533	653	0	0	350	388
Future Volume (vph)	0	0	0	14	0	16	533	653	0	0	350	388
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1793		1553	3351	3455			3455	1546
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1793		1553	3351	3455			3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	21	0	24	567	695	0	0	389	431
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	21	0	2	567	695	0	0	389	431
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.8		1.8	11.0	27.7			10.7	41.5
Effective Green, g (s)				3.8		3.8	13.0	29.7			12.7	41.5
Actuated g/C Ratio				0.09		0.09	0.31	0.72			0.31	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				164		142	1049	2472			1057	1546
v/s Ratio Prot				0.01		0.00	c0.17	0.20			c0.11	
v/s Ratio Perm												c0.28
v/c Ratio				0.13		0.02	0.54	0.28			0.37	0.28
Uniform Delay, d1				17.3		17.1	11.8	2.1			11.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.4		0.0	0.6	0.1			0.2	0.4
Delay (s)				17.7		17.2	12.4	2.2			11.5	0.4
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			17.4			6.7			5.7	
Approach LOS		A			B			A			A	

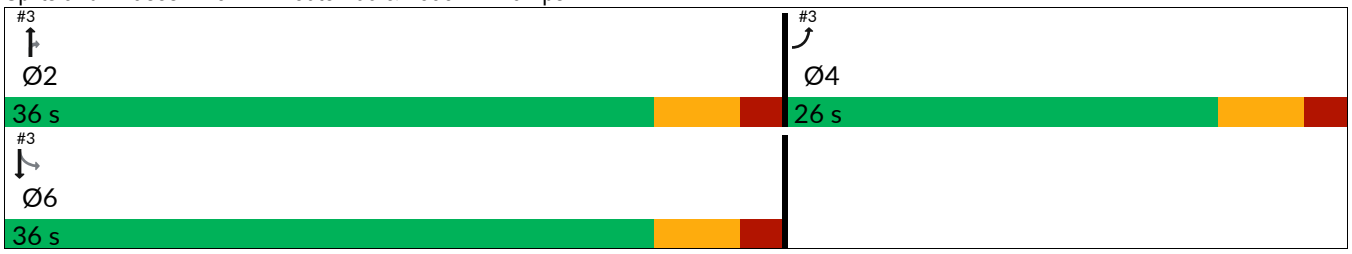
Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

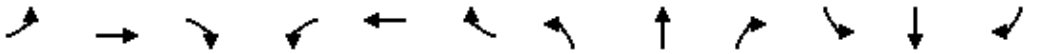
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	0	669	0	0	0	0	817	13	9	355	0
Future Volume (vph)	369	0	669	0	0	0	0	817	13	9	355	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.928	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3238	0
Satd. Flow (RTOR)			676						53			
Adj. Flow (vph)	373	0	676	0	0	0	0	888	14	11	433	0
Lane Group Flow (vph)	373	0	676	0	0	0	0	888	14	0	444	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.36		0.24					0.51	0.02		0.27	
Control Delay (s/veh)	13.5		0.2					8.1	0.1		6.4	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	13.5		0.2					8.1	0.1		6.4	
Queue Length 50th (ft)	33		0					61	0		25	
Queue Length 95th (ft)	77		0					116	1		48	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1921		2814					2785	1256		2610	
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	0.19		0.24					0.32	0.01		0.17	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 41
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	0	669	0	0	0	0	817	13	9	355	0
Future Volume (vph)	369	0	669	0	0	0	0	817	13	9	355	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3485	
Flt Permitted	0.95		1.00					1.00	1.00		0.93	
Satd. Flow (perm)	3467		2814					3455	1546		3240	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92	0.82	0.82	0.82
Adj. Flow (vph)	373	0	676	0	0	0	0	888	14	11	433	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	373	0	676	0	0	0	0	888	7	0	444	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	10.0		40.6					18.6	18.6		18.6	
Effective Green, g (s)	12.0		40.6					20.6	20.6		20.6	
Actuated g/C Ratio	0.30		1.00					0.51	0.51		0.51	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1024		2814					1753	784		1643	
v/s Ratio Prot	c0.11							c0.26				
v/s Ratio Perm			0.24						0.00		0.14	
v/c Ratio	0.36		0.24					0.51	0.01		0.27	
Uniform Delay, d1	11.3		0.0					6.6	4.9		5.7	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.2		0.2					0.2	0.0		0.1	
Delay (s)	11.5		0.2					6.9	5.0		5.8	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.2			0.0			6.8			5.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

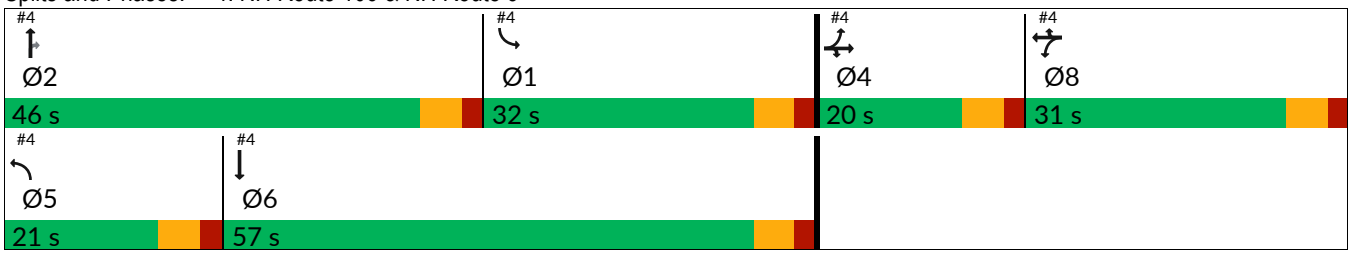
c Critical Lane Group

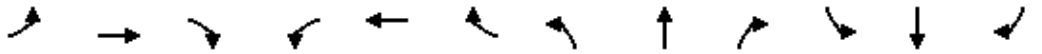
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	243	51	272	229	35	50	437	278	47	580	397
Future Volume (vph)	358	243	51	272	229	35	50	437	278	47	580	397
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.984		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1572	3257	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.984		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1572	3257	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			296			399
Adj. Flow (vph)	373	253	53	306	257	39	53	465	296	51	630	432
Lane Group Flow (vph)	373	253	53	184	379	39	53	465	296	51	630	432
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.55	0.69	0.12	0.52	0.52	0.08	0.25	0.45	0.44	0.20	0.63	0.24
Control Delay (s/veh)	37.9	47.6	0.5	36.8	32.9	0.3	41.3	27.9	5.9	37.1	30.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.9	47.6	0.5	36.8	32.9	0.3	41.3	27.9	5.9	37.1	30.0	0.3
Queue Length 50th (ft)	94	129	0	96	99	0	26	114	0	24	154	0
Queue Length 95th (ft)	180	#329	0	192	168	0	72	191	63	66	248	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	673	365	452	533	1104	641	369	1822	955	607	2299	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.69	0.12	0.35	0.34	0.06	0.14	0.26	0.31	0.08	0.27	0.24

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 83.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	243	51	272	229	35	50	437	278	47	580	397
Future Volume (vph)	358	243	51	272	229	35	50	437	278	47	580	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1572	3257	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1572	3257	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	373	253	53	306	257	39	53	465	296	51	630	432
RTOR Reduction (vph)	0	0	43	0	0	30	0	0	210	0	0	0
Lane Group Flow (vph)	373	253	10	184	379	9	53	465	86	51	630	432
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.7	14.7	14.7	16.8	16.8	16.8	6.6	23.0	23.0	7.2	23.6	85.7
Effective Green, g (s)	16.7	16.7	16.7	18.8	18.8	18.8	8.6	25.0	25.0	9.2	25.6	85.7
Actuated g/C Ratio	0.19	0.19	0.19	0.22	0.22	0.22	0.10	0.29	0.29	0.11	0.30	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	652	354	301	344	714	339	173	1007	450	185	1032	1812
v/s Ratio Prot	0.11	c0.14	0.01	c0.12	0.12	0.01	0.03	c0.13		0.03	c0.18	
v/s Ratio Perm									0.06			0.24
v/c Ratio	0.57	0.71	0.03	0.53	0.53	0.03	0.31	0.46	0.19	0.28	0.61	0.24
Uniform Delay, d1	31.3	32.3	28.0	29.6	29.6	26.3	35.8	24.8	22.8	35.2	25.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	6.7	0.0	1.6	0.8	0.0	1.0	0.3	0.2	0.8	1.1	0.3
Delay (s)	32.5	39.0	28.0	31.2	30.3	26.3	36.8	25.2	23.0	36.0	26.8	0.3
Level of Service	C	D	C	C	C	C	D	C	C	D	C	A
Approach Delay (s/veh)		34.6			30.3			25.1			17.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	403.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	4	187	0	301	1	587	27	279	807	5
Future Vol, veh/h	1	0	4	187	0	301	1	587	27	279	807	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	79	79	79	94	94	94	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	2	0	8	237	0	381	1	624	29	303	877	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2113	2142	880	2110	-	624	883	0	0	653	0	0
Stage 1	1486	1486	-	627	-	-	-	-	-	-	-	-
Stage 2	627	655	-	1484	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	38	49	349	~ 38	0	489	771	-	-	938	-	-
Stage 1	157	190	-	475	0	-	-	-	-	-	-	-
Stage 2	475	466	-	~ 157	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	6	33	349	~ 25	-	489	771	-	-	938	-	-
Mov Cap-2 Maneuver	6	33	-	~ 25	-	-	-	-	-	-	-	-
Stage 1	106	128	-	474	-	-	-	-	-	-	-	-
Stage 2	105	465	-	~ 104	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	183.73	$ 1603.77	0.02	2.73
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	771	-	-	6	349	25	489	938	-	-
HCM Lane V/C Ratio	0.001	-	-	0.357	0.023	9.503	0.78	0.323	-	-
HCM Ctrl Dly (s/v)	9.7	-	-	$ 856.5	15.$	4130.9	33.8	10.7	-	-
HCM Lane LOS	A	-	-	F	C	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	29.5	7	1.4	-	-

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

Intersection	
Int Delay, s/veh	29.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	223	215	717	801	197
Future Vol, veh/h	82	223	215	717	801	197
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	85	232	224	747	843	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2038	843	1051	0	-	0
Stage 1	843	-	-	-	-	-
Stage 2	1195	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	~ 63	367	666	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 42	367	666	-	-	-
Mov Cap-2 Maneuver	~ 42	-	-	-	-	-
Stage 1	282	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	207.61	3.02	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	666	-	42	367	-	-
HCM Lane V/C Ratio	0.336	-	2.038	0.634	-	-
HCM Ctrl Dly (s/v)	13.1	-	$ 689.7	30.3	-	-
HCM Lane LOS	B	-	F	D	-	-
HCM 95th %tile Q(veh)	1.5	-	9	4.2	-	-

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

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	19	16	908	976	48
Future Vol, veh/h	24	19	16	908	976	48
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	92	92	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	29	23	17	987	1006	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2028	1006	1056	0	-	0
Stage 1	1006	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	64	295	663	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	350	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	62	295	663	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	347	-	-	-	-	-
Stage 2	350	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	66.75	0.18	0
HCM LOS	F		

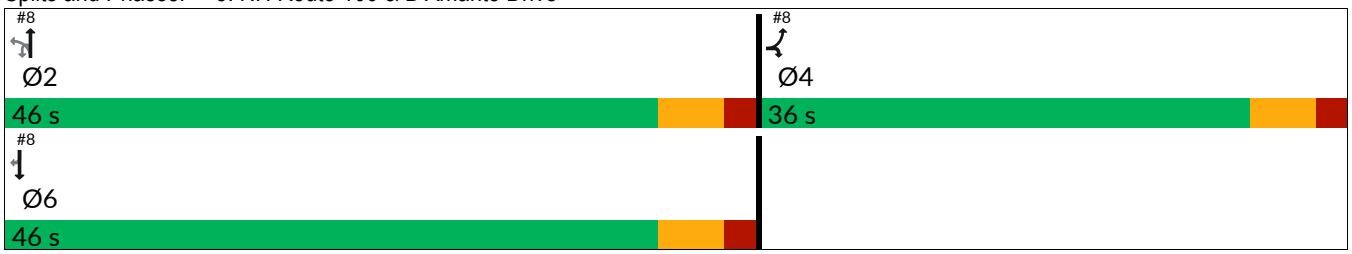
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	663	-	62	295	-	-
HCM Lane V/C Ratio	0.026	-	0.464	0.078	-	-
HCM Ctrl Dly (s/v)	10.6	-	105.2	18.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.8	0.3	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	294	118	2	153	630	612	383
Future Volume (vph)	294	118	2	153	630	612	383
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1745	1900	1837	1615
Flt Permitted	0.950			0.279			
Satd. Flow (perm)	1745	1561	0	512	1900	1837	1615
Satd. Flow (RTOR)		137					399
Adj. Flow (vph)	328	137	2	174	716	638	399
Lane Group Flow (vph)	328	137	0	176	716	638	399
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.58	0.23		0.64	0.70	0.65	0.38
Control Delay (s/veh)	23.7	4.8		24.9	15.6	14.3	2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	4.8		24.9	15.6	14.3	2.2
Queue Length 50th (ft)	111	0		41	176	150	0
Queue Length 95th (ft)	188	30		#155	364	326	39
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	985	941		366	1359	1314	1269
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	0.15		0.48	0.53	0.49	0.31

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 61.1
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	294	118	2	153	630	612	383
Future Volume (vph)	294	118	2	153	630	612	383
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1745	1900	1837	1615
Flt Permitted	0.95	1.00		0.28	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		513	1900	1837	1615
Peak-hour factor, PHF	0.86	0.86	0.88	0.88	0.88	0.96	0.96
Growth Factor (vph)	96%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	328	137	2	174	716	638	399
RTOR Reduction (vph)	0	93	0	0	0	0	182
Lane Group Flow (vph)	328	44	0	176	716	638	217
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	17.5	17.5		30.7	30.7	30.7	30.7
Effective Green, g (s)	19.5	19.5		32.7	32.7	32.7	32.7
Actuated g/C Ratio	0.32	0.32		0.54	0.54	0.54	0.54
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	565	505		278	1032	997	877
v/s Ratio Prot	c0.19	0.03			c0.38	0.35	
v/s Ratio Perm				0.34			0.13
v/c Ratio	0.58	0.09		0.63	0.69	0.64	0.25
Uniform Delay, d1	16.9	14.2		9.6	10.1	9.6	7.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1		4.7	2.0	1.4	0.1
Delay (s)	18.5	14.2		14.2	12.1	11.0	7.4
Level of Service	B	B		B	B	B	A
Approach Delay (s/veh)	17.2				12.5	9.6	
Approach LOS	B				B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	122	164	765	639	16
Future Vol, veh/h	20	122	164	765	639	16
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	92	92
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	23	142	167	781	695	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1810	695	712	0	-	0
Stage 1	695	-	-	-	-	-
Stage 2	1115	-	-	-	-	-
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	88	446	897	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	71	446	897	-	-	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	316	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	41.42	1.75	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	897	-	256	-	-
HCM Lane V/C Ratio	0.187	-	0.645	-	-
HCM Ctrl Dly (s/v)	9.9	-	41.4	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.7	-	4	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	390	506	30	22	42
Future Vol, veh/h	24	390	506	30	22	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	72	72
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	28	459	562	33	31	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	596	0	-	0	865	579
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	286	-
Critical Hdwy	4.115	-	-	-	6.645	6.245
Critical Hdwy Stg 1	-	-	-	-	5.445	-
Critical Hdwy Stg 2	-	-	-	-	5.845	-
Follow-up Hdwy	2.2095	-	-	-	3.5285	3.3285
Pot Cap-1 Maneuver	985	-	-	-	307	512
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	985	-	-	-	298	512
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.51	0	14.84
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	985	-	-	-	298	512
HCM Lane V/C Ratio	0.029	-	-	-	0.103	0.114
HCM Ctrl Dly (s/v)	8.8	-	-	-	18.5	12.9
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.4

Intersection	
Int Delay, s/veh	10.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	90	140	408	111	147
Future Vol, veh/h	267	90	140	408	111	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	87	87	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	281	95	161	469	146	193

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	376	0	1119	188
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	791	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1194	-	217	828
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	450	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1194	-	188	828
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	450	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.17	36.32
HCM LOS			E

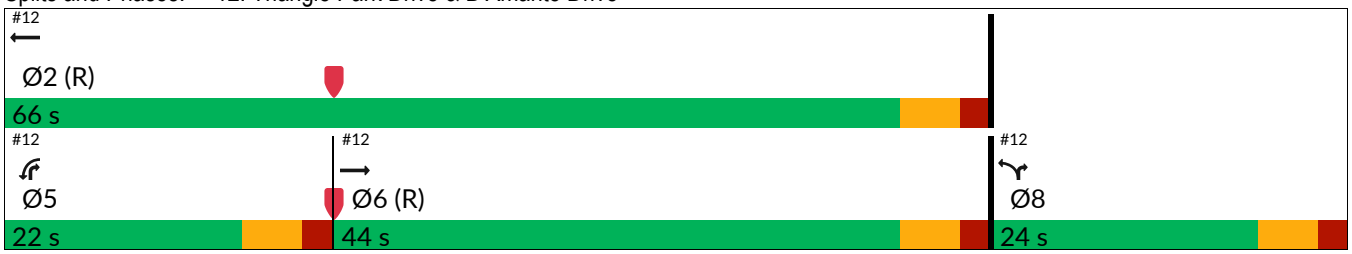
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	828	-	-	1194	-
HCM Lane V/C Ratio	0.778	0.233	-	-	0.135	-
HCM Ctrl Dly (s/v)	70.3	10.7	-	-	8.5	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	5.2	0.9	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	307	153	82	437	107	50
Future Volume (vph)	307	153	82	437	107	50
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.950					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3315	0	1728	1881	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3315	0	1728	1881	1805	1615
Satd. Flow (RTOR)	123					54
Adj. Flow (vph)	337	168	89	475	116	54
Lane Group Flow (vph)	505	0	89	475	116	54
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	44.0		22.0	66.0	24.0	
Total Split (%)	48.9%		24.4%	73.3%	26.7%	
Maximum Green (s)	38.0		16.0	60.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		None	C-Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.23		0.39	0.31	0.44	0.10
Control Delay (s/veh)	4.7		39.8	4.1	39.8	5.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.7		39.8	4.1	39.8	5.6
Queue Length 50th (ft)	10		47	67	61	0
Queue Length 95th (ft)	35		89	129	107	21
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2207		345	1511	401	620
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	0.23		0.26	0.31	0.29	0.09

Intersection Summary
Cycle Length: 90

Actuated Cycle Length: 90
Offset: 13 (14%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

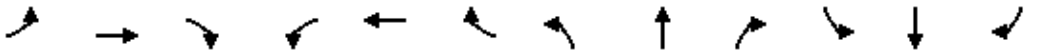
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	307	153	82	437	107	50
Future Volume (vph)	307	153	82	437	107	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3316		1728	1881	1805	1615
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3316		1728	1881	1805	1615
Peak-hour factor, PHF	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	168	89	475	116	54
RTOR Reduction (vph)	47	0	0	0	0	38
Lane Group Flow (vph)	458	0	89	475	116	16
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	53.6		8.7	68.3	9.7	24.4
Effective Green, g (s)	55.6		10.7	70.3	11.7	26.4
Actuated g/C Ratio	0.62		0.12	0.78	0.13	0.29
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2048		205	1469	234	473
v/s Ratio Prot	0.14		c0.05	c0.25	c0.06	0.01
v/s Ratio Perm						
v/c Ratio	0.22		0.43	0.32	0.50	0.03
Uniform Delay, d1	7.6		36.8	2.9	36.4	22.7
Progression Factor	0.62		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		1.5	0.6	1.7	0.0
Delay (s)	5.0		38.3	3.5	38.1	22.7
Level of Service	A		D	A	D	C
Approach Delay (s/veh)	5.0			9.0	33.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

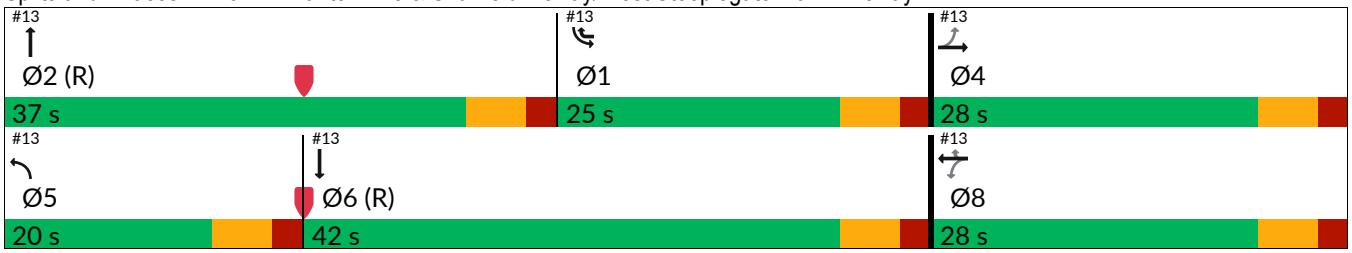


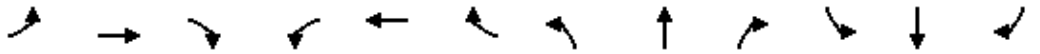
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	1	53	11	5	40	46	579	17	48	524	55
Future Volume (vph)	97	1	53	11	5	40	46	579	17	48	524	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.947				0.850		0.996			0.986	
Flt Protected		0.969			0.967		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1899	1669	1805	3476	0	3385	3441	0
Flt Permitted		0.789			0.742		0.950			0.950		
Satd. Flow (perm)	0	2697	0	0	1457	1669	1805	3476	0	3385	3441	0
Satd. Flow (RTOR)		65				109		4			15	
Adj. Flow (vph)	118	1	65	13	6	47	52	658	19	51	552	58
Lane Group Flow (vph)	0	184	0	0	19	47	52	677	0	51	610	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	28.0	28.0		28.0	28.0	25.0	20.0	37.0		25.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%	27.8%	22.2%	41.1%		27.8%	46.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0	19.0	14.0	31.0		19.0	36.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46			0.10	0.08	0.26	0.31		0.11	0.26	
Control Delay (s/veh)		26.5			34.4	0.3	42.5	7.9		33.5	7.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		26.5			34.4	0.3	42.5	7.9		33.5	7.3	
Queue Length 50th (ft)		33			10	0	28	75		12	72	
Queue Length 95th (ft)		54			27	0	62	116		29	122	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		766			388	617	320	2186		789	2349	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.24			0.05	0.08	0.16	0.31		0.06	0.26	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	1	53	11	5	40	46	579	17	48	524	55
Future Volume (vph)	97	1	53	11	5	40	46	579	17	48	524	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95		0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3312			1898	1669	1805	3475		3385	3440	
Flt Permitted		0.79			0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2697			1456	1669	1805	3475		3385	3440	
Peak-hour factor, PHF	0.82	0.82	0.82	0.86	0.86	0.86	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	118	1	65	13	6	47	52	658	19	51	552	58
RTOR Reduction (vph)	0	57	0	0	0	35	0	2	0	0	5	0
Lane Group Flow (vph)	0	127	0	0	19	12	52	675	0	51	605	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		9.5			9.5	19.8	5.6	52.2		10.3	56.9	
Effective Green, g (s)		11.5			11.5	23.8	7.6	54.2		12.3	58.9	
Actuated g/C Ratio		0.13			0.13	0.26	0.08	0.60		0.14	0.65	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		344			186	515	152	2092		462	2251	
v/s Ratio Prot						0.00	0.03	c0.19		0.02	c0.18	
v/s Ratio Perm		c0.05			0.01	0.00						
v/c Ratio		0.37			0.10	0.02	0.34	0.32		0.11	0.27	
Uniform Delay, d1		35.9			34.7	24.5	38.8	8.8		34.1	6.5	
Progression Factor		1.00			1.00	1.00	1.10	0.82		1.00	1.00	
Incremental Delay, d2		0.7			0.2	0.0	1.3	0.4		0.1	0.3	
Delay (s)		36.6			34.9	24.5	44.0	7.6		34.2	6.8	
Level of Service		D			C	C	D	A		C	A	
Approach Delay (s/veh)		36.6			27.5			10.2			8.9	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	3	58	1069	128	37	1200
Future Vol, veh/h	3	58	1069	128	37	1200
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	89	89	93	93	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	3	65	1149	138	38	1237

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1913	644	0	0	1287	0
Stage 1	1218	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	61	421	-	-	540	-
Stage 1	247	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	57	421	-	-	540	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	229	-	-	-	-	-
Stage 2	462	-	-	-	-	-

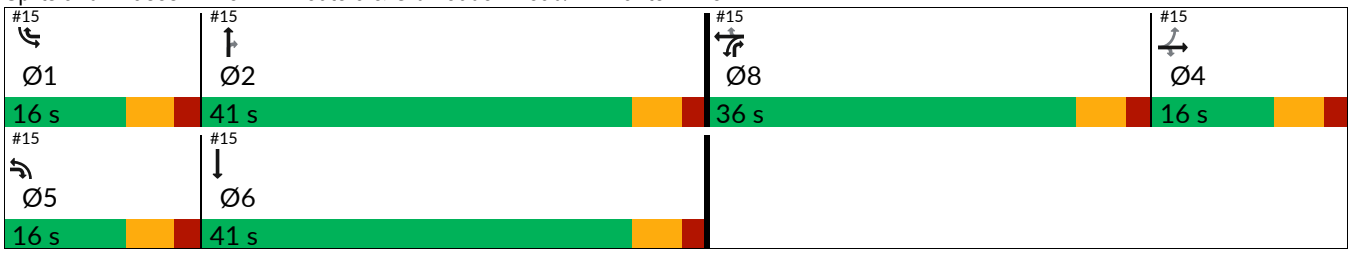
Approach	NW	NE	SW
HCM Ctrl Dly, s/v	18.83	0	0.36
HCM LOS	C		

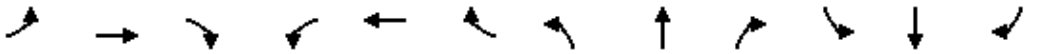
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	328	540	-
HCM Lane V/C Ratio	-	-	0.208	0.071	-
HCM Ctrl Dly (s/v)	-	-	18.8	12.2	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	54	85	509	69	139	71	629	427	147	642	38
Future Volume (vph)	13	54	85	509	69	139	71	629	427	147	642	38
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.990		0.950	0.963		0.950			0.950		
Satd. Flow (prot)	0	1818	1561	1658	1738	1507	1787	3455	1599	3502	3462	0
Flt Permitted		0.847		0.950	0.963		0.950			0.950		
Satd. Flow (perm)	0	1556	1561	1658	1738	1507	1787	3455	1599	3502	3462	0
Satd. Flow (RTOR)			90			149			331		6	
Adj. Flow (vph)	16	65	102	547	74	149	76	676	459	165	721	43
Lane Group Flow (vph)	0	81	102	306	315	149	76	676	459	165	764	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	16.0	16.0	16.0	36.0	36.0	16.0	16.0	41.0	36.0	16.0	41.0	
Total Split (%)	14.7%	14.7%	14.7%	33.0%	33.0%	14.7%	14.7%	37.6%	33.0%	14.7%	37.6%	
Maximum Green (s)	10.0	10.0	10.0	30.0	30.0	10.0	10.0	35.0	30.0	10.0	35.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.42	0.23	0.63	0.62	0.20	0.35	0.62	0.40	0.37	0.60	
Control Delay (s/veh)		50.5	10.3	37.2	36.5	2.7	47.9	30.8	3.2	44.3	29.5	
Queue Delay		0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		50.5	10.3	37.4	36.8	2.7	47.9	30.8	3.2	44.3	29.5	
Queue Length 50th (ft)		49	6	175	181	0	46	196	29	50	224	
Queue Length 95th (ft)		96	40	295	301	26	98	265	67	89	296	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		222	483	631	661	760	255	1521	1271	500	1527	
Starvation Cap Reductn		0	0	49	67	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.36	0.21	0.53	0.53	0.20	0.30	0.44	0.36	0.33	0.50	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 90.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	54	85	509	69	139	71	629	427	147	642	38
Future Volume (vph)	13	54	85	509	69	139	71	629	427	147	642	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1819	1561	1658	1738	1507	1787	3455	1599	3502	3460	
Flt Permitted		0.85	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1555	1561	1658	1738	1507	1787	3455	1599	3502	3460	
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	16	65	102	547	74	149	76	676	459	165	721	43
RTOR Reduction (vph)	0	0	73	0	0	89	0	0	129	0	4	0
Lane Group Flow (vph)	0	81	29	306	315	60	76	676	330	165	760	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		6.9	13.7	24.4	24.4	33.7	6.8	28.5	52.9	9.3	31.0	
Effective Green, g (s)		8.9	17.7	26.4	26.4	37.7	8.8	30.5	56.9	11.3	33.0	
Actuated g/C Ratio		0.10	0.19	0.28	0.28	0.40	0.09	0.33	0.61	0.12	0.35	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		148	363	470	492	610	168	1131	1045	425	1226	
v/s Ratio Prot			0.01	c0.18	0.18	0.01	0.04	0.20	0.09	c0.05	c0.22	
v/s Ratio Perm		c0.05	0.01			0.03			0.12			
v/c Ratio		0.55	0.08	0.65	0.64	0.10	0.45	0.60	0.32	0.39	0.62	
Uniform Delay, d1		40.2	31.0	29.3	29.2	17.2	39.9	26.2	8.7	37.7	24.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.1	0.1	3.2	2.8	0.1	1.9	0.9	0.2	0.6	1.0	
Delay (s)		44.3	31.1	32.5	32.0	17.2	41.8	27.0	8.9	38.3	25.8	
Level of Service		D	C	C	C	B	D	C	A	D	C	
Approach Delay (s/veh)		36.9			29.4			21.1			28.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	10	50	19	11	37	35	726	21	13	758	18
Future Volume (vph)	34	10	50	19	11	37	35	726	21	13	758	18
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.996			0.997	
Flt Protected		0.963			0.969		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1865	1636	1847	3441	0	1787	3445	0
Flt Permitted		0.753			0.775		0.950			0.950		
Satd. Flow (perm)	0	1431	1615	0	1492	1636	1847	3441	0	1787	3445	0
Satd. Flow (RTOR)			36			40		3			3	
Adj. Flow (vph)	41	12	61	21	12	40	38	798	23	15	861	20
Lane Group Flow (vph)	0	53	61	0	33	40	38	821	0	15	881	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0	34.0		28.0	34.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	37.8%		31.1%	37.8%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	28.0		22.0	28.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.32	0.17		0.19	0.11	0.20	0.31		0.09	0.35	
Control Delay (s/veh)		40.6	13.0		37.4	8.4	38.7	6.0		51.9	3.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		40.6	13.0		37.4	8.4	38.7	6.0		51.9	3.1	
Queue Length 50th (ft)		28	11		18	0	20	97		7	95	
Queue Length 95th (ft)		56	32		44	23	49	154		m25	32	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		381	626		397	636	492	2684		476	2530	
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		0.14	0.10		0.08	0.06	0.08	0.31		0.03	0.35	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

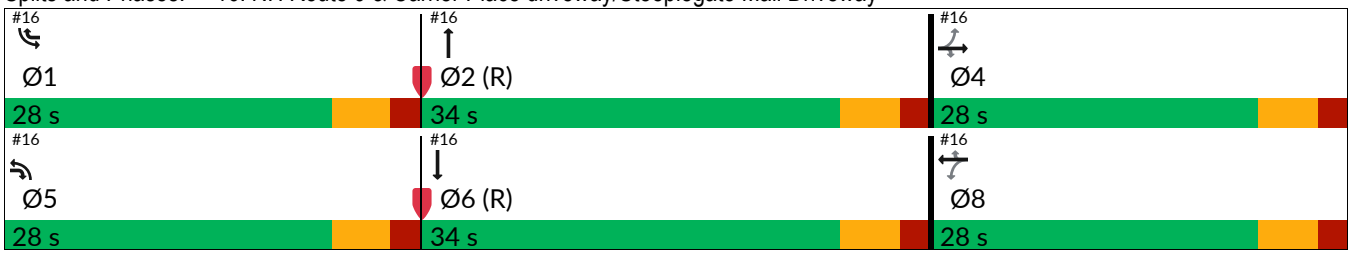
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green

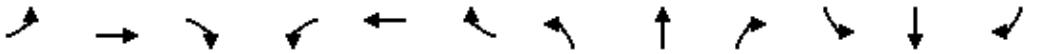
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	10	50	19	11	37	35	726	21	13	758	18
Future Volume (vph)	34	10	50	19	11	37	35	726	21	13	758	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1829	1615		1865	1636	1847	3441		1787	3443	
Flt Permitted		0.75	1.00		0.78	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1430	1615		1492	1636	1847	3441		1787	3443	
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	41	12	61	21	12	40	38	798	23	15	861	20
RTOR Reduction (vph)	0	0	29	0	0	34	0	1	0	0	1	0
Lane Group Flow (vph)	0	53	32	0	33	6	38	820	0	15	880	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		6.1	12.4		6.1	10.2	6.3	61.8		4.1	59.6	
Effective Green, g (s)		8.1	16.4		8.1	14.2	8.3	63.8		6.1	61.6	
Actuated g/C Ratio		0.09	0.18		0.09	0.16	0.09	0.71		0.07	0.68	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		128	366		134	330	170	2439		121	2356	
v/s Ratio Prot			0.01			0.00	c0.02	0.24		0.01	c0.26	
v/s Ratio Perm		c0.04	0.01		0.02	0.00						
v/c Ratio		0.41	0.09		0.25	0.02	0.22	0.34		0.12	0.37	
Uniform Delay, d1		38.7	30.6		38.1	32.0	37.9	5.0		39.4	6.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.37	0.40	
Incremental Delay, d2		2.2	0.1		1.0	0.0	0.7	0.4		0.4	0.4	
Delay (s)		40.9	30.7		39.1	32.0	38.5	5.4		54.7	2.9	
Level of Service		D	C		D	C	D	A		D	A	
Approach Delay (s/veh)		35.4			35.2			6.8			3.7	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

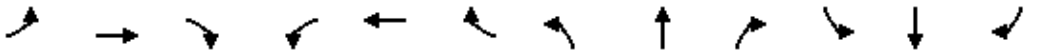
Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	764	33	10	786
Future Vol, veh/h	3	4	764	33	10	786
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	93	93	90	90
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	3	5	822	35	11	873

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1298	428	0	0	857	0
Stage 1	839	-	-	-	-	-
Stage 2	459	-	-	-	-	-
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	156	580	-	-	792	-
Stage 1	389	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	154	580	-	-	792	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	609	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	19	0	0.12
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	265	792	-
HCM Lane V/C Ratio	-	-	0.03	0.014	-
HCM Ctrl Dly (s/v)	-	-	19	9.6	-
HCM Lane LOS	-	-	C	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)	48	14	126	93	9	19	90	619	59	20	577	42
Future Volume (vph)	48	14	126	93	9	19	90	619	59	20	577	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.990	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3421	0
Flt Permitted		0.655			0.692		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1315	1615	1805	3490	1561	1787	3421	0
Satd. Flow (RTOR)			182			182			109		9	
Adj. Flow (vph)	57	17	150	131	13	27	101	696	66	23	663	48
Lane Group Flow (vph)	0	74	150	0	144	27	101	696	66	23	711	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	46.0	46.0	16.0	36.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	28.9%	51.1%	51.1%	17.8%	40.0%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	20.0	40.0	40.0	10.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.31	0.33		0.58	0.06	0.41	0.32	0.07	0.09	0.37	
Control Delay (s/veh)		33.3	4.6		41.8	0.3	33.7	8.6	0.9	24.0	9.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		33.3	4.6		41.8	0.3	33.7	8.6	0.9	24.0	9.8	
Queue Length 50th (ft)		37	0		75	0	38	5	0	8	84	
Queue Length 95th (ft)		65	22		94	0	83	210	9	m16	106	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		331	564		350	564	441	2232	1037	294	1945	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22	0.27		0.41	0.05	0.23	0.31	0.06	0.08	0.37	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

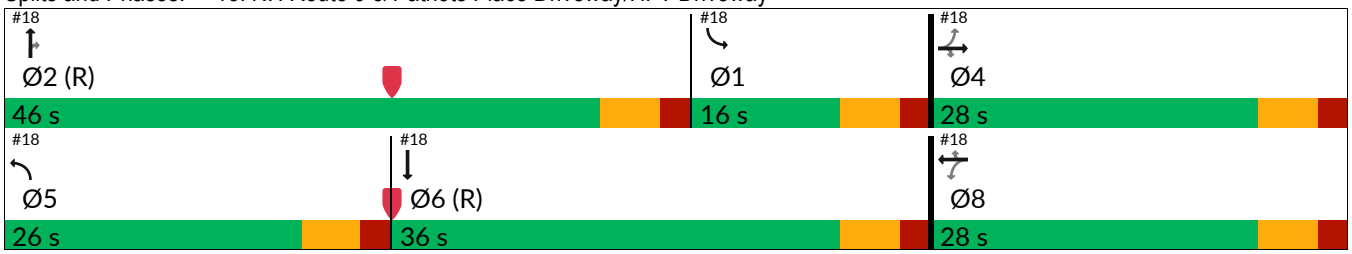
Offset: 47 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green

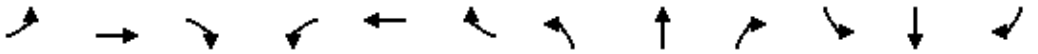
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

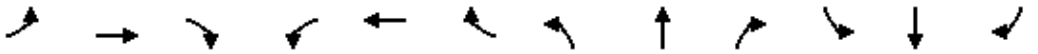




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	619	59	20	577	42
Future Volume (vph)	48	14	126	93	9	19	90	619	59	20	577	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3420	
Flt Permitted		0.65	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1316	1615	1805	3490	1561	1787	3420	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	57	17	150	131	13	27	101	696	66	23	663	48
RTOR Reduction (vph)	0	0	122	0	0	22	0	0	28	0	4	0
Lane Group Flow (vph)	0	74	28	0	144	5	101	696	38	23	707	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.0	15.0		15.0	15.0	9.1	50.2	50.2	6.8	47.9	
Effective Green, g (s)		17.0	17.0		17.0	17.0	11.1	52.2	52.2	8.8	49.9	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.12	0.58	0.58	0.10	0.55	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		234	305		248	305	222	2024	905	174	1896	
v/s Ratio Prot							c0.06	0.20		0.01	c0.21	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.02			
v/c Ratio		0.32	0.09		0.58	0.02	0.45	0.34	0.04	0.13	0.37	
Uniform Delay, d1		31.5	30.1		33.3	29.7	36.6	9.9	8.1	37.1	11.3	
Progression Factor		1.00	1.00		1.00	1.00	0.83	0.70	0.67	0.76	0.72	
Incremental Delay, d2		0.8	0.1		3.4	0.0	1.4	0.5	0.1	0.3	0.5	
Delay (s)		32.3	30.3		36.7	29.7	31.9	7.4	5.5	28.4	8.7	
Level of Service		C	C		D	C	C	A	A	C	A	
Approach Delay (s/veh)		30.9			35.6			10.1			9.3	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

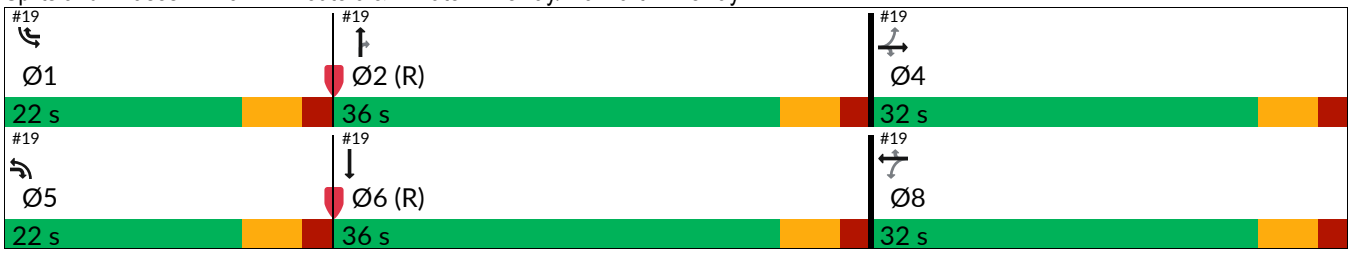


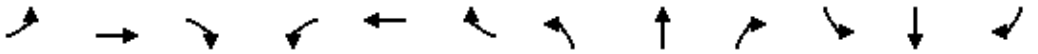
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	434	22	144	457	52
Future Volume (vph)	72	13	85	94	35	155	78	434	22	144	457	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.985	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1755	1546	1787	3455	1599	1685	3437	0
Flt Permitted		0.553			0.694		0.950			0.950		
Satd. Flow (perm)	0	1051	1615	0	1262	1546	1787	3455	1599	1685	3437	0
Satd. Flow (RTOR)			108			185			109		15	
Adj. Flow (vph)	91	16	108	112	42	185	84	467	24	162	513	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	467	24	162	571	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	32.0	32.0	22.0	32.0	32.0	22.0	22.0	36.0	36.0	22.0	36.0	
Total Split (%)	35.6%	35.6%	24.4%	35.6%	35.6%	24.4%	24.4%	40.0%	40.0%	24.4%	40.0%	
Maximum Green (s)	26.0	26.0	16.0	26.0	26.0	16.0	16.0	30.0	30.0	16.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.52	0.16		0.62	0.25	0.37	0.27	0.03	0.55	0.31	
Control Delay (s/veh)		40.1	3.5		43.2	2.6	53.3	5.9	0.0	40.2	13.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		40.1	3.5		43.2	2.6	53.3	5.9	0.0	40.2	13.0	
Queue Length 50th (ft)		55	0		81	0	49	40	0	85	85	
Queue Length 95th (ft)		84	18		122	23	98	25	0	136	151	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		326	773		392	795	357	1706	845	348	1866	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.33	0.14		0.39	0.23	0.24	0.27	0.03	0.47	0.31	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	434	22	144	457	52
Future Volume (vph)	72	13	85	94	35	155	78	434	22	144	457	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1755	1546	1787	3455	1599	1685	3436	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1050	1615		1263	1546	1787	3455	1599	1685	3436	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	91	16	108	112	42	185	84	467	24	162	513	58
RTOR Reduction (vph)	0	0	73	0	0	116	0	0	12	0	7	0
Lane Group Flow (vph)	0	107	35	0	154	69	84	467	12	162	564	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.7	25.3		15.7	29.5	9.6	42.5	42.5	13.8	46.7	
Effective Green, g (s)		17.7	29.3		17.7	33.5	11.6	44.5	44.5	15.8	48.7	
Actuated g/C Ratio		0.20	0.33		0.20	0.37	0.13	0.49	0.49	0.18	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		206	597		248	644	230	1708	790	295	1859	
v/s Ratio Prot			0.01			0.02	0.05	0.14		c0.10	c0.16	
v/s Ratio Perm		0.10	0.01		c0.12	0.03			0.01			
v/c Ratio		0.52	0.06		0.62	0.11	0.37	0.27	0.02	0.55	0.30	
Uniform Delay, d1		32.3	20.9		33.1	18.5	35.8	13.3	11.6	33.9	11.3	
Progression Factor		1.00	1.00		1.00	1.00	1.39	0.36	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.0		4.8	0.1	1.0	0.4	0.0	2.1	0.4	
Delay (s)		34.6	20.9		37.8	18.5	50.9	5.2	11.6	35.9	11.8	
Level of Service		C	C		D	B	D	A	B	D	B	
Approach Delay (s/veh)		27.7			27.3			12.1			17.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

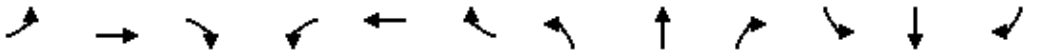
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	0	0	0	0	651	0	1	675	0
Future Vol, veh/h	1	0	0	0	0	0	0	651	0	1	675	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	160	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	25	25	25	97	97	97	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	0	0	0
Mvmt Flow	4	0	0	0	0	0	0	671	0	1	726	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1064	1399	363	1036	1399	336	726	0	0	671	0	0
Stage 1	728	728	-	671	671	-	-	-	-	-	-	-
Stage 2	336	671	-	365	728	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	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	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	180	142	640	188	142	666	880	-	-	929	-	-
Stage 1	386	432	-	417	458	-	-	-	-	-	-	-
Stage 2	658	458	-	632	432	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	180	142	640	188	142	666	880	-	-	929	-	-
Mov Cap-2 Maneuver	180	142	-	188	142	-	-	-	-	-	-	-
Stage 1	385	431	-	417	458	-	-	-	-	-	-	-
Stage 2	658	458	-	631	431	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	25.48	0	0	0.01
HCM LOS	D	A		

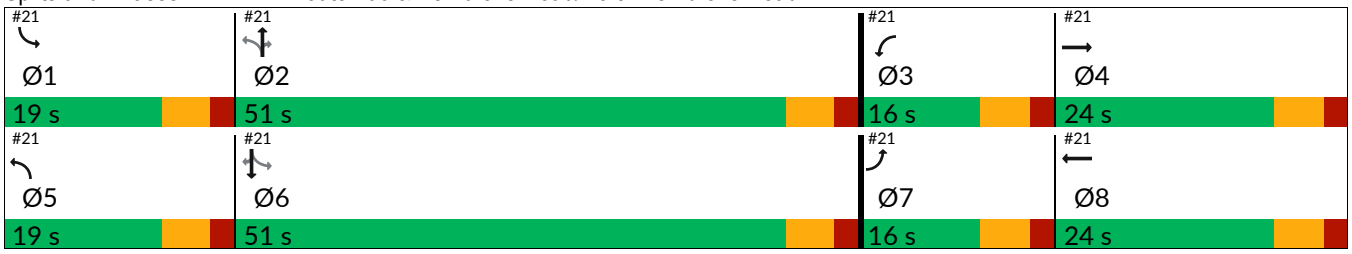
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	880	-	-	180	-	929	-	-
HCM Lane V/C Ratio	-	-	-	0.022	-	0.001	-	-
HCM Ctrl Dly (s/v)	0	-	-	25.5	0	8.9	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

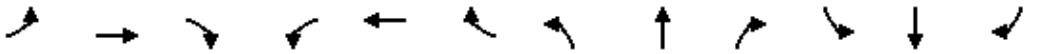


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	22	48	8	24	62	37	616	14	50	579	97
Future Volume (vph)	113	22	48	8	24	62	37	616	14	50	579	97
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.898			0.892				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1706	0	1770	1495	0	1847	1881	1599	1847	1881	1546
Flt Permitted	0.950			0.950			0.220			0.154		
Satd. Flow (perm)	1805	1706	0	1770	1495	0	428	1881	1599	299	1881	1546
Satd. Flow (RTOR)		60			73				149			149
Adj. Flow (vph)	141	28	60	9	28	73	42	700	16	56	651	109
Lane Group Flow (vph)	141	88	0	9	101	0	42	700	16	56	651	109
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.53	0.19		0.05	0.41		0.10	0.74	0.02	0.16	0.64	0.12
Control Delay (s/veh)	46.2	14.4		40.9	20.6		7.8	24.6	0.1	8.2	20.2	1.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.2	14.4		40.9	20.6		7.8	24.6	0.1	8.2	20.2	1.4
Queue Length 50th (ft)	74	11		5	15		8	310	0	11	276	0
Queue Length 95th (ft)	132	47		20	58		22	500	0	28	452	13
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	281	546		275	442		541	1148	1034	487	1150	1003
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.16		0.03	0.23		0.08	0.61	0.02	0.11	0.57	0.11

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 81.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

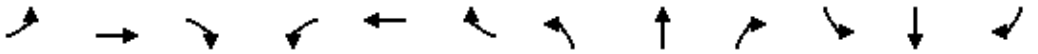




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	22	48	8	24	62	37	616	14	50	579	97
Future Volume (vph)	113	22	48	8	24	62	37	616	14	50	579	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1706		1770	1495		1847	1881	1599	1847	1881	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.22	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1805	1706		1770	1495		427	1881	1599	299	1881	1546
Peak-hour factor, PHF	0.80	0.80	0.80	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	141	28	60	9	28	73	42	700	16	56	651	109
RTOR Reduction (vph)	0	46	0	0	63	0	0	0	8	0	0	55
Lane Group Flow (vph)	141	42	0	9	38	0	42	700	8	56	651	54
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	9.9	18.3		1.2	9.6		44.1	40.5	40.5	46.9	41.9	41.9
Effective Green, g (s)	11.9	20.3		3.2	11.6		48.1	42.5	42.5	50.9	43.9	43.9
Actuated g/C Ratio	0.13	0.23		0.04	0.13		0.54	0.48	0.48	0.57	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	241	389		63	194		320	898	763	292	927	762
v/s Ratio Prot	c0.08	0.02		0.01	c0.03		0.01	c0.37		c0.02	0.35	
v/s Ratio Perm							0.06		0.00	0.09		0.03
v/c Ratio	0.59	0.11		0.14	0.19		0.13	0.78	0.01	0.19	0.70	0.07
Uniform Delay, d1	36.2	27.2		41.6	34.5		12.0	19.4	12.2	12.8	17.5	11.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1		1.0	0.5		0.2	4.3	0.0	0.3	2.4	0.0
Delay (s)	39.8	27.3		42.6	35.0		12.2	23.7	12.2	13.1	19.9	11.9
Level of Service	D	C		D	D		B	C	B	B	B	B
Approach Delay (s/veh)		35.0			35.6			22.8			18.4	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	4	37	1	3	1	29	423	1	0	434	200
Future Volume (vph)	233	4	37	1	3	1	29	423	1	0	434	200
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1589	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.752			0.724			0.239					
Satd. Flow (perm)	1429	1589	0	1376	2072	0	439	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		45			2				66			233
Adj. Flow (vph)	281	5	45	2	6	2	32	465	1	0	505	233
Lane Group Flow (vph)	281	50	0	2	8	0	32	465	1	0	505	233
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.59	0.09		0.00	0.01		0.07	0.49	0.00		0.65	0.29
Control Delay (s/veh)	22.3	6.8		14.0	13.0		6.5	10.4	0.0		20.0	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	22.3	6.8		14.0	13.0		6.5	10.4	0.0		20.0	3.6
Queue Length 50th (ft)	56	1		0	1		5	87	0		98	0
Queue Length 95th (ft)	145	19		3	5		14	145	0		#286	34
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	492	577		474	715		525	1301	1163		776	793
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.57	0.09		0.00	0.01		0.06	0.36	0.00		0.65	0.29

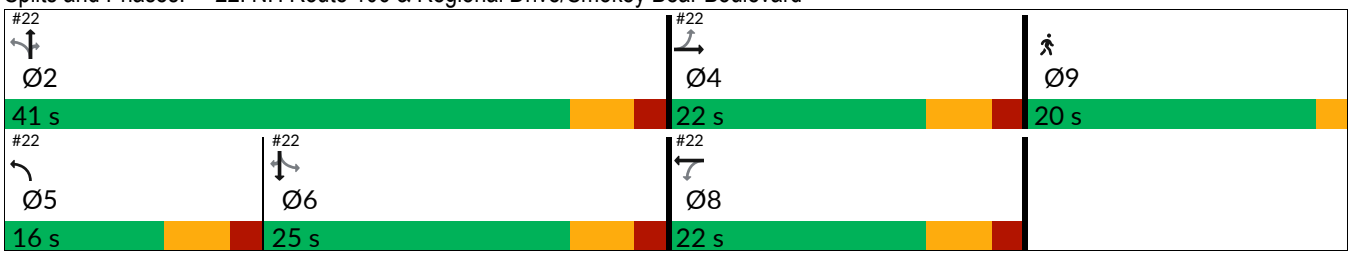
Intersection Summary
Cycle Length: 83

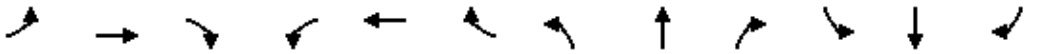
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 52.9
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

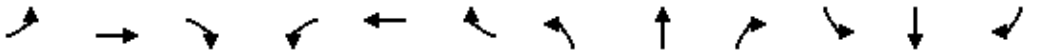




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	4	37	1	3	1	29	423	1	0	434	200
Future Volume (vph)	233	4	37	1	3	1	29	423	1	0	434	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1589		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.75	1.00		0.72	1.00		0.24	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1430	1589		1376	2073		439	1837	1615		1818	1546
Peak-hour factor, PHF	0.83	0.83	0.83	0.50	0.50	0.50	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	281	5	45	2	6	2	32	465	1	0	505	233
RTOR Reduction (vph)	0	31	0	0	1	0	0	0	0	0	0	140
Lane Group Flow (vph)	281	19	0	2	7	0	32	465	1	0	505	93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	15.6	15.6		15.6	15.6		28.9	28.9	28.9		20.5	20.5
Effective Green, g (s)	17.6	17.6		17.6	17.6		30.9	30.9	30.9		22.5	22.5
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55	0.55		0.40	0.40
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	445	494		428	645		341	1004	883		723	615
v/s Ratio Prot		0.01			0.00		0.01	c0.25			c0.28	
v/s Ratio Perm	c0.20			0.00			0.04		0.00			0.06
v/c Ratio	0.63	0.04		0.00	0.01		0.09	0.46	0.00		0.70	0.15
Uniform Delay, d1	16.7	13.6		13.4	13.4		7.5	7.8	5.8		14.2	10.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.0		0.0	0.0		0.1	0.3	0.0		3.0	0.1
Delay (s)	19.6	13.6		13.4	13.4		7.6	8.1	5.8		17.1	11.0
Level of Service	B	B		B	B		A	A	A		B	B
Approach Delay (s/veh)		18.7			13.4			8.1			15.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

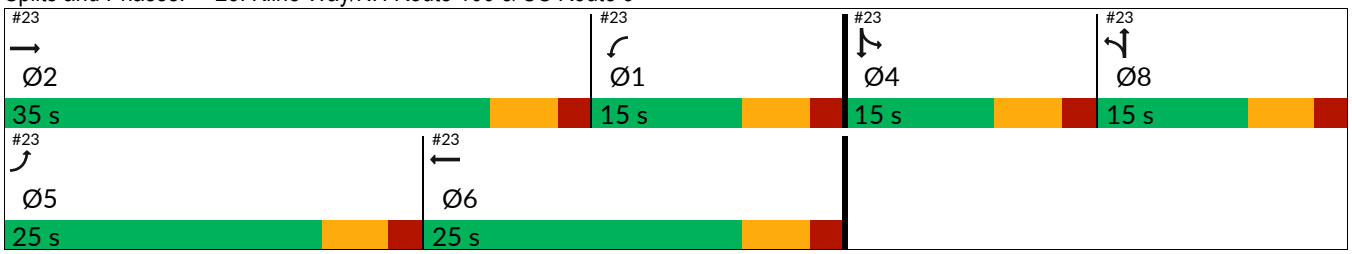


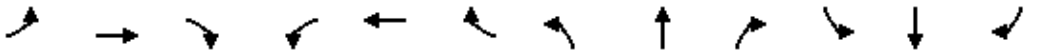
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	430	0	0	404	281	1	0	0	342	1	256
Future Volume (vph)	159	430	0	0	404	281	1	0	0	342	1	256
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt						0.850						0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Satd. Flow (RTOR)						368						368
Adj. Flow (vph)	192	518	0	0	434	302	4	0	0	438	1	328
Lane Group Flow (vph)	192	518	0	0	434	302	4	0	0	438	1	328
Turn Type	Prot	NA	Free	Prot	NA	Free	Split		Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		15.0	15.0	
Total Split (%)	31.3%	43.8%		18.8%	31.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.44	0.25			0.45	0.17	0.01			0.62	0.00	0.21
Control Delay (s/veh)	22.0	5.6			19.1	0.2	26.0			27.8	24.0	0.3
Queue Delay	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0
Total Delay (s/veh)	22.0	5.6			19.1	0.2	26.0			27.8	24.0	0.3
Queue Length 50th (ft)	46	29			54	0	0			59	0	0
Queue Length 95th (ft)	121	72			133	0	1			#149	4	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350					200	250			250		200
Base Capacity (vph)	694	2238			1389	1759	713			705	383	1599
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	0.28	0.23			0.31	0.17	0.01			0.62	0.00	0.21

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 54.2
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

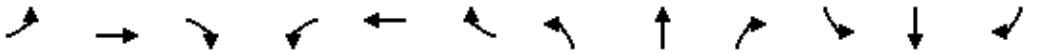




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	430	0	0	404	281	1	0	0	342	1	256
Future Volume (vph)	159	430	0	0	404	281	1	0	0	342	1	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97			0.97	1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95			0.95	1.00	1.00
Satd. Flow (prot)	1728	3455			3455	1759	3385			3351	1818	1599
Flt Permitted	0.95	1.00			1.00	1.00	0.95			0.95	1.00	1.00
Satd. Flow (perm)	1728	3455			3455	1759	3385			3351	1818	1599
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.25	0.25	0.25	0.78	0.78	0.78
Adj. Flow (vph)	192	518	0	0	434	302	4	0	0	438	1	328
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	192	518	0	0	434	302	4	0	0	438	1	328
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split		Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.6	30.7			13.1	58.8	0.8			9.3	9.3	58.8
Effective Green, g (s)	13.6	32.7			15.1	58.8	2.8			11.3	11.3	58.8
Actuated g/C Ratio	0.23	0.56			0.26	1.00	0.05			0.19	0.19	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0			6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0			3.0	3.0	
Lane Grp Cap (vph)	399	1921			887	1759	161			643	349	1599
v/s Ratio Prot	c0.11	0.15			c0.13		0.00			c0.13	0.00	
v/s Ratio Perm						0.17						c0.21
v/c Ratio	0.48	0.27			0.49	0.17	0.02			0.68	0.00	0.21
Uniform Delay, d1	19.5	6.8			18.6	0.0	26.7			22.1	19.2	0.0
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1			0.4	0.2	0.1			3.0	0.0	0.3
Delay (s)	20.5	6.9			19.0	0.2	26.8			25.1	19.2	0.3
Level of Service	C	A			B	A	C			C	B	A
Approach Delay (s/veh)		10.6			11.3			26.8			14.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	737	3	1	756	68	4	0	1	69	0	427
Future Volume (vph)	342	737	3	1	756	68	4	0	1	69	0	427
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1787	3333	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.705			0.752	
Satd. Flow (perm)	1787	3333	0	1668	3296	0	0	1340	1830	0	1354	1531
Satd. Flow (RTOR)		1			8				150			497
Adj. Flow (vph)	402	867	4	1	822	74	8	0	2	80	0	497
Lane Group Flow (vph)	402	871	0	1	896	0	0	8	2	0	80	497
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.69	0.35		0.01	0.69			0.04	0.01		0.43	0.78
Control Delay (s/veh)	32.9	4.5		41.0	24.8			37.3	0.0		45.4	13.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	32.9	4.5		41.0	24.8			37.3	0.0		45.4	13.7
Queue Length 50th (ft)	194	60		1	207			4	0		42	0
Queue Length 95th (ft)	287	130		6	303			10	0		91	79
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	738	2715		142	1566			195	395		197	647
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	0.54	0.32		0.01	0.57			0.04	0.01		0.41	0.77

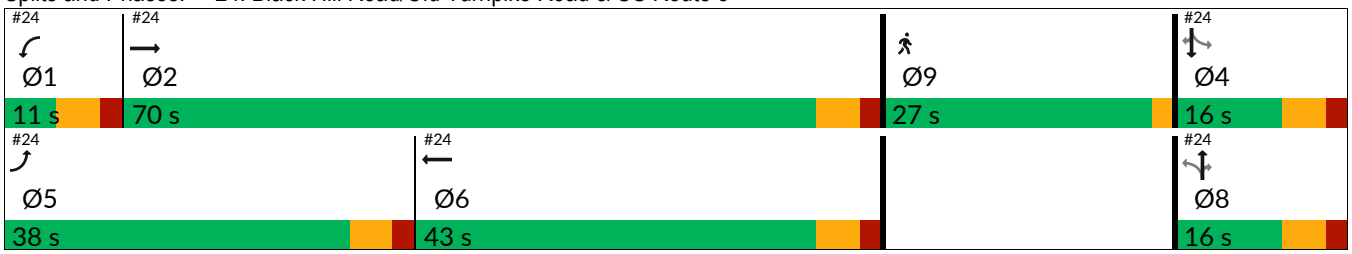
Intersection Summary
Cycle Length: 124

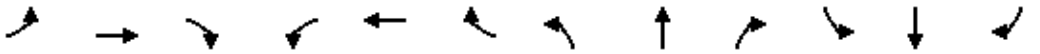
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 84.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

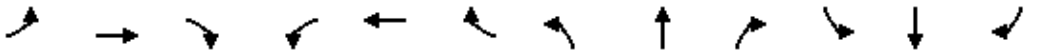




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	737	3	1	756	68	4	0	1	69	0	427
Future Volume (vph)	342	737	3	1	756	68	4	0	1	69	0	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3334		1668	3295			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.75	1.00
Satd. Flow (perm)	1787	3334		1668	3295			1339	1830		1355	1531
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.92	0.92	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	402	867	4	1	822	74	8	0	2	80	0	497
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	2	0	0	433
Lane Group Flow (vph)	402	871	0	1	891	0	0	8	0	0	80	64
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	25.3	60.7		0.9	36.3			9.4	9.4		9.4	9.4
Effective Green, g (s)	27.3	62.7		2.9	38.3			11.4	11.4		11.4	11.4
Actuated g/C Ratio	0.31	0.70		0.03	0.43			0.13	0.13		0.13	0.13
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	548	2348		54	1417			171	234		173	196
v/s Ratio Prot	c0.22	0.26		0.00	c0.27							
v/s Ratio Perm								0.01	0.00		c0.06	0.04
v/c Ratio	0.73	0.37		0.02	0.63			0.05	0.00		0.46	0.32
Uniform Delay, d1	27.6	5.3		41.7	19.8			34.0	33.8		36.0	35.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.1	0.1		0.1	0.9			0.1	0.0		2.0	1.0
Delay (s)	32.6	5.4		41.8	20.7			34.1	33.8		37.9	36.3
Level of Service	C	A		D	C			C	C		D	D
Approach Delay (s/veh)		14.0			20.7			34.1			36.5	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1044	3	4	1158	55	1	0	1	37	0	20
Future Volume (vph)	11	1044	3	4	1158	55	1	0	1	37	0	20
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4964	0	1668	3431	0	1805	1615	0	1829	1583	0
Flt Permitted	0.950			0.950			0.738			0.755		
Satd. Flow (perm)	1728	4964	0	1668	3431	0	1402	1615	0	1453	1583	0
Satd. Flow (RTOR)					6			769			179	
Adj. Flow (vph)	12	1135	3	4	1273	60	4	0	4	53	0	29
Lane Group Flow (vph)	12	1138	0	4	1333	0	4	4	0	53	29	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	33.0		37.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.4%	25.8%		28.9%			25.8%	25.8%		25.8%	25.8%	
Maximum Green (s)	6.0	27.0		31.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.11	0.82		0.01	0.55		0.02	0.00		0.20	0.07	
Control Delay (s/veh)	59.2	49.7		37.8	1.8		40.0	0.0		44.6	0.3	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.2	49.7		37.8	2.0		40.0	0.0		44.6	0.3	
Queue Length 50th (ft)	10	332		2	18		3	0		38	0	
Queue Length 95th (ft)	31	#462		m3	43		3	0		57	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	108	1390		437	2426		317	960		329	497	
Starvation Cap Reductn	0	0		0	312		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	0.11	0.82		0.01	0.63		0.01	0.00		0.16	0.06	

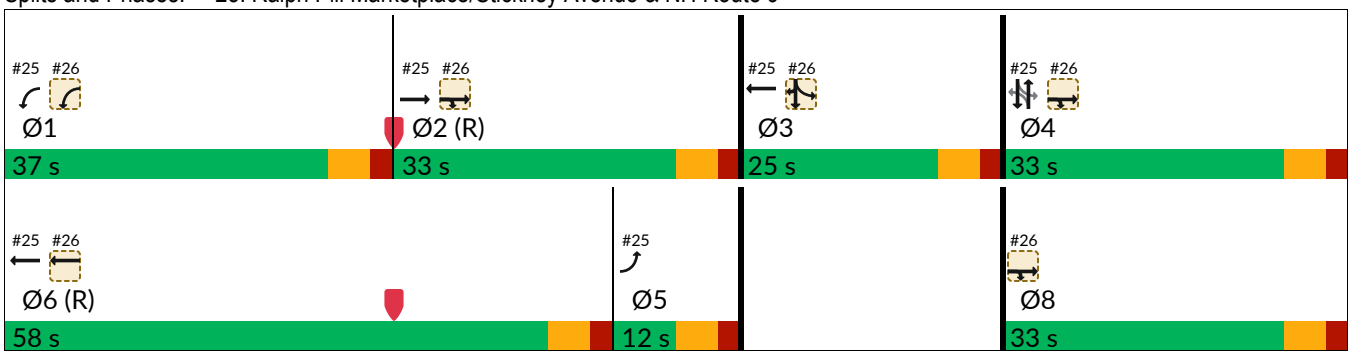
Intersection Summary
Cycle Length: 128

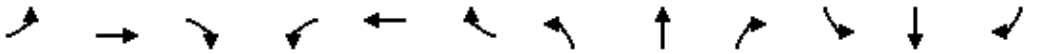
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	25.0	58.0	33.0
Total Split (%)	20%	45%	26%
Maximum Green (s)	19.0	52.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
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.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

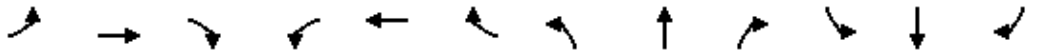




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1044	3	4	1158	55	1	0	1	37	0	20
Future Volume (vph)	11	1044	3	4	1158	55	1	0	1	37	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4962		1668	3432		1805	1615		1829	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.76	1.00	
Satd. Flow (perm)	1728	4962		1668	3432		1403	1615		1454	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.70	0.70	0.70
Adj. Flow (vph)	12	1135	3	4	1273	60	4	0	4	53	0	29
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	24	0
Lane Group Flow (vph)	12	1138	0	4	1331	0	4	1	0	53	5	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	33.9		30.0	80.5		21.1	21.1		21.1	21.1	
Effective Green, g (s)	4.4	35.9		32.0	84.5		23.1	23.1		23.1	23.1	
Actuated g/C Ratio	0.03	0.28		0.25	0.66		0.18	0.18		0.18	0.18	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	59	1391		417	2265		253	291		262	285	
v/s Ratio Prot	0.01	c0.23		0.00	c0.39			0.00			0.00	
v/s Ratio Perm							0.00			c0.04		
v/c Ratio	0.20	0.82		0.01	0.59		0.02	0.00		0.20	0.02	
Uniform Delay, d1	60.1	43.0		36.1	12.1		43.1	43.0		44.6	43.1	
Progression Factor	1.00	1.00		1.08	0.14		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	5.5		0.0	0.3		0.0	0.0		0.4	0.0	
Delay (s)	61.8	48.5		38.9	2.0		43.1	43.0		45.0	43.2	
Level of Service	E	D		D	A		D	D		D	D	
Approach Delay (s/veh)		48.6			2.1			43.1			44.3	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	955	128	630	1037	0	0	0	0	213	0	180
Future Volume (vph)	0	955	128	630	1037	0	0	0	0	213	0	180
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			139									179
Adj. Flow (vph)	0	1038	139	677	1115	0	0	0	0	245	0	207
Lane Group Flow (vph)	0	1038	139	677	1115	0	0	0	0	0	245	207
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				37.0	58.0					25.0	25.0	25.0
Total Split (%)				28.9%	45.3%					19.5%	19.5%	19.5%
Maximum Green (s)				31.0	52.0					19.0	19.0	19.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.45	0.15	0.84	0.64						0.84	0.50
Control Delay (s/veh)		3.0	0.8	63.2	14.0						76.1	14.7
Queue Delay		0.3	0.6	50.7	1.0						1.6	0.0
Total Delay (s/veh)		3.3	1.4	113.9	15.0						77.6	14.7
Queue Length 50th (ft)		9	0	280	196						201	20
Queue Length 95th (ft)		48	m0	326	295						#322	87
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2515	986	848	1748						293	411
Starvation Cap Reductn		773	568	234	361						0	0
Spillback Cap Reductn		160	0	0	0						8	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.60	0.33	1.10	0.80						0.86	0.50

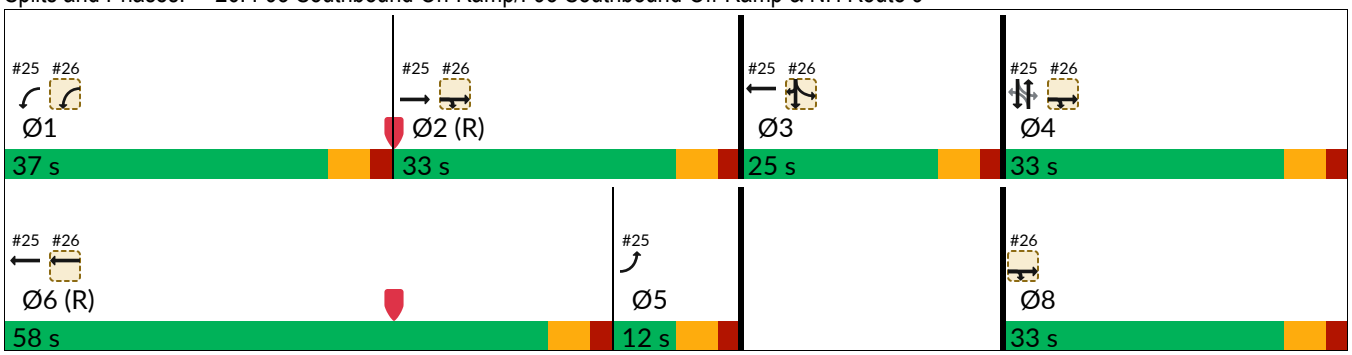
Intersection Summary
Cycle Length: 128

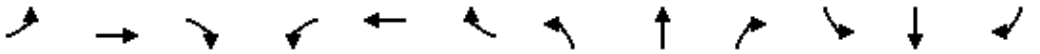
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	33.0	33.0	12.0	33.0
Total Split (%)	26%	26%	9%	26%
Maximum Green (s)	27.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
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.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

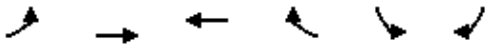




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	955	128	630	1037	0	0	0	0	213	0	180
Future Volume (vph)	0	955	128	630	1037	0	0	0	0	213	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4964	1812	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4964	1812	3236	3336						1787	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.90	0.90	0.90	0.87	0.87	0.87
Adj. Flow (vph)	0	1038	139	677	1115	0	0	0	0	245	0	207
RTOR Reduction (vph)	0	0	75	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	1038	64	677	1115	0	0	0	0	0	245	57
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		55.0	55.0	30.0	61.5						19.0	19.0
Effective Green, g (s)		59.0	59.0	32.0	63.5						21.0	21.0
Actuated g/C Ratio		0.46	0.46	0.25	0.50						0.16	0.16
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2288	835	809	1654						293	262
v/s Ratio Prot		c0.21	0.04	c0.21	c0.33						c0.14	0.04
v/s Ratio Perm												
v/c Ratio		0.45	0.08	0.84	0.67						0.84	0.22
Uniform Delay, d1		23.5	19.3	45.5	24.4						51.8	46.4
Progression Factor		0.21	0.36	1.19	0.51						1.00	1.00
Incremental Delay, d2		0.1	0.0	6.9	2.0						18.3	0.4
Delay (s)		5.1	6.9	60.9	14.5						70.1	46.8
Level of Service		A	A	E	B						E	D
Approach Delay (s/veh)		5.3			32.0			0.0			59.4	
Approach LOS		A			C			A			E	

Intersection Summary				
HCM 2000 Control Delay (s/veh)	26.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	58.2%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

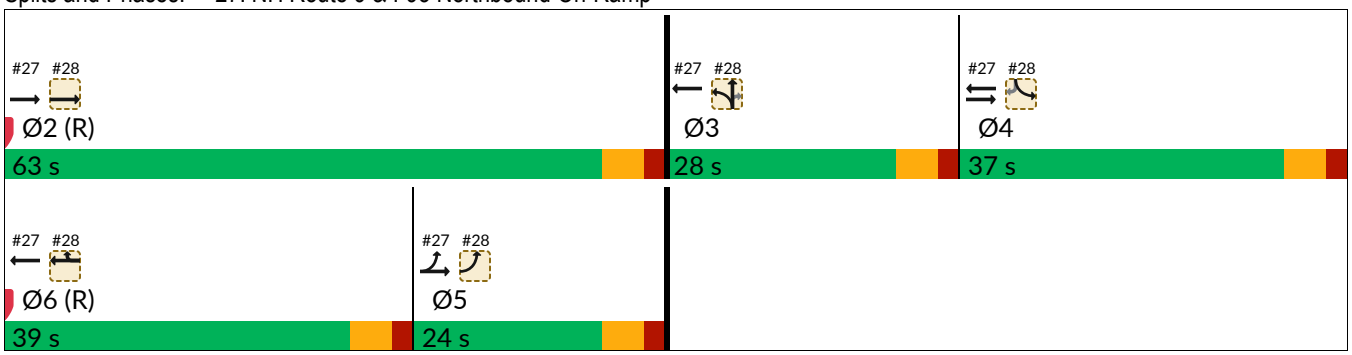


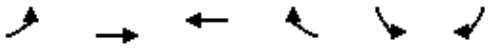
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	111	1057	1667	224	0	0				
Future Volume (vph)	111	1057	1667	224	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				114						
Adj. Flow (vph)	118	1124	1755	236	0	0				
Lane Group Flow (vph)	118	1124	1755	236	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	24.0						63.0	28.0	37.0	39.0
Total Split (%)	18.8%						49%	22%	29%	30%
Maximum Green (s)	18.0						57.0	22.0	31.0	33.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	Min	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.45	0.45	0.47	0.14						
Control Delay (s/veh)	37.8	10.5	3.1	0.0						
Queue Delay	3.5	1.8	4.8	0.0						
Total Delay (s/veh)	41.3	12.3	7.9	0.0						
Queue Length 50th (ft)	62	130	74	0						
Queue Length 95th (ft)	m105	252	m65	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	260	2502	3744	1652						
Starvation Cap Reductn	77	1155	1904	0						
Spillback Cap Reductn	0	121	993	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.64	0.83	0.95	0.14						

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

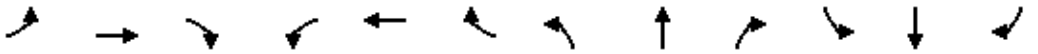




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	111	1057	1667	224	0	0
Future Volume (vph)	111	1057	1667	224	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.94	0.94	0.95	0.95	0.90	0.90
Adj. Flow (vph)	118	1124	1755	236	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	118	1124	1755	236	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	18.0	94.0	98.0	128.0		
Effective Green, g (s)	20.0	96.0	100.0	128.0		
Actuated g/C Ratio	0.16	0.75	0.78	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	260	2502	3744	1652		
v/s Ratio Prot	0.07	c0.34	c0.37			
v/s Ratio Perm				0.14		
v/c Ratio	0.45	0.45	0.47	0.14		
Uniform Delay, d1	49.0	6.0	4.8	0.0		
Progression Factor	0.66	1.63	0.63	1.00		
Incremental Delay, d2	1.1	0.1	0.0	0.0		
Delay (s)	33.5	9.9	3.0	0.0		
Level of Service	C	A	A	A		
Approach Delay (s/veh)		12.2	2.7		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

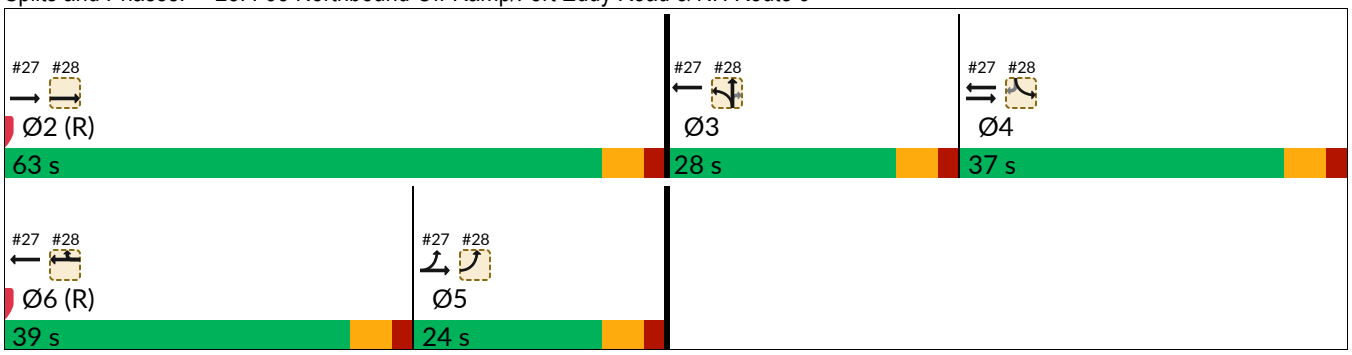


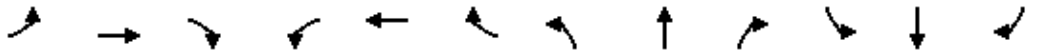
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	633	0	0	1028	498	132	329	555	440	0	731
Future Volume (vph)	424	633	0	0	1028	498	132	329	555	440	0	731
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.931	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1787	3188	1504	3502	0	1669
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1787	3188	1504	3502	0	1669
Satd. Flow (RTOR)						498		143	143			386
Adj. Flow (vph)	437	653	0	0	1105	535	152	378	638	468	0	778
Lane Group Flow (vph)	437	653	0	0	1105	535	152	697	319	468	0	778
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	24.0	63.0			39.0	39.0	28.0	28.0	28.0	37.0		37.0
Total Split (%)	18.8%	49.2%			30.5%	30.5%	21.9%	21.9%	21.9%	28.9%		28.9%
Maximum Green (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		0.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lead/Lag	Lag				Lead	Lead	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	Min	Min	Min	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.87	0.41			1.17	0.66	0.45	0.98	0.80	0.52		1.12
Control Delay (s/veh)	52.8	16.2			128.4	16.2	51.2	69.8	43.2	43.1		94.3
Queue Delay	39.7	0.8			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	92.5	17.0			128.4	16.2	51.2	69.8	43.2	43.1		94.3
Queue Length 50th (ft)	134	108			~565	112	114	263	160	172		~482
Queue Length 95th (ft)	#261	207			#710	m185	177	#372	#294	226		#729
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	505	1592			944	813	335	713	398	902		696
Starvation Cap Reductn	97	605			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.07	0.66			1.17	0.66	0.45	0.98	0.80	0.52		1.12

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

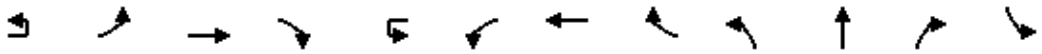




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	633	0	0	1028	498	132	329	555	440	0	731
Future Volume (vph)	424	633	0	0	1028	498	132	329	555	440	0	731
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1787	3189	1504	3502		1669
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1787	3189	1504	3502		1669
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	437	653	0	0	1105	535	152	378	638	468	0	778
RTOR Reduction (vph)	0	0	0	0	0	362	0	116	116	0	0	293
Lane Group Flow (vph)	437	653	0	0	1105	173	152	581	203	468	0	485
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
Effective Green, g (s)	20.0	59.0			35.0	35.0	24.0	24.0	24.0	33.0		31.0
Actuated g/C Ratio	0.16	0.46			0.27	0.27	0.19	0.19	0.19	0.26		0.24
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	505	1592			944	451	335	597	282	902		404
v/s Ratio Prot	c0.14	0.19			c0.32	0.10	0.09	c0.18		0.13		
v/s Ratio Perm									0.13			c0.29
v/c Ratio	0.87	0.41			1.17	0.38	0.45	0.97	0.72	0.52		1.20
Uniform Delay, d1	52.7	22.9			46.5	37.7	46.2	51.7	48.8	40.7		48.5
Progression Factor	0.68	0.67			1.06	2.73	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	13.3	0.7			85.1	1.8	1.0	29.9	8.5	0.5		112.2
Delay (s)	48.9	16.0			134.3	104.9	47.2	81.5	57.3	41.2		160.7
Level of Service	D	B			F	F	D	F	E	D		F
Approach Delay (s/veh)		29.2			124.7			70.5			115.8	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	90.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1131	415	1	26	1197	3	279	0	95	15
Future Volume (vph)	1	81	1131	415	1	26	1197	3	279	0	95	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950				0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	3455	0	0	1805	1669	0
Flt Permitted		0.950				0.950				0.672		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	3455	0	0	1277	1669	0
Satd. Flow (RTOR)				233							110	
Adj. Flow (vph)	1	84	1166	428	1	29	1315	3	324	0	110	22
Lane Group Flow (vph)	0	85	1166	428	0	30	1318	0	0	324	110	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	12.0	21.0		33.0	33.0	33.0	33.0
Total Split (s)	14.0	14.0	76.0	76.0	14.0	14.0	76.0		38.0	38.0	38.0	38.0
Total Split (%)	10.9%	10.9%	59.4%	59.4%	10.9%	10.9%	59.4%		29.7%	29.7%	29.7%	29.7%
Maximum Green (s)	8.0	8.0	70.0	70.0	8.0	8.0	70.0		32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0			8.0		20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0			0		0	0	0	0
v/c Ratio		0.62	0.59	0.45		0.24	0.72			0.85	0.19	
Control Delay (s/veh)		65.9	25.2	12.4		53.6	33.5			64.2	7.1	
Queue Delay		0.0	0.7	0.0		0.0	0.6			0.0	3.0	
Total Delay (s/veh)		65.9	25.9	12.4		53.6	34.1			64.2	10.1	
Queue Length 50th (ft)		63	468	162		24	370			244	0	
Queue Length 95th (ft)		m106	m484	m205		m50	650			#421	40	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150						
Base Capacity (vph)		140	2045	978		135	1943			380	573	
Starvation Cap Reductn		0	0	0		0	262			0	0	
Spillback Cap Reductn		0	489	0		0	0			0	372	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.61	0.75	0.44		0.22	0.78			0.85	0.55	

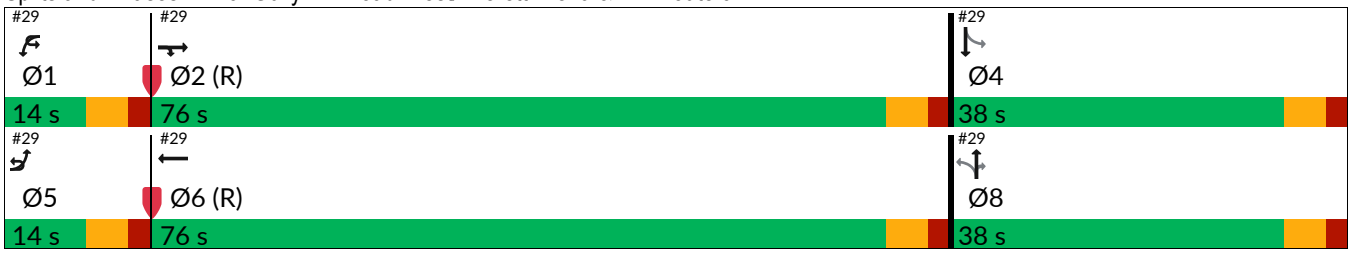
Intersection Summary
Cycle Length: 128

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Lane Util. Factor	1.00	1.00
Frt	0.897	
Flt Protected	0.989	
Satd. Flow (prot)	1729	0
Flt Permitted	0.833	
Satd. Flow (perm)	1456	0
Satd. Flow (RTOR)	73	
Adj. Flow (vph)	1	73
Lane Group Flow (vph)	96	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	33.0	
Total Split (s)	38.0	
Total Split (%)	29.7%	
Maximum Green (s)	32.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	4.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	20.0	
Pedestrian Calls (#/hr)	0	
v/c Ratio	0.20	
Control Delay (s/veh)	12.7	
Queue Delay	4.4	
Total Delay (s/veh)	17.0	
Queue Length 50th (ft)	14	
Queue Length 95th (ft)	31	
Internal Link Dist (ft)	277	
Turn Bay Length (ft)		
Base Capacity (vph)	484	
Starvation Cap Reductn	0	
Spillback Cap Reductn	321	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.59	

Intersection Summary

Actuated Cycle Length: 128
Offset: 105 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
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.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



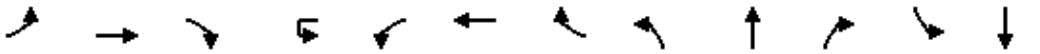
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1131	415	1	26	1197	3	279	0	95	15
Future Volume (vph)	1	81	1131	415	1	26	1197	3	279	0	95	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95			1.00	1.00	
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	3454			1805	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.67	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	3454			1276	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1166	428	1	29	1315	3	324	0	110	22
RTOR Reduction (vph)	0	0	0	103	0	0	0	0	0	0	77	0
Lane Group Flow (vph)	0	85	1166	325	0	30	1318	0	0	324	33	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Actuated Green, G (s)		8.3	69.2	69.2		4.7	65.6			36.1	36.1	
Effective Green, g (s)		10.3	71.2	71.2		6.7	67.6			38.1	38.1	
Actuated g/C Ratio		0.08	0.56	0.56		0.05	0.53			0.30	0.30	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0			6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)		139	1921	829		90	1824			379	496	
v/s Ratio Prot		c0.05	c0.34	0.22		0.02	c0.38					
v/s Ratio Perm										c0.25	0.02	
v/c Ratio		0.61	0.61	0.39		0.33	0.72			0.85	0.07	
Uniform Delay, d1		56.9	19.0	16.1		58.5	23.0			42.3	32.2	
Progression Factor		0.88	1.31	1.55		0.88	1.35			1.00	1.00	
Incremental Delay, d2		6.2	1.1	1.1		2.0	2.3			16.9	0.1	
Delay (s)		56.1	26.0	26.0		53.5	33.3			59.2	32.3	
Level of Service		E	C	C		D	C			E	C	
Approach Delay (s/veh)			27.5				33.7			52.4		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.83	
Satd. Flow (perm)	1456	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	51	0
Lane Group Flow (vph)	45	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	36.1	
Effective Green, g (s)	38.1	
Actuated g/C Ratio	0.30	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	433	
v/s Ratio Prot		
v/s Ratio Perm	0.03	
v/c Ratio	0.10	
Uniform Delay, d1	32.6	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	32.7	
Level of Service	C	
Approach Delay (s/veh)	32.7	
Approach LOS	C	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1155	81	1	233	1062	27	152	5	201	14	0
Future Volume (vph)	6	1155	81	1	233	1062	27	152	5	201	14	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.990				0.996			0.854			0.850
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3421	0	0	1728	3441	0	1787	1607	0	1793	1605
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3421	0	0	1728	3441	0	1787	1607	0	1793	1605
Satd. Flow (RTOR)		7				2			228			421
Adj. Flow (vph)	6	1203	84	1	248	1130	29	173	6	228	19	0
Lane Group Flow (vph)	6	1287	0	0	249	1159	0	173	234	0	19	17
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	12.0	57.0		14.0	14.0	59.0		14.0	16.0		12.0	14.0
Total Split (%)	9.4%	44.5%		10.9%	10.9%	46.1%		10.9%	12.5%		9.4%	10.9%
Maximum Green (s)	6.0	51.0		8.0	8.0	53.0		8.0	10.0		6.0	8.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.05	0.90			0.57	0.50		0.48	0.47		0.15	0.03
Control Delay (s/veh)	44.5	57.8			49.4	12.2		51.1	9.8		58.0	0.2
Queue Delay	0.0	33.3			0.0	0.0		4.2	0.0		0.0	0.0
Total Delay (s/veh)	44.5	91.1			49.4	12.2		55.3	9.8		58.0	0.2
Queue Length 50th (ft)	4	597			178	167		131	4		16	0
Queue Length 95th (ft)	m7	#685			#295	407		200	71		35	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	112	1445			435	2340		357	493		127	513
Starvation Cap Reductn	0	239			0	0		0	0		0	0
Spillback Cap Reductn	0	0			0	41		117	0		0	45
Storage Cap Reductn	0	0			0	0		0	0		0	0
Reduced v/c Ratio	0.05	1.07			0.57	0.50		0.72	0.47		0.15	0.04

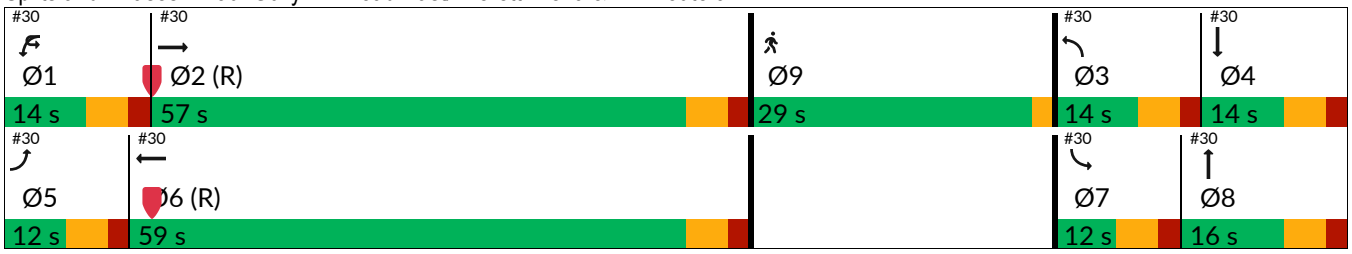
Intersection Summary
Cycle Length: 128

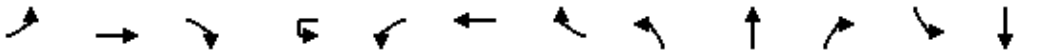
Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		23%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 128
Offset: 48 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
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.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9





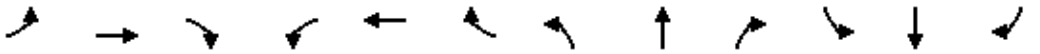
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1155	81	1	233	1062	27	152	5	201	14	0
Future Volume (vph)	6	1155	81	1	233	1062	27	152	5	201	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1728	3421			1728	3442		1787	1606		1793	1605
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1728	3421			1728	3442		1787	1606		1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1203	84	1	248	1130	29	173	6	228	19	0
RTOR Reduction (vph)	0	4	0	0	0	1	0	0	184	0	0	16
Lane Group Flow (vph)	6	1283	0	0	249	1158	0	173	50	0	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.4	47.8			30.2	76.6		23.6	22.7		3.3	2.4
Effective Green, g (s)	3.4	49.8			32.2	78.6		25.6	24.7		5.3	4.4
Actuated g/C Ratio	0.03	0.39			0.25	0.61		0.20	0.19		0.04	0.03
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45	1330			434	2113		357	309		74	55
v/s Ratio Prot	0.00	c0.37			c0.14	0.34		c0.10	c0.03		0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.13	0.96			0.57	0.55		0.48	0.16		0.26	0.01
Uniform Delay, d1	60.9	38.2			41.9	14.4		45.4	43.0		59.4	59.7
Progression Factor	0.78	1.44			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	15.8			1.8	1.0		1.0	0.2		1.8	0.1
Delay (s)	48.6	70.7			43.7	15.4		46.4	43.3		61.3	59.8
Level of Service	D	E			D	B		D	D		E	E
Approach Delay (s/veh)		70.6				20.4			44.6			60.6
Approach LOS		E				C			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

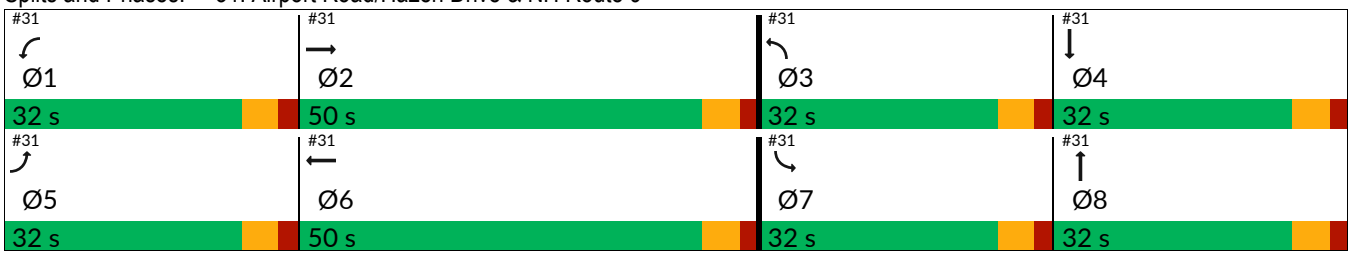


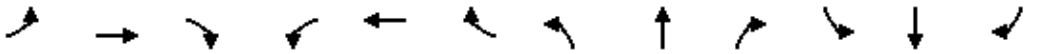
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1026	210	146	1066	53	186	59	213	18	44	68
Future Volume (vph)	50	1026	210	146	1066	53	186	59	213	18	44	68
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			182			157			242			157
Adj. Flow (vph)	53	1080	221	159	1159	58	211	67	242	28	68	105
Lane Group Flow (vph)	53	1080	221	159	1159	58	211	67	242	28	68	105
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.29	0.75	0.14	0.55	0.66	0.04	0.64	0.16	0.15	0.18	0.34	0.07
Control Delay (s/veh)	54.7	33.7	0.2	52.4	26.0	0.0	52.3	37.5	0.2	54.7	54.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.7	33.7	0.2	52.4	26.0	0.0	52.3	37.5	0.2	54.7	54.5	0.1
Queue Length 50th (ft)	36	348	0	108	345	0	143	40	0	19	46	0
Queue Length 95th (ft)	85	#556	0	195	531	0	242	84	0	39	71	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	482	1533	1599	482	1757	1652	467	516	1599	471	496	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.70	0.14	0.33	0.66	0.04	0.45	0.13	0.15	0.06	0.14	0.07

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 108.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	1026	210	146	1066	53	186	59	213	18	44	68
Future Volume (vph)	50	1026	210	146	1066	53	186	59	213	18	44	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.65	0.65	0.65
Adj. Flow (vph)	53	1080	221	159	1159	58	211	67	242	28	68	105
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	53	1080	221	159	1159	58	211	67	242	28	68	105
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.2	44.7	111.9	15.4	52.9	111.9	18.6	23.2	111.9	4.6	9.2	111.9
Effective Green, g (s)	9.2	46.7	111.9	17.4	54.9	111.9	20.6	25.2	111.9	6.6	11.2	111.9
Actuated g/C Ratio	0.08	0.42	1.00	0.16	0.49	1.00	0.18	0.23	1.00	0.06	0.10	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	146	1441	1599	277	1695	1652	318	409	1599	102	183	1561
v/s Ratio Prot	0.03	c0.31		c0.09	c0.34		c0.12	0.04		0.02	c0.04	
v/s Ratio Perm			0.14			0.04			0.15			0.07
v/c Ratio	0.36	0.75	0.14	0.57	0.68	0.04	0.66	0.16	0.15	0.27	0.37	0.07
Uniform Delay, d1	48.6	27.6	0.0	43.8	21.8	0.0	42.4	34.9	0.0	50.4	47.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	2.2	0.2	2.9	1.2	0.0	5.1	0.2	0.2	1.5	1.3	0.1
Delay (s)	50.1	29.8	0.2	46.7	23.0	0.0	47.6	35.1	0.2	51.8	48.3	0.1
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s/veh)		25.8			24.8			23.9			23.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	59	878	34	29	1001	211	109	111	48	278	68
Future Volume (vph)	1	59	878	34	29	1001	211	109	111	48	278	68
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.994			0.974			0.955			0.943
Flt Protected		0.950			0.950			0.950			0.950	0.986
Satd. Flow (prot)	0	1787	3316	0	1668	3365	0	1685	1694	0	1600	1678
Flt Permitted		0.950			0.950			0.950			0.950	0.986
Satd. Flow (perm)	0	1787	3316	0	1668	3365	0	1685	1694	0	1600	1678
Satd. Flow (RTOR)			3			16			13			18
Adj. Flow (vph)	1	63	934	36	31	1076	227	158	161	70	299	73
Lane Group Flow (vph)	0	64	970	0	31	1303	0	158	231	0	233	225
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.32	0.76		0.20	1.12		0.47	0.66		0.68	0.60
Control Delay (s/veh)		47.9	33.6		47.4	97.1		41.9	46.2		49.4	42.0
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		47.9	33.6		47.4	97.1		41.9	46.2		49.4	42.0
Queue Length 50th (ft)		41	319		20	~560		93	135		153	133
Queue Length 95th (ft)		83	#430		50	#728		120	161		#270	226
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		307	1272		286	1168		375	387		355	387
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	0.76		0.11	1.12		0.42	0.60		0.66	0.58

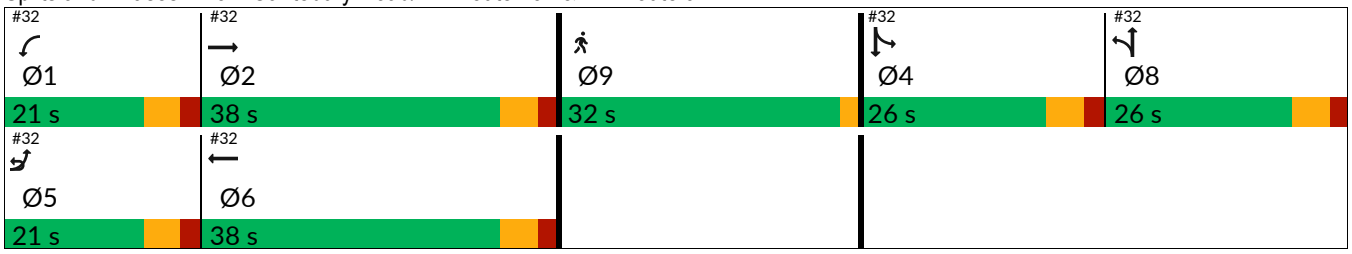
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	80	
Future Volume (vph)	80	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	86	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	59	878	34	29	1001	211	109	111	48	278	68
Future Volume (vph)	1	59	878	34	29	1001	211	109	111	48	278	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.94
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (prot)		1787	3317		1668	3365		1685	1693		1600	1677
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (perm)		1787	3317		1668	3365		1685	1693		1600	1677
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.69	0.69	0.69	0.93	0.93
Adj. Flow (vph)	1	63	934	36	31	1076	227	158	161	70	299	73
RTOR Reduction (vph)	0	0	2	0	0	10	0	0	10	0	0	14
Lane Group Flow (vph)	0	64	968	0	31	1293	0	158	221	0	233	211
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		7.5	36.3		4.8	33.6		18.0	18.0		19.4	19.4
Effective Green, g (s)		9.5	38.3		6.8	35.6		20.0	20.0		21.4	21.4
Actuated g/C Ratio		0.09	0.37		0.07	0.35		0.20	0.20		0.21	0.21
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		165	1239		110	1168		328	330		334	350
v/s Ratio Prot		c0.04	c0.29		0.02	c0.38		0.09	c0.13		c0.15	0.13
v/s Ratio Perm												
v/c Ratio		0.39	0.78		0.28	1.11		0.48	0.67		0.70	0.60
Uniform Delay, d1		43.8	28.4		45.5	33.4		36.6	38.2		37.6	36.7
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.5	3.3		1.4	60.6		1.1	5.1		6.2	2.9
Delay (s)		45.3	31.7		46.9	94.1		37.8	43.2		43.8	39.6
Level of Service		D	C		D	F		D	D		D	D
Approach Delay (s/veh)			32.5			93.0			41.0			41.7
Approach LOS			C			F			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	60.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	102.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	80
Future Volume (vph)	80
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	86
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

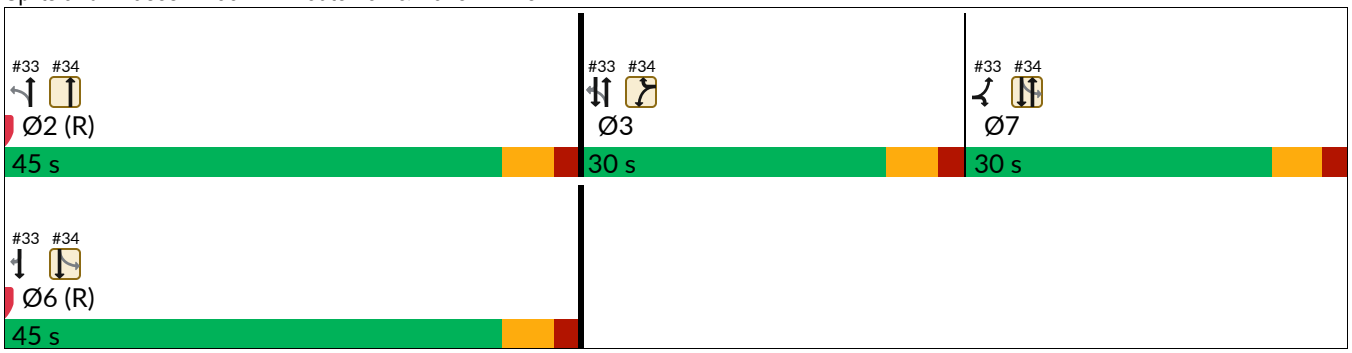
Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	136	20	12	391	556	138			
Future Volume (vph)	136	20	12	391	556	138			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.998					
Satd. Flow (prot)	1805	1615	0	1815	1900	1561			
Flt Permitted	0.950			0.979					
Satd. Flow (perm)	1805	1615	0	1780	1900	1561			
Satd. Flow (RTOR)		27				142			
Adj. Flow (vph)	184	27	16	508	573	142			
Lane Group Flow (vph)	184	27	0	524	573	142			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.45	0.07		0.42	0.43	0.13			
Control Delay (s/veh)	38.1	11.7		8.6	9.8	3.3			
Queue Delay	0.0	0.0		0.0	0.5	0.0			
Total Delay (s/veh)	38.1	11.7		8.6	10.3	3.3			
Queue Length 50th (ft)	102	0		153	197	14			
Queue Length 95th (ft)	136	16		166	277	33			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	451	424		1247	1331	1136			
Starvation Cap Reductn	0	0		0	351	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.41	0.06		0.42	0.58	0.13			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	136	20	12	391	556	138
Future Volume (vph)	136	20	12	391	556	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1805	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	1805	1615		1781	1900	1561
Peak-hour factor, PHF	0.74	0.74	0.77	0.77	0.97	0.97
Adj. Flow (vph)	184	27	16	508	573	142
RTOR Reduction (vph)	0	21	0	0	0	43
Lane Group Flow (vph)	184	6	0	524	573	99
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	21.7	21.7		71.3	71.3	71.3
Effective Green, g (s)	23.7	23.7		73.3	73.3	73.3
Actuated g/C Ratio	0.23	0.23		0.70	0.70	0.70
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	407	364		1243	1326	1089
v/s Ratio Prot	c0.10	0.00			c0.30	
v/s Ratio Perm				0.29		0.06
v/c Ratio	0.45	0.02		0.42	0.43	0.09
Uniform Delay, d1	35.1	31.6		6.8	6.9	5.1
Progression Factor	1.00	1.00		1.00	1.17	2.99
Incremental Delay, d2	0.8	0.0		0.2	0.2	0.0
Delay (s)	35.9	31.6		7.0	8.2	15.3
Level of Service	D	C		A	A	B
Approach Delay (s/veh)	35.3			7.0	9.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

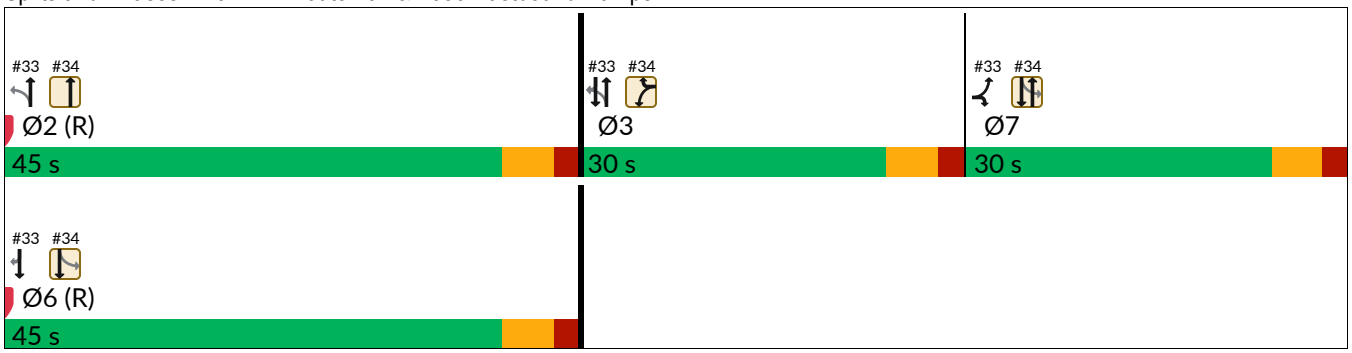
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	278	70	446	82	37	423			
Future Volume (vph)	278	70	446	82	37	423			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.977						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3376	0	1728	1818			
Flt Permitted	0.950				0.376				
Satd. Flow (perm)	1805	1615	3376	0	684	1818			
Satd. Flow (RTOR)		73	44						
Adj. Flow (vph)	296	74	551	101	39	450			
Lane Group Flow (vph)	296	74	652	0	39	450			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.60	0.15	0.30		0.09	0.38			
Control Delay (s/veh)	38.6	8.1	5.5		8.0	10.1			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	38.6	8.1	5.7		8.0	10.1			
Queue Length 50th (ft)	154	0	71		11	161			
Queue Length 95th (ft)	274	36	58		20	171			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	513	511	2315		466	1239			
Starvation Cap Reductn	0	0	773		0	0			
Spillback Cap Reductn	0	0	0		0	5			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.58	0.14	0.42		0.08	0.36			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

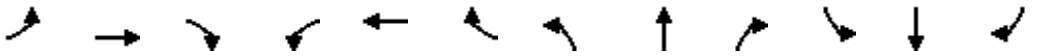


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	278	70	446	82	37	423
Future Volume (vph)	278	70	446	82	37	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3375		1728	1818
Flt Permitted	0.95	1.00	1.00		0.38	1.00
Satd. Flow (perm)	1805	1615	3375		684	1818
Peak-hour factor, PHF	0.94	0.94	0.81	0.81	0.94	0.94
Adj. Flow (vph)	296	74	551	101	39	450
RTOR Reduction (vph)	0	53	15	0	0	0
Lane Group Flow (vph)	296	21	637	0	39	450
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	26.8	26.8	66.2		66.2	66.2
Effective Green, g (s)	28.8	28.8	68.2		68.2	68.2
Actuated g/C Ratio	0.27	0.27	0.65		0.65	0.65
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	495	442	2192		444	1180
v/s Ratio Prot	c0.16	0.01	0.19			c0.25
v/s Ratio Perm					0.06	
v/c Ratio	0.60	0.05	0.29		0.09	0.38
Uniform Delay, d1	33.1	28.0	7.9		6.8	8.6
Progression Factor	1.00	1.00	0.67		1.00	1.00
Incremental Delay, d2	1.9	0.0	0.1		0.1	0.2
Delay (s)	35.0	28.1	5.4		6.9	8.8
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	33.6		5.4			8.6
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

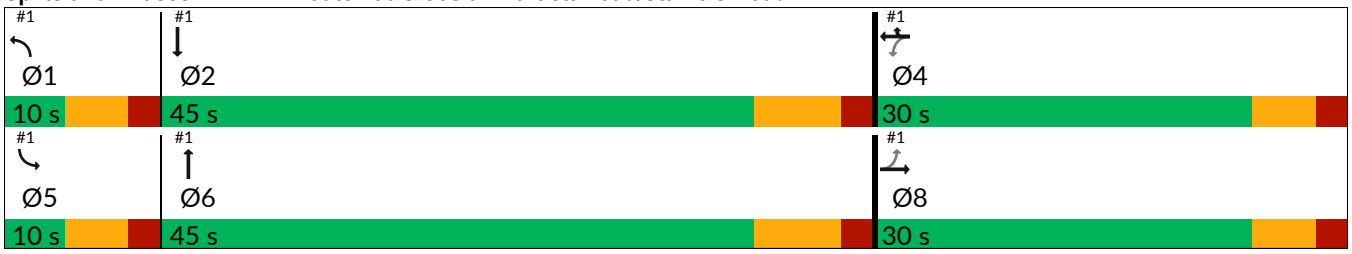
2027 No-Build Weekday Morning Peak-Hour

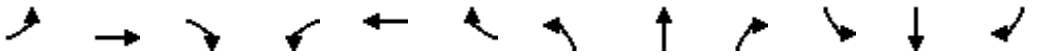


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	109	0	16	0	333	34	28	1089	3
Future Volume (vph)	3	1	8	109	0	16	0	333	34	28	1089	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.907				0.850		0.986				
Flt Protected		0.988			0.950					0.950		
Satd. Flow (prot)	0	1622	0	0	1736	1553	1776	3327	0	1736	3471	0
Flt Permitted		0.917			0.747					0.950		
Satd. Flow (perm)	0	1505	0	0	1365	1553	1776	3327	0	1736	3471	0
Satd. Flow (RTOR)		11				135		17				
Adj. Flow (vph)	4	1	11	133	0	20	0	392	40	33	1266	3
Lane Group Flow (vph)	0	16	0	0	133	20	0	432	0	33	1269	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.40	0.04		0.21		0.25	0.54	
Control Delay (s/veh)		12.5			23.5	0.2		8.5		33.2	8.1	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		12.5			23.5	0.2		8.5		33.2	8.1	
Queue Length 50th (ft)		1			37	0		30		11	126	
Queue Length 95th (ft)		12			82	0		83		38	206	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		751			676	837		2449		132	2551	
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			0.20	0.02		0.18		0.25	0.50	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 54.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

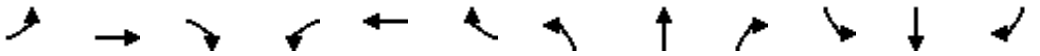
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	109	0	16	0	333	34	28	1089	3
Future Volume (vph)	3	1	8	109	0	16	0	333	34	28	1089	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.91			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1621			1736	1553		3327		1736	3470	
Flt Permitted		0.92			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1505			1365	1553		3327		1736	3470	
Peak-hour factor, PHF	0.75	0.75	0.75	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86
Adj. Flow (vph)	4	1	11	133	0	20	0	392	40	33	1266	3
RTOR Reduction (vph)	0	9	0	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	133	4	0	424	0	33	1269	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		9.2			9.2	9.2		30.0		1.4	37.4	
Effective Green, g (s)		11.2			11.2	11.2		32.0		1.4	39.4	
Actuated g/C Ratio		0.19			0.19	0.19		0.53		0.02	0.66	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		280			254	289		1771		40	2274	
v/s Ratio Prot						0.00		0.13		0.02	c0.37	
v/s Ratio Perm		0.00			c0.10							
v/c Ratio		0.03			0.52	0.01		0.24		0.83	0.56	
Uniform Delay, d1		20.0			22.0	19.9		7.5		29.2	5.6	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.9	0.0		0.1		76.6	0.3	
Delay (s)		20.0			24.0	20.0		7.6		105.8	5.9	
Level of Service		C			C	B		A		F	A	
Approach Delay (s/veh)		20.0			23.5			7.6			8.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	15.5
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

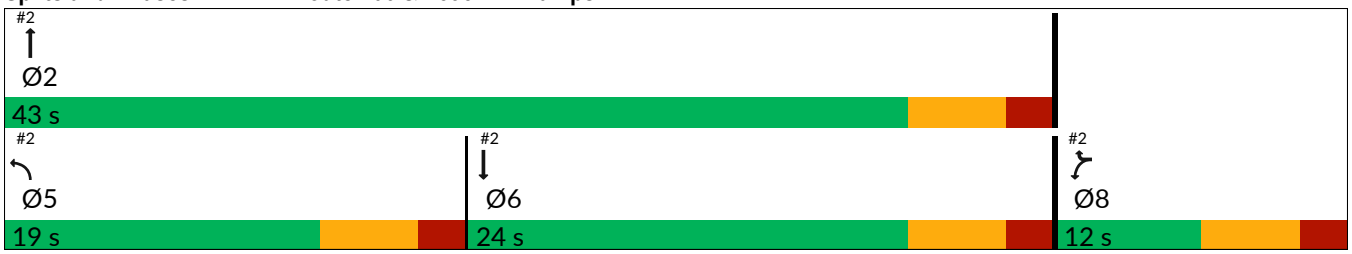


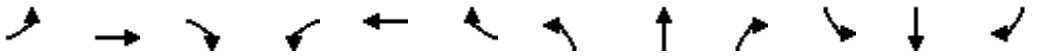
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	13	214	516	0	0	537	1122
Future Volume (vph)	0	0	0	3	0	13	214	516	0	0	537	1122
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Satd. Flow (RTOR)						179						811
Adj. Flow (vph)	0	0	0	4	0	19	274	662	0	0	624	1305
Lane Group Flow (vph)	0	0	0	4	0	19	274	662	0	0	624	1305
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.01		0.04	0.30	0.22			0.41	0.86
Control Delay (s/veh)				16.3		0.2	12.5	1.1			9.4	8.2
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				16.3		0.2	12.5	1.1			9.4	8.2
Queue Length 50th (ft)				1		0	18	0			35	0
Queue Length 95th (ft)				6		0	57	40			117	#15
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				377		466	1270	3036			1879	1516
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		0.04	0.22	0.22			0.33	0.86

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 38.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

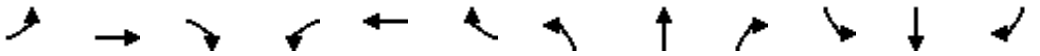




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	13	214	516	0	0	537	1122
Future Volume (vph)	0	0	0	3	0	13	214	516	0	0	537	1122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1743		1509	3134	3231			3388	1516
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1743		1509	3134	3231			3388	1516
Peak-hour factor, PHF	0.90	0.90	0.90	0.69	0.69	0.69	0.78	0.78	0.78	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	4	0	19	274	662	0	0	624	1305
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	1	274	662	0	0	624	1305
Heavy Vehicles (%)	0%	0%	0%	7%	7%	7%	8%	8%	8%	3%	3%	3%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				0.8		0.8	9.0	30.6			15.6	43.4
Effective Green, g (s)				2.8		2.8	11.0	32.6			17.6	43.4
Actuated g/C Ratio				0.06		0.06	0.25	0.75			0.41	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				112		97	794	2426			1373	1516
v/s Ratio Prot				0.00		0.00	0.09	0.20			0.18	
v/s Ratio Perm												c0.86
v/c Ratio				0.04		0.01	0.35	0.27			0.45	0.86
Uniform Delay, d1				19.0		19.0	13.3	1.7			9.4	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		0.1	0.3	0.1			0.2	6.6
Delay (s)				19.2		19.1	13.5	1.8			9.6	6.6
Level of Service				B		B	B	A			A	A
Approach Delay (s/veh)		0.0			19.1			5.2			7.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

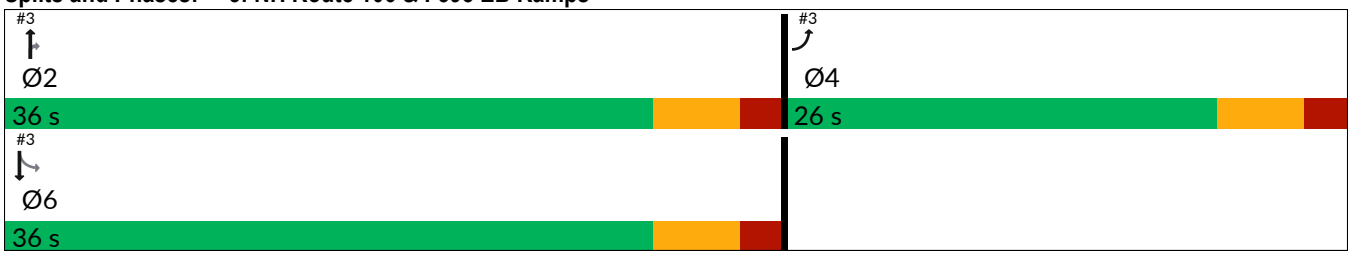
c Critical Lane Group

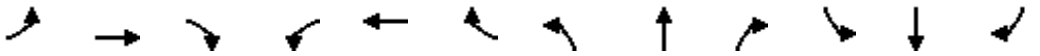


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	322	0	376	0	0	0	0	408	1	27	513	0
Future Volume (vph)	322	0	376	0	0	0	0	408	1	27	513	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.997	
Satd. Flow (prot)	3303	0	2682	0	0	0	0	3261	1459	0	3411	0
Flt Permitted	0.950										0.915	
Satd. Flow (perm)	3303	0	2682	0	0	0	0	3261	1459	0	3130	0
Satd. Flow (RTOR)			453						53			
Adj. Flow (vph)	388	0	453	0	0	0	0	480	1	32	604	0
Lane Group Flow (vph)	388	0	453	0	0	0	0	480	1	0	636	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.36		0.17					0.33	0.00		0.46	
Control Delay (s/veh)	11.0		0.1					7.3	0.0		8.3	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	11.0		0.1					7.3	0.0		8.3	
Queue Length 50th (ft)	29		0					29	0		40	
Queue Length 95th (ft)	60		0					57	0		75	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	2065		2682					2894	1301		2778	
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	0.19		0.17					0.17	0.00		0.23	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 36
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	322	0	376	0	0	0	0	408	1	27	513	0
Future Volume (vph)	322	0	376	0	0	0	0	408	1	27	513	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3303		2682					3261	1459		3413	
Flt Permitted	0.95		1.00					1.00	1.00		0.91	
Satd. Flow (perm)	3303		2682					3261	1459		3130	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	388	0	453	0	0	0	0	480	1	32	604	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	388	0	453	0	0	0	0	480	0	0	636	0
Heavy Vehicles (%)	6%	6%	6%	0%	0%	0%	7%	7%	7%	2%	2%	2%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	9.7		35.7					14.0	14.0		14.0	
Effective Green, g (s)	11.7		35.7					16.0	16.0		16.0	
Actuated g/C Ratio	0.33		1.00					0.45	0.45		0.45	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1082		2682					1461	653		1402	
v/s Ratio Prot	c0.12							0.15				
v/s Ratio Perm			0.17						0.00		c0.20	
v/c Ratio	0.36		0.17					0.33	0.00		0.45	
Uniform Delay, d1	9.1		0.0					6.4	5.4		6.8	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.2		0.1					0.1	0.0		0.2	
Delay (s)	9.3		0.1					6.5	5.4		7.1	
Level of Service	A		A					A	A		A	
Approach Delay (s/veh)		4.4			0.0			6.5			7.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	35.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

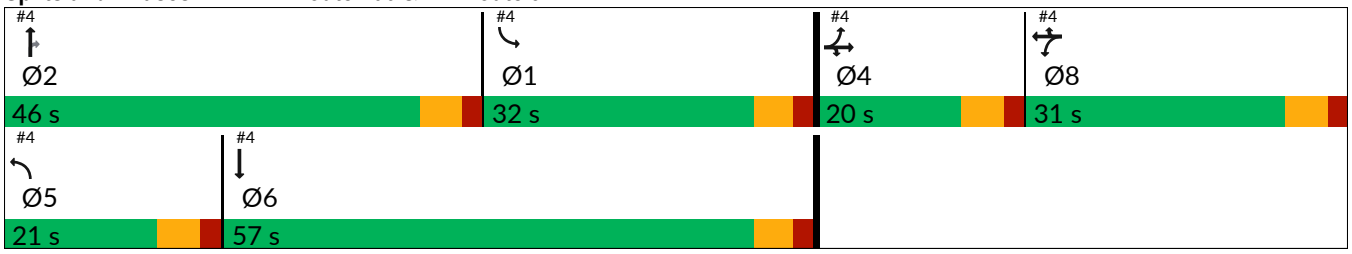
c Critical Lane Group

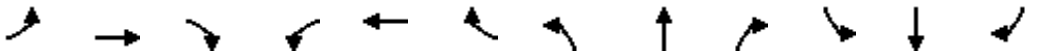
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	93	39	419	188	82	10	215	107	32	627	230
Future Volume (vph)	112	93	39	419	188	82	10	215	107	32	627	230
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.974		0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	1557	3192	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950	0.974		0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	1557	3192	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			178			178			127			228
Adj. Flow (vph)	132	109	46	493	221	96	11	239	119	39	755	277
Lane Group Flow (vph)	132	109	46	246	468	96	11	239	119	39	755	277
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.25	0.38	0.12	0.55	0.51	0.17	0.06	0.30	0.26	0.14	0.63	0.16
Control Delay (s/veh)	33.6	37.9	0.6	31.4	27.1	0.6	40.2	30.0	7.9	31.5	24.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.6	37.9	0.6	31.4	27.1	0.6	40.2	30.0	7.9	31.5	24.3	0.2
Queue Length 50th (ft)	28	47	0	103	96	0	5	55	0	17	151	0
Queue Length 95th (ft)	70	123	0	250	203	0	27	124	47	44	263	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	710	385	466	578	1187	681	378	1869	890	658	2472	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	42	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.28	0.10	0.43	0.39	0.14	0.03	0.13	0.13	0.06	0.31	0.16

Intersection Summary

Cycle Length: 129
Actuated Cycle Length: 76.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	93	39	419	188	82	10	215	107	32	627	230
Future Volume (vph)	112	93	39	419	188	82	10	215	107	32	627	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	1557	3193	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	1557	3193	1531	1616	3231	1446	1694	3388	1777
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.83	0.83	0.83
Adj. Flow (vph)	132	109	46	493	221	96	11	239	119	39	755	277
RTOR Reduction (vph)	0	0	39	0	0	70	0	0	91	0	0	0
Lane Group Flow (vph)	132	109	7	246	468	26	11	239	28	39	755	277
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	10.5	10.5	10.5	20.1	20.1	20.1	1.1	17.0	17.0	9.4	25.3	81.0
Effective Green, g (s)	12.5	12.5	12.5	22.1	22.1	22.1	3.1	19.0	19.0	11.4	27.3	81.0
Actuated g/C Ratio	0.15	0.15	0.15	0.27	0.27	0.27	0.04	0.23	0.23	0.14	0.34	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	497	269	229	424	871	417	61	757	339	238	1141	1777
v/s Ratio Prot	0.04	c0.06	0.00	c0.16	0.15	0.02	0.01	c0.07		0.02	c0.22	
v/s Ratio Perm									0.02			0.16
v/c Ratio	0.27	0.41	0.03	0.58	0.54	0.06	0.18	0.32	0.08	0.16	0.66	0.16
Uniform Delay, d1	30.2	30.9	29.1	25.4	25.1	21.8	37.7	25.6	24.2	30.6	22.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	0.1	2.0	0.6	0.1	1.4	0.2	0.1	0.3	1.5	0.2
Delay (s)	30.5	31.9	29.2	27.5	25.7	21.9	39.1	25.9	24.3	30.9	24.4	0.2
Level of Service	C	C	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		30.8			25.8			25.8			18.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	10	12	0	17	6	198	4	27	669	9
Future Vol, veh/h	8	0	10	12	0	17	6	198	4	27	669	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	69	69	69	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	8	8	8	2	2	2
Mvmt Flow	16	0	20	17	0	25	7	220	4	30	743	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1042	1046	748	1037	-	220	753	0	0	224	0	0
Stage 1	808	808	-	233	-	-	-	-	-	-	-	-
Stage 2	233	238	-	803	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.18	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.272	-	-	2.218	-	-
Pot Cap-1 Maneuver	210	230	415	211	0	825	830	-	-	1344	-	-
Stage 1	378	397	-	774	0	-	-	-	-	-	-	-
Stage 2	774	712	-	380	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	223	415	195	-	825	830	-	-	1344	-	-
Mov Cap-2 Maneuver	197	223	-	195	-	-	-	-	-	-	-	-
Stage 1	369	388	-	768	-	-	-	-	-	-	-	-
Stage 2	745	706	-	354	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	18.88	16.02	0.27	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	830	-	-	197	415	195	825	1344	-	-
HCM Lane V/C Ratio	0.008	-	-	0.081	0.048	0.089	0.03	0.022	-	-
HCM Ctrl Dly (s/v)	9.4	-	-	24.9	14.1	25.3	9.5	7.7	-	-
HCM Lane LOS	A	-	-	C	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	41	41	379	652	39
Future Vol, veh/h	24	41	41	379	652	39
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	79	79	86	86
Heavy Vehicles, %	4	4	7	7	7	7
Mvmt Flow	35	60	52	480	758	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1342	758	803	0	-	0
Stage 1	758	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.17	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.263	-	-	-
Pot Cap-1 Maneuver	166	404	799	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	155	404	799	-	-	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.63	0.96	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	799	-	155	404	-	-
HCM Lane V/C Ratio	0.065	-	0.227	0.149	-	-
HCM Ctrl Dly (s/v)	9.8	-	34.8	15.5	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.5	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	11	9	407	670	23
Future Vol, veh/h	13	11	9	407	670	23
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	89	89	88	88
Heavy Vehicles, %	0	0	8	8	4	4
Mvmt Flow	16	14	10	457	761	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1239	761	788	0	-	0
Stage 1	761	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.18	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.272	-	-	-
Pot Cap-1 Maneuver	196	408	806	-	-	-
Stage 1	465	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	193	408	806	-	-	-
Mov Cap-2 Maneuver	193	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	628	-	-	-	-	-

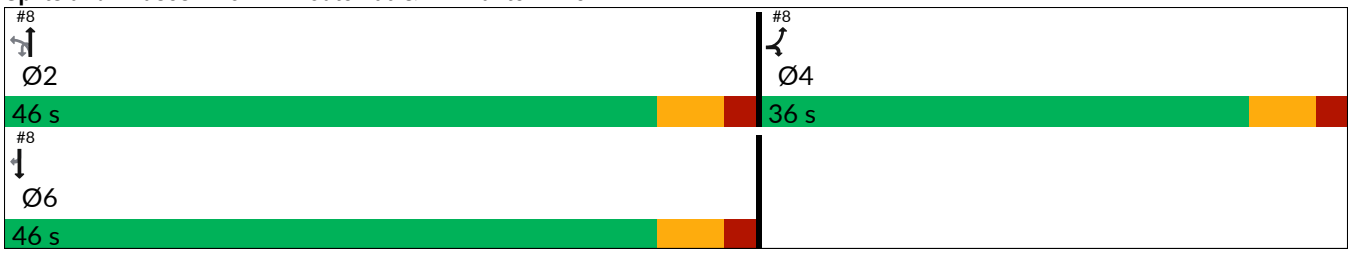
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	20.22	0.21	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	806	-	193	408	-	-
HCM Lane V/C Ratio	0.013	-	0.085	0.034	-	-
HCM Ctrl Dly (s/v)	9.5	-	25.4	14.1	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	93	59	1	51	323	567	114
Future Volume (vph)	93	59	1	51	323	567	114
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1711	1531	0	1678	1827	1783	1568
Flt Permitted	0.950			0.352			
Satd. Flow (perm)	1711	1531	0	622	1827	1783	1568
Satd. Flow (RTOR)		72					125
Adj. Flow (vph)	113	72	1	59	376	623	125
Lane Group Flow (vph)	113	72	0	60	376	623	125
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.26	0.17		0.14	0.31	0.52	0.11
Control Delay (s/veh)	17.4	6.3		5.9	5.8	8.0	1.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.4	6.3		5.9	5.8	8.0	1.5
Queue Length 50th (ft)	22	0		6	44	88	0
Queue Length 95th (ft)	63	22		21	92	194	15
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	1253	1140		559	1642	1602	1422
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	0.09	0.06		0.11	0.23	0.39	0.09

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 44.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	93	59	1	51	323	567	114
Future Volume (vph)	93	59	1	51	323	567	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1531		1678	1827	1783	1568
Flt Permitted	0.95	1.00		0.35	1.00	1.00	1.00
Satd. Flow (perm)	1711	1531		621	1827	1783	1568
Peak-hour factor, PHF	0.82	0.82	0.86	0.86	0.86	0.91	0.91
Adj. Flow (vph)	113	72	1	59	376	623	125
RTOR Reduction (vph)	0	57	0	0	0	0	47
Lane Group Flow (vph)	113	15	0	60	376	623	78
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	7.3	7.3		26.8	26.8	26.8	26.8
Effective Green, g (s)	9.3	9.3		28.8	28.8	28.8	28.8
Actuated g/C Ratio	0.20	0.20		0.62	0.62	0.62	0.62
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	308		387	1141	1113	979
v/s Ratio Prot	c0.07	0.01			0.21	c0.35	
v/s Ratio Perm				0.10			0.05
v/c Ratio	0.33	0.05		0.16	0.33	0.56	0.08
Uniform Delay, d1	15.7	14.8		3.6	4.1	5.0	3.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1		0.2	0.2	0.6	0.0
Delay (s)	16.3	14.9		3.8	4.3	5.6	3.5
Level of Service	B	B		A	A	A	A
Approach Delay (s/veh)	15.7				4.2	5.2	
Approach LOS	B				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	60	99	371	952	46
Future Vol, veh/h	4	60	99	371	952	46
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	82	82	86	86
Heavy Vehicles, %	5	5	5	5	1	1
Mvmt Flow	6	90	121	452	1107	53

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1801	1107	1160	0	-	0
Stage 1	1107	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	86	252	591	-	-	-
Stage 1	312	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	69	252	591	-	-	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	248	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	34.26	2.66	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	591	-	216	-	-
HCM Lane V/C Ratio	0.204	-	0.442	-	-
HCM Ctrl Dly (s/v)	12.6	-	34.3	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.8	-	2.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	148	159	6	4	6
Future Vol, veh/h	8	148	159	6	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	76	76	38	38
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	11	200	209	8	11	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	217	0	-	0	335	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	4.13	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.219	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1351	-	-	-	652	832
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	897	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1351	-	-	-	647	832
Mov Cap-2 Maneuver	-	-	-	-	647	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	897	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.39	0	9.91
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1351	-	-	-	647	832
HCM Lane V/C Ratio	0.008	-	-	-	0.016	0.019
HCM Ctrl Dly (s/v)	7.7	-	-	-	10.7	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0.1

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	133	36	45	120	13	23
Future Vol, veh/h	133	36	45	120	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	72	72	69	69
Heavy Vehicles, %	3	3	2	2	0	0
Mvmt Flow	180	49	63	167	19	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	228	0	496	114
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	-	-	4.13	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.219	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1338	-	522	923
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1338	-	498	923
Mov Cap-2 Maneuver	-	-	-	-	498	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	763	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.13	10.3
HCM LOS			B

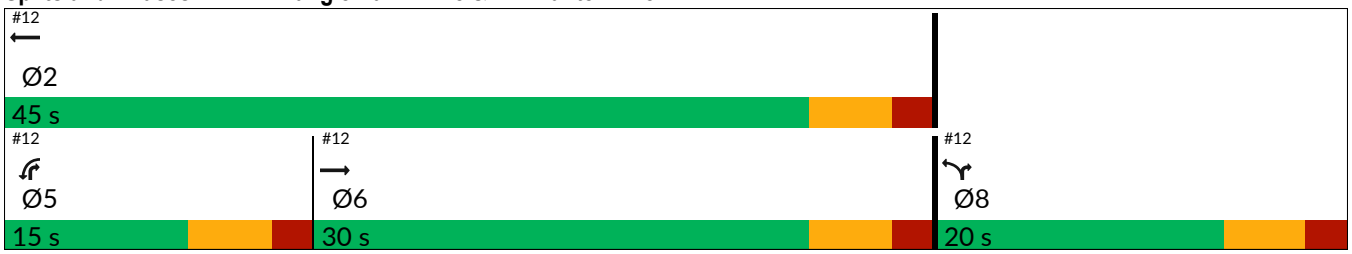
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	498	923	-	-	1338	-
HCM Lane V/C Ratio	0.038	0.036	-	-	0.047	-
HCM Ctrl Dly (s/v)	12.5	9	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	131	63	39	94	41	38
Future Volume (vph)	131	63	39	94	41	38
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.951					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3286	0	1694	1845	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3286	0	1694	1845	1770	1583
Satd. Flow (RTOR)	83					49
Adj. Flow (vph)	172	83	57	138	53	49
Lane Group Flow (vph)	255	0	57	138	53	49
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	30.0		15.0	45.0	20.0	
Total Split (%)	46.2%		23.1%	69.2%	30.8%	
Maximum Green (s)	24.0		9.0	39.0	14.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		None	Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.14		0.13	0.10	0.12	0.07
Control Delay (s/veh)	8.1		13.6	3.8	13.7	2.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.1		13.6	3.8	13.7	2.0
Queue Length 50th (ft)	15		10	11	9	0
Queue Length 95th (ft)	31		25	21	27	7
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2526		546	1843	830	955
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	0.10		0.10	0.07	0.06	0.05

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 35.7
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

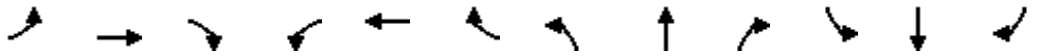
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	131	63	39	94	41	38
Future Volume (vph)	131	63	39	94	41	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3286		1694	1845	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3286		1694	1845	1770	1583
Peak-hour factor, PHF	0.76	0.76	0.68	0.68	0.77	0.77
Adj. Flow (vph)	172	83	57	138	53	49
RTOR Reduction (vph)	48	0	0	0	0	30
Lane Group Flow (vph)	207	0	57	138	53	19
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	15.5		3.9	25.4	3.8	13.7
Effective Green, g (s)	17.5		5.9	27.4	5.8	15.7
Actuated g/C Ratio	0.42		0.14	0.67	0.14	0.38
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1395		242	1227	249	603
v/s Ratio Prot	c0.06		c0.03	0.07	c0.03	0.01
v/s Ratio Perm						
v/c Ratio	0.15		0.24	0.11	0.21	0.03
Uniform Delay, d1	7.3		15.7	2.5	15.7	8.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0		0.5	0.0	0.4	0.0
Delay (s)	7.3		16.2	2.5	16.1	8.0
Level of Service	A		B	A	B	A
Approach Delay (s/veh)	7.3			6.5	12.2	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		

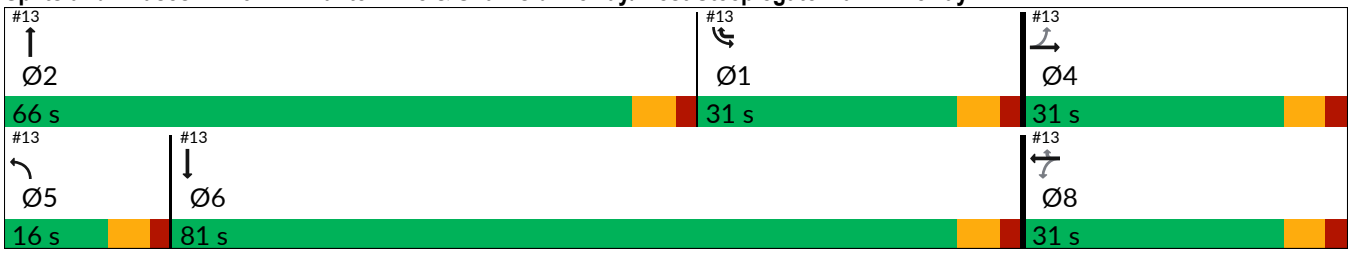
c Critical Lane Group

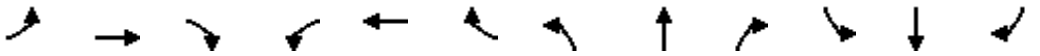


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	0	0	4	17	153	2	7	193	27
Future Volume (vph)	40	0	26	0	0	4	17	153	2	7	193	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.941				0.850		0.998			0.982	
Flt Protected		0.971					0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1963	1669	1787	3448	0	3351	3393	0
Flt Permitted		0.840					0.950			0.950		
Satd. Flow (perm)	0	2853	0	0	1963	1669	1787	3448	0	3351	3393	0
Satd. Flow (RTOR)		128				686		1			21	
Adj. Flow (vph)	51	0	33	0	0	12	20	176	2	8	230	32
Lane Group Flow (vph)	0	84	0	0	0	12	20	178	0	8	262	0
Turn Type	Perm	NA				pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	16.0	66.0		31.0	81.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%	24.2%	12.5%	51.6%		24.2%	63.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	10.0	60.0		25.0	75.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.10				0.01	0.04	0.08		0.01	0.12	
Control Delay (s/veh)		2.3				0.0	10.6	6.7		9.9	5.9	
Queue Delay		0.0				0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		2.3				0.0	10.6	6.7		9.9	5.9	
Queue Length 50th (ft)		0				0	3	6		0	8	
Queue Length 95th (ft)		4				0	14	32		4	38	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		2580				1571	716	3448		3016	3393	
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		0.03				0.01	0.03	0.05		0.00	0.08	

Intersection Summary
Cycle Length: 128
Actuated Cycle Length: 30.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	0	0	4	17	153	2	7	193	27
Future Volume (vph)	40	0	26	0	0	4	17	153	2	7	193	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0				4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95				1.00	1.00	0.95		0.97	0.95	
Frt		0.94				0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.97				1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3297				1669	1787	3449		3351	3392	
Flt Permitted		0.84				1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2853				1669	1787	3449		3351	3392	
Peak-hour factor, PHF	0.78	0.78	0.78	0.33	0.33	0.33	0.87	0.87	0.87	0.84	0.84	0.84
Adj. Flow (vph)	51	0	33	0	0	12	20	176	2	8	230	32
RTOR Reduction (vph)	0	73	0	0	0	9	0	1	0	0	11	0
Lane Group Flow (vph)	0	11	0	0	0	3	20	177	0	8	251	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA				pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		3.2				4.4	1.0	15.8		1.2	16.0	
Effective Green, g (s)		5.2				8.4	3.0	17.8		3.2	18.0	
Actuated g/C Ratio		0.14				0.22	0.08	0.47		0.08	0.47	
Clearance Time (s)		6.0				6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0				3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		388				541	140	1607		280	1598	
v/s Ratio Prot						0.00	0.01	c0.05		0.00	c0.07	
v/s Ratio Perm		c0.00				0.00						
v/c Ratio		0.03				0.00	0.14	0.11		0.03	0.16	
Uniform Delay, d1		14.3				11.6	16.4	5.7		16.1	5.8	
Progression Factor		1.00				1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0				0.0	0.5	0.0		0.0	0.0	
Delay (s)		14.3				11.6	16.9	5.8		16.1	5.8	
Level of Service		B				B	B	A		B	A	
Approach Delay (s/veh)		14.3			11.6			6.9			6.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

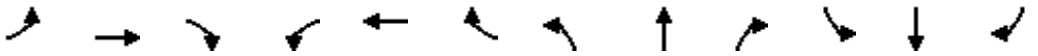
Intersection	
Int Delay, s/veh	1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	14	32	410	95	42	461
Future Vol, veh/h	14	32	410	95	42	461
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	75	75	94	94	86	86
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	19	43	436	101	49	536

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	852	269	0	0	537	0
Stage 1	487	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	302	735	-	-	1034	-
Stage 1	589	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	288	735	-	-	1034	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	13.21	0	0.72
HCM LOS	B		

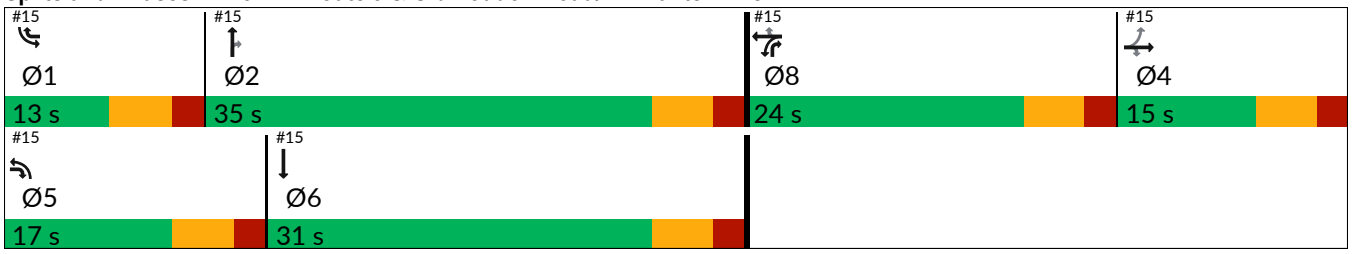
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	499	1034	-
HCM Lane V/C Ratio	-	-	0.123	0.047	-
HCM Ctrl Dly (s/v)	-	-	13.2	8.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

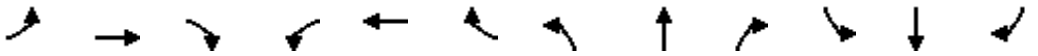


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	28	59	121	25	31	41	245	156	43	303	8
Future Volume (vph)	6	28	59	121	25	31	41	245	156	43	303	8
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.991		0.950	0.968		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1641	1730	1492	1787	3455	1599	3433	3408	0
Flt Permitted		0.911		0.950	0.968		0.950			0.950		
Satd. Flow (perm)	0	1673	1561	1641	1730	1492	1787	3455	1599	3433	3408	0
Satd. Flow (RTOR)			113			113			195		3	
Adj. Flow (vph)	8	35	75	153	32	39	51	306	195	53	374	10
Lane Group Flow (vph)	0	43	75	92	93	39	51	306	195	53	384	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	15.0	15.0	17.0	24.0	24.0	13.0	17.0	35.0	24.0	13.0	31.0	
Total Split (%)	17.2%	17.2%	19.5%	27.6%	27.6%	14.9%	19.5%	40.2%	27.6%	14.9%	35.6%	
Maximum Green (s)	9.0	9.0	11.0	18.0	18.0	7.0	11.0	29.0	18.0	7.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.14	0.15	0.26	0.24	0.05	0.15	0.22	0.16	0.09	0.34	
Control Delay (s/veh)		25.5	2.3	22.8	22.5	0.1	24.8	15.4	1.7	25.1	18.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		25.5	2.3	22.8	22.5	0.1	24.8	15.4	1.7	25.1	18.2	
Queue Length 50th (ft)		10	0	21	21	0	11	31	0	6	41	
Queue Length 95th (ft)		40	7	68	69	0	46	78	17	25	105	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		380	620	678	715	755	480	2213	1345	638	1902	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.11	0.12	0.14	0.13	0.05	0.11	0.14	0.14	0.08	0.20	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 52.6
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

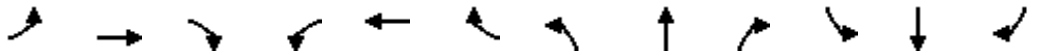




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	28	59	121	25	31	41	245	156	43	303	8
Future Volume (vph)	6	28	59	121	25	31	41	245	156	43	303	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1820	1561	1641	1730	1492	1787	3455	1599	3433	3408	
Flt Permitted		0.91	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1673	1561	1641	1730	1492	1787	3455	1599	3433	3408	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	8	35	75	153	32	39	51	306	195	53	374	10
RTOR Reduction (vph)	0	0	59	0	0	28	0	0	87	0	2	0
Lane Group Flow (vph)	0	43	16	92	93	11	51	306	108	53	382	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		2.5	8.4	9.4	9.4	12.9	5.9	19.1	28.5	3.5	16.7	
Effective Green, g (s)		4.5	12.4	11.4	11.4	16.9	7.9	21.1	32.5	5.5	18.7	
Actuated g/C Ratio		0.08	0.21	0.19	0.19	0.29	0.14	0.36	0.56	0.09	0.32	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		128	437	319	337	431	241	1246	997	322	1089	
v/s Ratio Prot			0.00	c0.06	0.05	0.00	c0.03	0.09	0.02	0.02	c0.11	
v/s Ratio Perm		c0.03	0.01			0.01			0.05			
v/c Ratio		0.34	0.04	0.29	0.28	0.03	0.21	0.25	0.11	0.16	0.35	
Uniform Delay, d1		25.6	18.3	20.1	20.0	14.9	22.5	13.1	6.1	24.4	15.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.6	0.0	0.5	0.4	0.0	0.4	0.1	0.0	0.2	0.2	
Delay (s)		27.1	18.3	20.6	20.5	14.9	23.0	13.2	6.2	24.6	15.4	
Level of Service		C	B	C	C	B	C	B	A	C	B	
Approach Delay (s/veh)		21.5			19.6			11.6			16.6	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

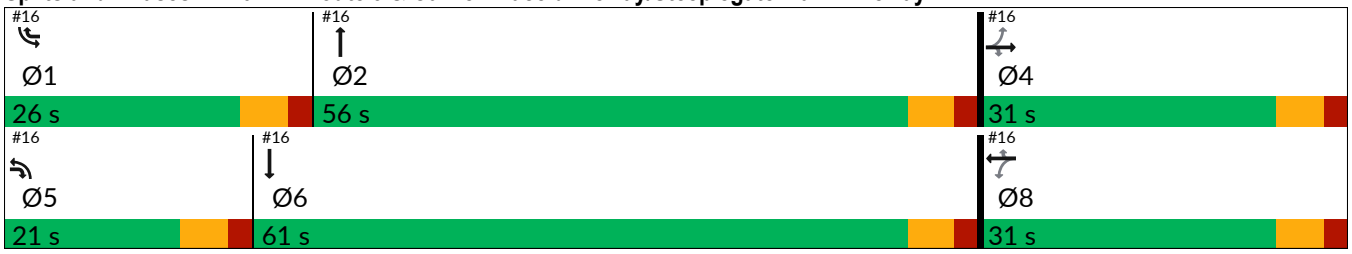
c Critical Lane Group

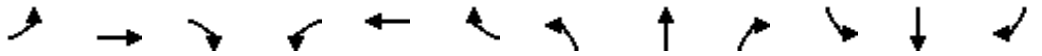


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	35	15	0	4	45	222	15	1	304	43
Future Volume (vph)	36	1	35	15	0	4	45	222	15	1	304	43
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.991			0.981	
Flt Protected		0.953			0.950		0.950			0.950		
Satd. Flow (prot)	0	1677	1495	0	1865	1669	1829	3390	0	1752	3324	0
Flt Permitted		0.878			0.889		0.950			0.950		
Satd. Flow (perm)	0	1545	1495	0	1745	1669	1829	3390	0	1752	3324	0
Satd. Flow (RTOR)			39			29		8			20	
Adj. Flow (vph)	40	1	39	21	0	6	66	326	22	1	380	54
Lane Group Flow (vph)	0	41	39	0	21	6	66	348	0	1	434	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	31.0	31.0	21.0	31.0	31.0	26.0	21.0	56.0		26.0	61.0	
Total Split (%)	27.4%	27.4%	18.6%	27.4%	27.4%	23.0%	18.6%	49.6%		23.0%	54.0%	
Maximum Green (s)	25.0	25.0	15.0	25.0	25.0	20.0	15.0	50.0		20.0	55.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.10	0.07		0.05	0.01	0.14	0.13		0.00	0.21	
Control Delay (s/veh)		15.2	3.0		15.1	0.5	14.8	4.5		18.0	8.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.2	3.0		15.1	0.5	14.8	4.5		18.0	8.5	
Queue Length 50th (ft)		5	0		2	0	7	0		0	20	
Queue Length 95th (ft)		32	11		15	0	31	42		3	70	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		1209	925		1365	1265	901	3390		1116	3324	
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		0.03	0.04		0.02	0.00	0.07	0.10		0.00	0.13	

Intersection Summary
Cycle Length: 113
Actuated Cycle Length: 37
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	35	15	0	4	45	222	15	1	304	43
Future Volume (vph)	36	1	35	15	0	4	45	222	15	1	304	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677	1495		1865	1669	1829	3389		1752	3325	
Flt Permitted		0.88	1.00		0.89	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1545	1495		1745	1669	1829	3389		1752	3325	
Peak-hour factor, PHF	0.90	0.90	0.90	0.71	0.71	0.71	0.68	0.68	0.68	0.80	0.80	0.80
Adj. Flow (vph)	40	1	39	21	0	6	66	326	22	1	380	54
RTOR Reduction (vph)	0	0	30	0	0	5	0	3	0	0	10	0
Lane Group Flow (vph)	0	41	9	0	21	1	66	345	0	1	424	0
Heavy Vehicles (%)	8%	8%	8%	0%	0%	0%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		2.5	6.8		2.5	3.3	4.3	24.6		0.8	21.1	
Effective Green, g (s)		4.5	10.8		4.5	7.3	6.3	26.6		2.8	23.1	
Actuated g/C Ratio		0.10	0.24		0.10	0.16	0.14	0.58		0.06	0.50	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		151	482		171	410	251	1963		106	1673	
v/s Ratio Prot			0.00			0.00	c0.04	c0.10		0.00	c0.13	
v/s Ratio Perm		c0.03	0.00		0.01	0.00						
v/c Ratio		0.27	0.02		0.12	0.00	0.26	0.18		0.01	0.25	
Uniform Delay, d1		19.2	13.5		18.9	16.2	17.7	4.5		20.2	6.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.0		0.3	0.0	0.6	0.0		0.0	0.1	
Delay (s)		20.2	13.5		19.2	16.2	18.3	4.6		20.3	6.6	
Level of Service		C	B		B	B	B	A		C	A	
Approach Delay (s/veh)		16.9			18.6			6.7			6.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	261	1	0	347
Future Vol, veh/h	1	0	261	1	0	347
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	92	92	84	84
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	4	0	284	1	0	413

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	491	142	0	0	285	0
Stage 1	284	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	512	886	-	-	1274	-
Stage 1	745	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	512	886	-	-	1274	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	814	-	-	-	-	-

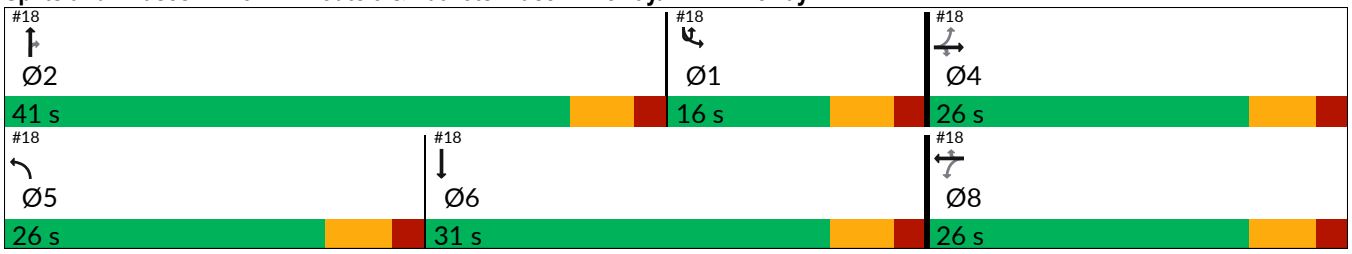
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.09	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	512	1274	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Ctrl Dly (s/v)	-	-	12.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	238	10	1	5	314
Future Volume (vph)	2	1	6	27	1	2	13	238	10	1	5	314
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.991
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3325
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3325
Satd. Flow (RTOR)			197			197			118			8
Adj. Flow (vph)	3	1	9	44	2	3	18	322	14	1	6	408
Lane Group Flow (vph)	0	4	9	0	46	3	18	322	14	0	7	434
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.11	0.01	0.04	0.12	0.01		0.02	0.17
Control Delay (s/veh)		12.3	0.0		12.5	0.0	13.5	5.8	0.0		13.0	5.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		12.3	0.0		12.5	0.0	13.5	5.8	0.0		13.0	5.5
Queue Length 50th (ft)		1	0		5	0	2	0	0		1	0
Queue Length 95th (ft)		5	0		21	0	15	50	0		8	65
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		982	1175		1050	1132	1221	3250	1460		653	2816
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.04	0.00	0.01	0.10	0.01		0.01	0.15

Intersection Summary
Cycle Length: 83
Actuated Cycle Length: 33.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	26
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

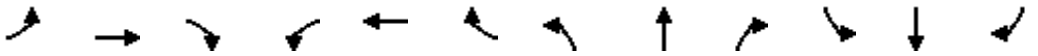
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	238	10	1	5	314
Future Volume (vph)	2	1	6	27	1	2	13	238	10	1	5	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3325
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3325
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.74	0.74	0.74	0.77	0.77	0.77
Adj. Flow (vph)	3	1	9	44	2	3	18	322	14	1	6	408
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	7	0	0	4
Lane Group Flow (vph)	0	4	1	0	46	0	18	322	7	0	7	430
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	1.0	20.5	20.5		1.2	20.7
Effective Green, g (s)		4.7	4.7		4.7	4.7	3.0	22.5	22.5		3.2	22.7
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.07	0.53	0.53		0.08	0.54
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		157	179		168	172	125	1815	812		131	1780
v/s Ratio Prot							0.01	c0.09			0.00	c0.13
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.00			
v/c Ratio		0.03	0.01		0.27	0.00	0.14	0.18	0.01		0.05	0.24
Uniform Delay, d1		16.8	16.8		17.3	16.8	18.5	5.2	4.7		18.2	5.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		0.9	0.0	0.5	0.0	0.0		0.2	0.1
Delay (s)		16.9	16.8		18.2	16.8	19.0	5.2	4.7		18.4	5.3
Level of Service		B	B		B	B	B	A	A		B	A
Approach Delay (s/veh)		16.8			18.1			5.9				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	42.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.77
Adj. Flow (vph)	26
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

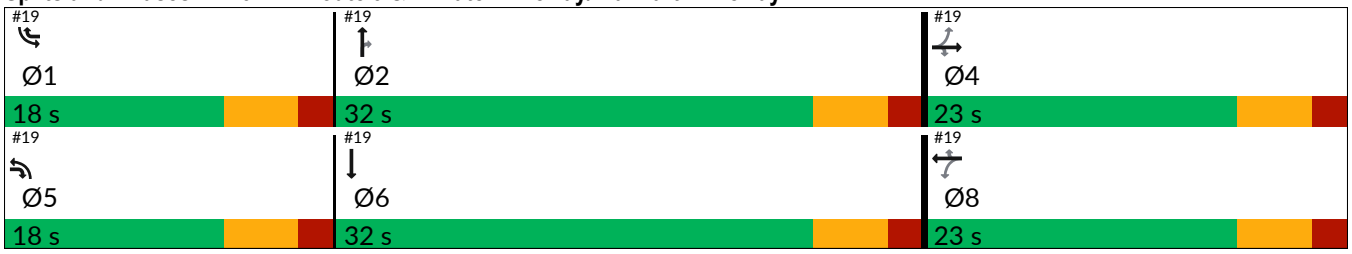
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	134	11	51	253	25
Future Volume (vph)	49	11	66	21	6	40	34	134	11	51	253	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.986	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3441	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3441	0
Satd. Flow (RTOR)			77			48			134		17	
Adj. Flow (vph)	57	13	77	25	7	48	43	168	14	61	301	30
Lane Group Flow (vph)	0	70	77	0	32	48	43	168	14	61	331	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	23.0	23.0	18.0	23.0	23.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (%)	31.5%	31.5%	24.7%	31.5%	31.5%	24.7%	24.7%	43.8%	43.8%	24.7%	43.8%	
Maximum Green (s)	17.0	17.0	12.0	17.0	17.0	12.0	12.0	26.0	26.0	12.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.18	0.10		0.09	0.07	0.10	0.09	0.01	0.14	0.17	
Control Delay (s/veh)		14.8	2.1		14.4	2.2	15.2	11.3	0.0	14.8	10.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		14.8	2.1		14.4	2.2	15.2	11.3	0.0	14.8	10.1	
Queue Length 50th (ft)		13	0		6	0	8	15	0	11	30	
Queue Length 95th (ft)		40	12		22	9	27	33	0	35	57	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		808	1027		747	964	753	2687	1273	710	2680	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.09	0.07		0.04	0.05	0.06	0.06	0.01	0.09	0.12	

Intersection Summary
Cycle Length: 73
Actuated Cycle Length: 36.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	134	11	51	253	25
Future Volume (vph)	49	11	66	21	6	40	34	134	11	51	253	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3442	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3442	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	57	13	77	25	7	48	42	168	14	61	301	30
RTOR Reduction (vph)	0	0	55	0	0	34	0	0	8	0	10	0
Lane Group Flow (vph)	0	70	22	0	32	14	43	168	6	61	321	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.2	7.8		4.2	8.1	3.6	16.0	16.0	3.9	16.3	
Effective Green, g (s)		6.2	11.8		6.2	12.1	5.6	18.0	18.0	5.9	18.3	
Actuated g/C Ratio		0.15	0.28		0.15	0.29	0.13	0.43	0.43	0.14	0.43	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		208	606		192	585	237	1477	683	236	1496	
v/s Ratio Prot			0.00			0.00	0.02	0.05		c0.04	c0.09	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.34	0.04		0.17	0.02	0.18	0.11	0.01	0.26	0.21	
Uniform Delay, d1		16.1	11.0		15.7	10.8	16.2	7.3	6.9	16.1	7.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.0	0.0		0.4	0.0	0.4	0.0	0.0	0.6	0.1	
Delay (s)		17.1	11.0		16.1	10.8	16.6	7.3	6.9	16.7	7.5	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		13.9			12.9			9.0			8.9	
Approach LOS		B			B			A			A	

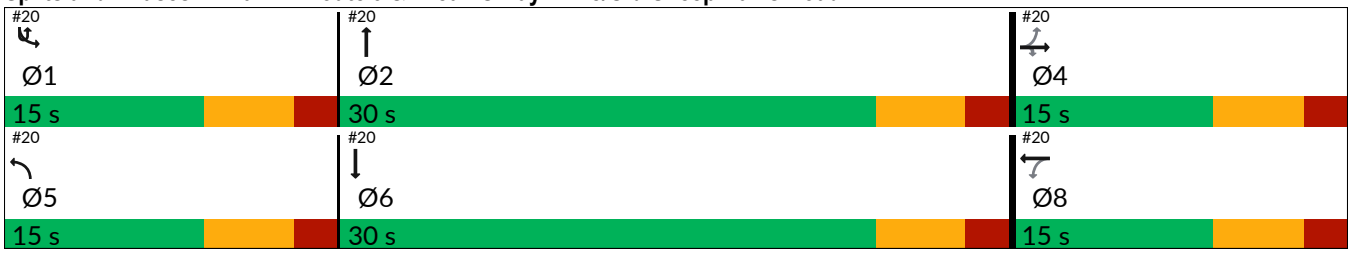
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	240	0	4	4	420
Future Volume (vph)	0	0	1	0	0	0	1	240	0	4	4	420
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850									
Flt Protected							0.950				0.950	
Satd. Flow (prot)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Flt Permitted							0.950				0.950	
Satd. Flow (perm)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Satd. Flow (RTOR)			474									
Adj. Flow (vph)	0	0	4	0	0	0	1	258	0	5	5	500
Lane Group Flow (vph)	0	0	4	0	0	0	1	258	0	0	10	500
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	15.0	15.0	15.0	15.0	15.0		15.0	30.0		15.0	15.0	30.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	50.0%		25.0%	25.0%	50.0%
Maximum Green (s)	9.0	9.0	9.0	9.0	9.0		9.0	24.0		9.0	9.0	24.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio			0.01				0.00	0.08			0.02	0.16
Control Delay (s/veh)			0.0				17.0	2.7			15.4	2.6
Queue Delay			0.0				0.0	0.0			0.0	0.0
Total Delay (s/veh)			0.0				17.0	2.7			15.4	2.6
Queue Length 50th (ft)			0				0	0			1	0
Queue Length 95th (ft)			0				4	39			13	64
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)			859				537	3113			582	3156
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			0.00				0.00	0.08			0.02	0.16

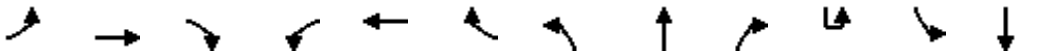
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 36.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



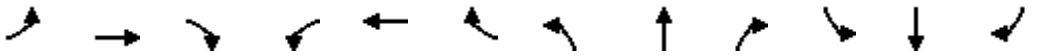
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	240	0	4	4	420
Future Volume (vph)	0	0	1	0	0	0	1	240	0	4	4	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)			4.0				4.0	4.0			4.0	4.0
Lane Util. Factor			1.00				1.00	0.95			1.00	0.95
Frt			0.85				1.00	1.00			1.00	1.00
Flt Protected			1.00				0.95	1.00			0.95	1.00
Satd. Flow (prot)			1669				1668	3455			1805	3490
Flt Permitted			1.00				0.95	1.00			0.95	1.00
Satd. Flow (perm)			1669				1668	3455			1805	3490
Peak-hour factor, PHF	0.25	0.25	0.25	0.90	0.90	0.90	0.93	0.93	0.93	0.84	0.84	0.84
Adj. Flow (vph)	0	0	4	0	0	0	1	258	0	5	5	500
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	1	258	0	0	10	500
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)			0.7				0.7	26.8			0.9	27.0
Effective Green, g (s)			2.7				2.7	28.8			2.9	29.0
Actuated g/C Ratio			0.06				0.06	0.62			0.06	0.63
Clearance Time (s)			6.0				6.0	6.0			6.0	6.0
Vehicle Extension (s)			3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			97				97	2144			112	2181
v/s Ratio Prot							0.00	0.07			c0.01	c0.14
v/s Ratio Perm			c0.00									
v/c Ratio			0.00				0.01	0.12			0.09	0.23
Uniform Delay, d1			20.6				20.6	3.6			20.5	3.8
Progression Factor			1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0				0.0	0.0			0.3	0.1
Delay (s)			20.6				20.6	3.6			20.9	3.9
Level of Service			C				C	A			C	A
Approach Delay (s/veh)		20.6			0.0			3.7				4.2
Approach LOS		C			A			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.84
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

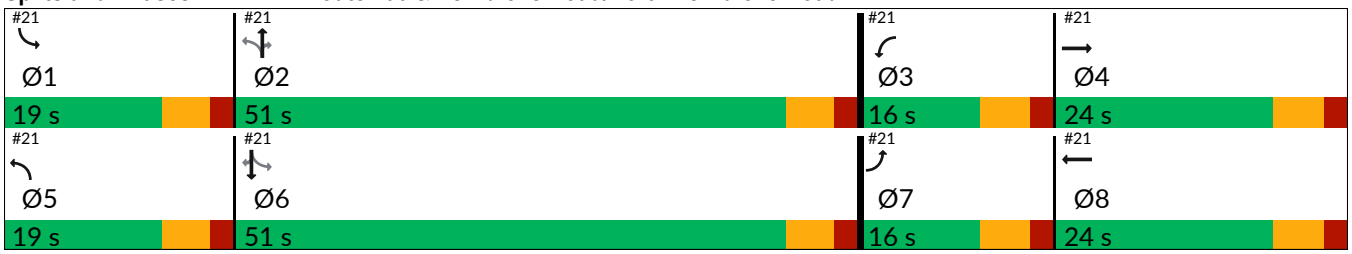


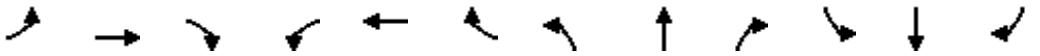
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	21	100	54	73	49	60	409	25	38	835	130
Future Volume (vph)	36	21	100	54	73	49	60	409	25	38	835	130
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1648	0	1770	1576	0	1776	1810	1538	1829	1863	1531
Flt Permitted	0.950			0.950			0.077			0.365		
Satd. Flow (perm)	1787	1648	0	1770	1576	0	144	1810	1538	703	1863	1531
Satd. Flow (RTOR)		122			27				149			149
Adj. Flow (vph)	44	26	122	73	99	66	75	511	31	43	938	146
Lane Group Flow (vph)	44	148	0	73	165	0	75	511	31	43	938	146
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.23	0.43		0.36	0.53		0.28	0.50	0.03	0.08	0.96	0.17
Control Delay (s/veh)	45.3	14.8		47.4	37.8		11.7	18.6	0.1	8.9	47.2	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.3	14.8		47.4	37.8		11.7	18.6	0.1	8.9	47.2	3.4
Queue Length 50th (ft)	26	14		44	82		18	227	0	10	~660	0
Queue Length 95th (ft)	57	56		77	121		37	321	0	27	#990	34
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	239	463		237	377		366	1022	933	639	979	875
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.32		0.31	0.44		0.20	0.50	0.03	0.07	0.96	0.17

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 92.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

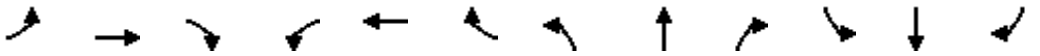




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	21	100	54	73	49	60	409	25	38	835	130
Future Volume (vph)	36	21	100	54	73	49	60	409	25	38	835	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1649		1770	1576		1776	1810	1538	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	1787	1649		1770	1576		143	1810	1538	702	1863	1531
Peak-hour factor, PHF	0.82	0.82	0.82	0.74	0.74	0.74	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	44	26	122	73	99	66	75	511	31	43	938	146
RTOR Reduction (vph)	0	104	0	0	22	0	0	0	14	0	0	72
Lane Group Flow (vph)	44	44	0	73	143	0	75	511	17	43	938	74
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.8	12.7		6.9	14.8		56.4	50.2	50.2	51.6	47.8	47.8
Effective Green, g (s)	6.8	14.7		8.9	16.8		60.4	52.2	52.2	55.6	49.8	49.8
Actuated g/C Ratio	0.07	0.15		0.09	0.17		0.62	0.53	0.53	0.57	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	124	248		161	271		225	968	822	466	950	781
v/s Ratio Prot	0.02	0.03		c0.04	c0.09		c0.03	0.28		0.01	c0.50	
v/s Ratio Perm							0.18		0.01	0.05		0.05
v/c Ratio	0.35	0.18		0.45	0.53		0.33	0.53	0.02	0.09	0.99	0.10
Uniform Delay, d1	43.3	36.2		42.0	36.8		19.8	14.7	10.7	10.0	23.6	12.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.3		2.0	1.8		0.9	0.5	0.0	0.1	25.8	0.1
Delay (s)	45.1	36.5		44.1	38.6		20.7	15.2	10.7	10.1	49.4	12.4
Level of Service	D	D		D	D		C	B	B	B	D	B
Approach Delay (s/veh)		38.5			40.3			15.7			43.1	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	131	57	7	16	13	115	383	36	116	562	301
Future Volume (vph)	17	131	57	7	16	13	115	383	36	116	562	301
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1718	0	1736	1930	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.730			0.517			0.157			0.500		
Satd. Flow (perm)	1360	1718	0	945	1930	0	286	1818	1599	941	1818	1546
Satd. Flow (RTOR)		24			19				66			320
Adj. Flow (vph)	20	156	68	10	23	19	137	456	43	123	598	320
Lane Group Flow (vph)	20	224	0	10	42	0	137	456	43	123	598	320
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.06	0.51		0.04	0.09		0.31	0.41	0.04	0.32	0.81	0.39
Control Delay (s/veh)	17.2	21.5		17.1	12.0		7.1	7.5	1.1	18.1	30.4	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.2	21.5		17.1	12.0		7.1	7.5	1.1	18.1	30.4	3.9
Queue Length 50th (ft)	5	61		3	6		17	68	0	31	194	0
Queue Length 95th (ft)	19	109		10	19		39	127	6	79	#421	48
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	438	570		304	634		485	1204	1081	383	740	819
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.39		0.03	0.07		0.28	0.38	0.04	0.32	0.81	0.39

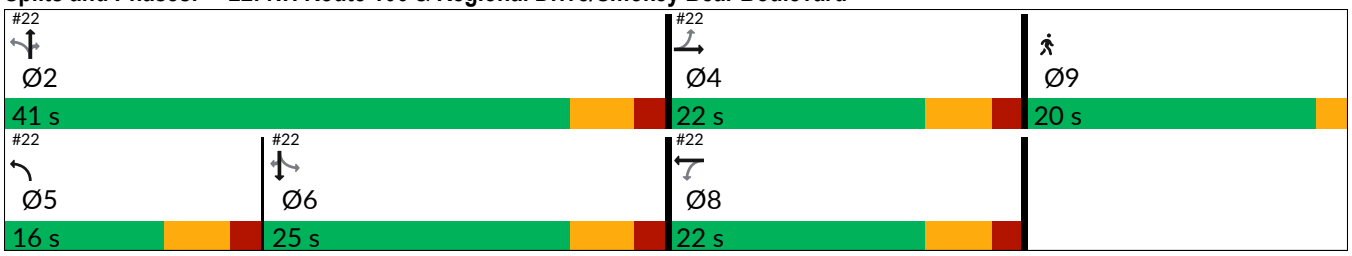
Intersection Summary
Cycle Length: 83

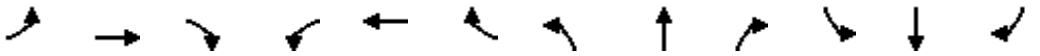
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 56.6
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

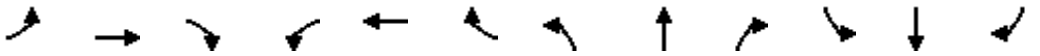




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	131	57	7	16	13	115	383	36	116	562	301
Future Volume (vph)	17	131	57	7	16	13	115	383	36	116	562	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1930		1728	1818	1599	1787	1818	1546
Flt Permitted	0.73	1.00		0.52	1.00		0.16	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	1359	1719		944	1930		285	1818	1599	941	1818	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.69	0.69	0.69	0.84	0.84	0.84	0.94	0.94	0.94
Adj. Flow (vph)	20	156	68	10	23	19	137	456	43	123	598	320
RTOR Reduction (vph)	0	18	0	0	14	0	0	0	16	0	0	193
Lane Group Flow (vph)	20	206	0	10	28	0	137	456	27	123	598	127
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	11.8	11.8		11.8	11.8		34.1	34.1	34.1	21.0	21.0	21.0
Effective Green, g (s)	13.8	13.8		13.8	13.8		36.1	36.1	36.1	23.0	23.0	23.0
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.62	0.62	0.62	0.40	0.40	0.40
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	323	409		224	460		404	1133	996	373	722	614
v/s Ratio Prot		c0.12			0.01		0.05	c0.25			c0.33	
v/s Ratio Perm	0.01			0.01			0.16		0.02	0.13		0.08
v/c Ratio	0.06	0.50		0.04	0.06		0.34	0.40	0.03	0.33	0.83	0.21
Uniform Delay, d1	17.0	19.1		17.0	17.0		7.6	5.5	4.2	12.1	15.7	11.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.0		0.1	0.1		0.5	0.2	0.0	0.5	7.8	0.2
Delay (s)	17.1	20.1		17.1	17.1		8.1	5.7	4.2	12.6	23.5	11.6
Level of Service	B	C		B	B		A	A	A	B	C	B
Approach Delay (s/veh)		19.8			17.1			6.1			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

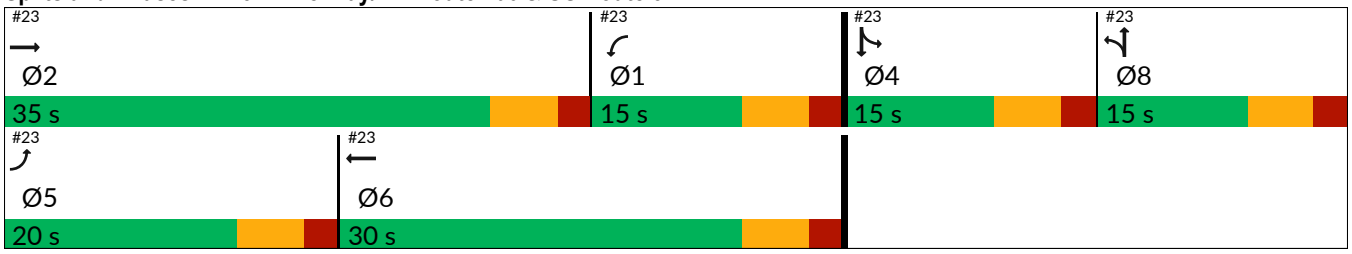
c Critical Lane Group

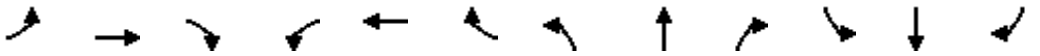


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	229	59	0	638	259	15	5	4	127	17	183
Future Volume (vph)	176	229	59	0	638	259	15	5	4	127	17	183
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Satd. Flow (RTOR)			368			368			368			368
Adj. Flow (vph)	212	276	71	0	733	298	17	6	4	141	19	203
Lane Group Flow (vph)	212	276	71	0	733	298	17	6	4	141	19	203
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	20.0	35.0		15.0	30.0		15.0	15.0		15.0	15.0	
Total Split (%)	25.0%	43.8%		18.8%	37.5%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	14.0	29.0		9.0	24.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.53	0.12	0.04		0.58	0.17	0.04	0.02	0.00	0.26	0.06	0.13
Control Delay (s/veh)	29.9	5.4	0.1		19.7	0.2	29.8	30.2	0.0	28.0	28.2	0.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.9	5.4	0.1		19.7	0.2	29.8	30.2	0.0	28.0	28.2	0.2
Queue Length 50th (ft)	66	14	0		108	0	3	2	0	23	6	0
Queue Length 95th (ft)	157	43	0		205	0	13	14	0	61	28	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150			200	250		150	250		200
Base Capacity (vph)	478	2273	1660		1648	1759	638	346	1660	638	346	1509
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.12	0.04		0.44	0.17	0.03	0.02	0.00	0.22	0.05	0.13

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 60
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

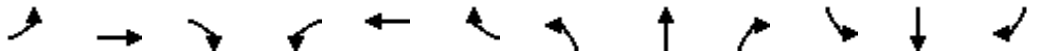




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	229	59	0	638	259	15	5	4	127	17	183
Future Volume (vph)	176	229	59	0	638	259	15	5	4	127	17	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	212	276	71	0	733	298	17	6	4	141	19	203
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	212	276	71	0	733	298	17	6	4	141	19	203
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.5	39.0	65.1		20.5	65.1	2.0	2.0	65.1	6.1	6.1	65.1
Effective Green, g (s)	14.5	41.0	65.1		22.5	65.1	4.0	4.0	65.1	8.1	8.1	65.1
Actuated g/C Ratio	0.22	0.63	1.00		0.35	1.00	0.06	0.06	1.00	0.12	0.12	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	363	2053	1660		1194	1759	194	105	1660	393	213	1509
v/s Ratio Prot	c0.13	0.08			c0.21		0.01	0.00		c0.04	0.01	
v/s Ratio Perm			0.04			c0.17			0.00			0.13
v/c Ratio	0.58	0.13	0.04		0.61	0.17	0.09	0.06	0.00	0.36	0.09	0.13
Uniform Delay, d1	22.6	4.9	0.0		17.7	0.0	28.8	28.8	0.0	26.1	25.2	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.0		0.9	0.2	0.2	0.2	0.0	0.6	0.2	0.2
Delay (s)	25.0	4.9	0.0		18.6	0.2	29.0	29.0	0.0	26.7	25.4	0.2
Level of Service	C	A	A		B	A	C	C	A	C	C	A
Approach Delay (s/veh)		11.9			13.3			24.7			11.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	824	3	0	869	22	1	0	1	28	0	297
Future Volume (vph)	557	824	3	0	869	22	1	0	1	28	0	297
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	1770	3300	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.736			0.757	
Satd. Flow (perm)	1770	3300	0	1689	3196	0	0	1398	1830	0	1299	1459
Satd. Flow (RTOR)					2				150			345
Adj. Flow (vph)	705	1043	4	0	1159	29	2	0	2	33	0	345
Lane Group Flow (vph)	705	1047	0	0	1188	0	0	2	2	0	33	345
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.11	0.39			0.91			0.01	0.01		0.24	0.75
Control Delay (s/veh)	102.3	3.1			37.9			38.0	0.0		43.3	15.5
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	102.3	3.1			37.9			38.0	0.0		43.3	15.5
Queue Length 50th (ft)	~497	67			357			1	0		20	0
Queue Length 95th (ft)	#600	83			354			4	0		48	73
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	633	2673			1312			176	361		163	485
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	1.11	0.39			0.91			0.01	0.01		0.20	0.71

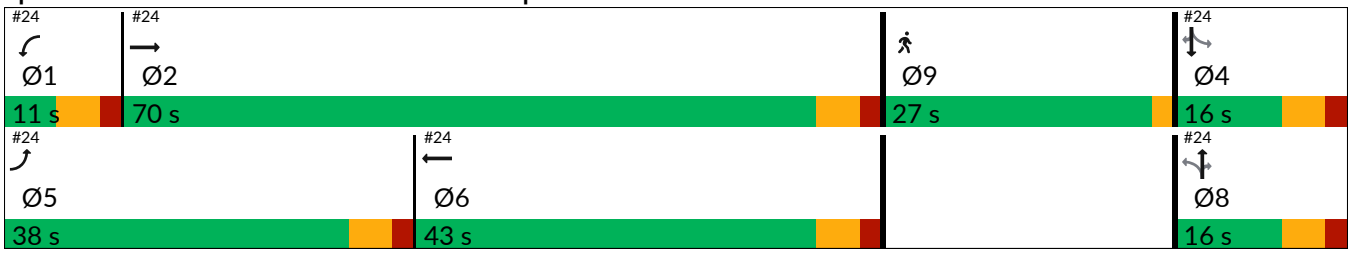
Intersection Summary
Cycle Length: 124

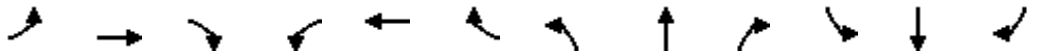
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

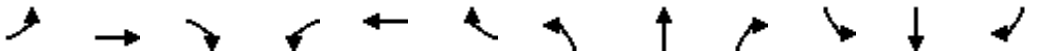




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	824	3	0	869	22	1	0	1	28	0	297
Future Volume (vph)	557	824	3	0	869	22	1	0	1	28	0	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3301			3197			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.74	1.00		0.76	1.00
Satd. Flow (perm)	1770	3301			3197			1398	1830		1299	1459
Peak-hour factor, PHF	0.79	0.79	0.79	0.75	0.75	0.75	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	705	1043	4	0	1159	29	2	0	2	33	0	345
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	2	0	0	308
Lane Group Flow (vph)	705	1047	0	0	1187	0	0	2	0	0	33	37
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	32.0	75.0			37.0			8.1	8.1		8.1	8.1
Effective Green, g (s)	34.0	77.0			39.0			10.1	10.1		10.1	10.1
Actuated g/C Ratio	0.36	0.81			0.41			0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	632	2672			1311			148	194		137	154
v/s Ratio Prot	c0.40	0.32			c0.37							
v/s Ratio Perm								0.00	0.00		c0.03	0.03
v/c Ratio	1.12	0.39			0.91			0.01	0.00		0.24	0.24
Uniform Delay, d1	30.6	2.5			26.3			38.0	38.0		39.0	39.0
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	71.9	0.1			9.1			0.0	0.0		0.9	0.8
Delay (s)	102.4	2.6			35.4			38.1	38.0		39.9	39.8
Level of Service	F	A			D			D	D		D	D
Approach Delay (s/veh)		42.8			35.4			38.0			39.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	747	7	7	1127	45	1	0	8	16	0	16
Future Volume (vph)	13	747	7	7	1127	45	1	0	8	16	0	16
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	4911	0	1652	3401	0	1805	1615	0	1727	1495	0
Flt Permitted	0.950			0.950			0.744			0.748		
Satd. Flow (perm)	1711	4911	0	1652	3401	0	1414	1615	0	1360	1495	0
Satd. Flow (RTOR)		1			5			731			186	
Adj. Flow (vph)	14	803	8	8	1281	51	2	0	14	21	0	21
Lane Group Flow (vph)	14	811	0	8	1332	0	2	14	0	21	21	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	34.0		26.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.8%	27.6%		21.1%			26.8%	26.8%		26.8%	26.8%	
Maximum Green (s)	6.0	28.0		20.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.13	0.45		0.03	0.52		0.01	0.02		0.12	0.06	
Control Delay (s/veh)	57.0	30.8		46.0	1.7		45.0	0.0		47.9	0.3	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.0	30.8		46.0	1.9		45.0	0.0		47.9	0.3	
Queue Length 50th (ft)	11	175		5	23		1	0		16	0	
Queue Length 95th (ft)	33	242		m7	43		6	0		35	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	111	1822		298	2574		333	939		320	494	
Starvation Cap Reductn	0	0		0	503		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.45		0.03	0.64		0.01	0.01		0.07	0.04	

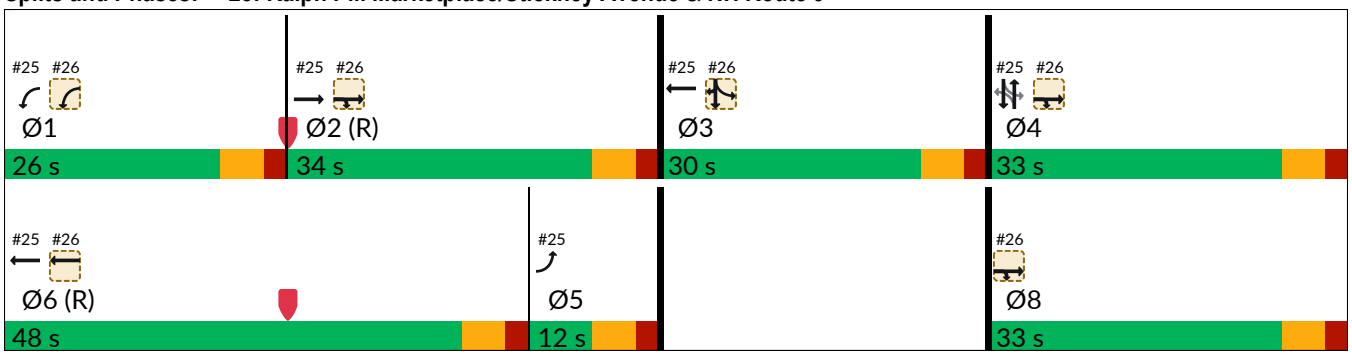
Intersection Summary
Cycle Length: 123

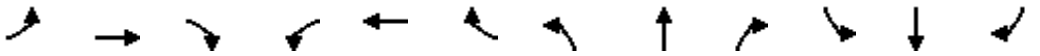
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	30.0	48.0	33.0
Total Split (%)	24%	39%	27%
Maximum Green (s)	24.0	42.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

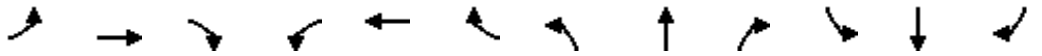




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	747	7	7	1127	45	1	0	8	16	0	16
Future Volume (vph)	13	747	7	7	1127	45	1	0	8	16	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	4909		1652	3402		1805	1615		1727	1495	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	1711	4909		1652	3402		1413	1615		1360	1495	
Peak-hour factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88	0.58	0.58	0.58	0.75	0.75	0.75
Adj. Flow (vph)	14	803	8	8	1281	51	2	0	14	21	0	21
RTOR Reduction (vph)	0	1	0	0	1	0	0	12	0	0	18	0
Lane Group Flow (vph)	14	810	0	8	1331	0	2	2	0	21	3	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	43.7		16.6	83.1		13.5	13.5		13.5	13.5	
Effective Green, g (s)	4.4	45.7		18.6	87.1		15.5	15.5		15.5	15.5	
Actuated g/C Ratio	0.04	0.37		0.15	0.71		0.13	0.13		0.13	0.13	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	61	1823		249	2409		178	203		171	188	
v/s Ratio Prot	0.01	c0.17		0.00	c0.39			0.00			0.00	
v/s Ratio Perm							0.00			c0.02		
v/c Ratio	0.23	0.44		0.03	0.55		0.01	0.01		0.12	0.01	
Uniform Delay, d1	57.7	29.1		44.5	8.6		47.0	47.0		47.7	47.1	
Progression Factor	1.00	1.00		1.08	0.23		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.8		0.0	0.2		0.0	0.0		0.3	0.0	
Delay (s)	59.6	29.9		48.2	2.2		47.1	47.0		48.0	47.1	
Level of Service	E	C		D	A		D	D		D	D	
Approach Delay (s/veh)		30.4			2.5			47.0			47.6	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	561	120	248	746	0	0	0	0	206	0	433
Future Volume (vph)	0	561	120	248	746	0	0	0	0	206	0	433
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Satd. Flow (RTOR)			129									311
Adj. Flow (vph)	0	603	129	295	888	0	0	0	0	258	0	541
Lane Group Flow (vph)	0	603	129	295	888	0	0	0	0	0	258	541
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				26.0	48.0					30.0	30.0	30.0
Total Split (%)				21.1%	39.0%					24.4%	24.4%	24.4%
Maximum Green (s)				20.0	42.0					24.0	24.0	24.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.25	0.13	0.61	0.53						0.66	0.91
Control Delay (s/veh)		1.4	0.3	60.0	15.1						53.4	41.5
Queue Delay		0.1	0.2	1.5	1.6						0.0	0.0
Total Delay (s/veh)		1.4	0.5	61.4	16.7						53.4	41.5
Queue Length 50th (ft)		6	0	109	156						194	205
Queue Length 95th (ft)		7	0	118	209						252	#305
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2982	1139	573	1687						392	592
Starvation Cap Reductn		898	530	133	584						0	0
Spillback Cap Reductn		78	0	0	4						0	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.29	0.21	0.67	0.81						0.66	0.91

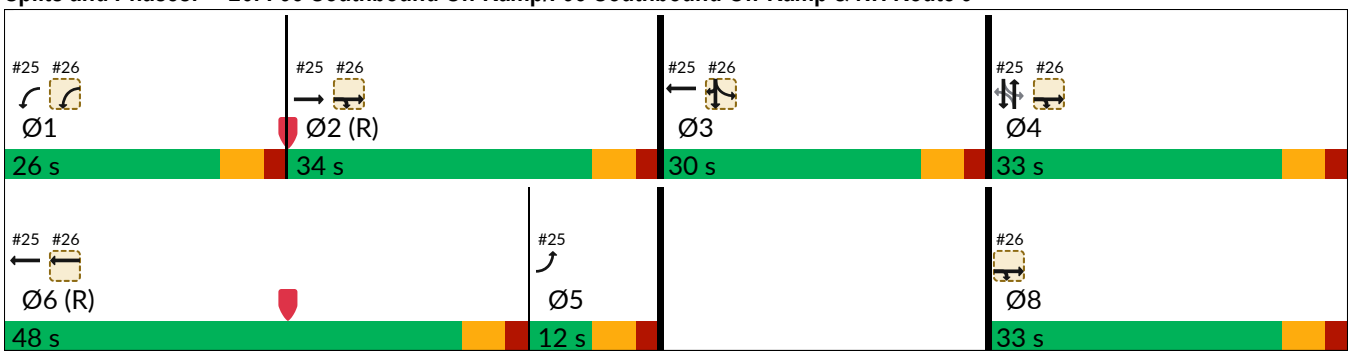
Intersection Summary
Cycle Length: 123

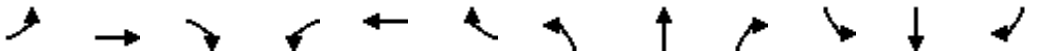
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	34.0	33.0	12.0	33.0
Total Split (%)	28%	27%	10%	27%
Maximum Green (s)	28.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

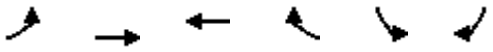




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	561	120	248	746	0	0	0	0	206	0	433
Future Volume (vph)	0	561	120	248	746	0	0	0	0	206	0	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3173	3271						1770	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3173	3271						1770	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	0	603	129	295	888	0	0	0	0	258	0	541
RTOR Reduction (vph)	0	0	65	0	0	0	0	0	0	0	0	242
Lane Group Flow (vph)	0	603	64	295	888	0	0	0	0	0	258	299
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		57.2	57.2	16.6	57.9						25.2	25.2
Effective Green, g (s)		61.2	61.2	18.6	59.9						27.2	27.2
Actuated g/C Ratio		0.50	0.50	0.15	0.49						0.22	0.22
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2446	892	479	1592						391	350
v/s Ratio Prot		c0.12	0.04	c0.09	c0.27						0.15	c0.19
v/s Ratio Perm												
v/c Ratio		0.25	0.07	0.62	0.56						0.66	0.85
Uniform Delay, d1		17.7	16.1	48.9	22.2						43.7	46.0
Progression Factor		0.12	0.01	1.12	0.66						1.00	1.00
Incremental Delay, d2		0.0	0.0	2.3	1.4						4.0	17.9
Delay (s)		2.2	0.2	57.1	16.0						47.7	63.9
Level of Service		A	A	E	B						D	E
Approach Delay (s/veh)		1.9			26.2			0.0			58.7	
Approach LOS		A			C			A			E	

Intersection Summary				
HCM 2000 Control Delay (s/veh)	29.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	54.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

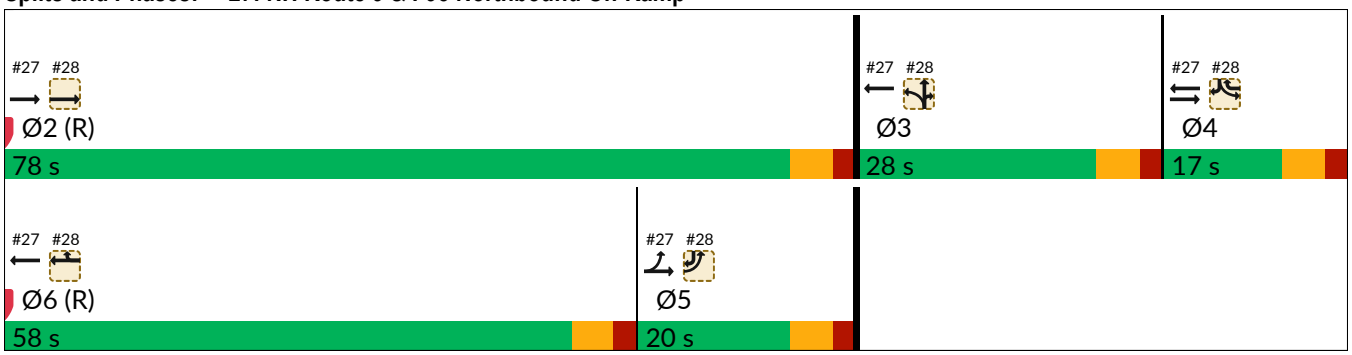


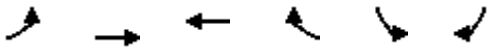
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	137	720	994	61	0	0				
Future Volume (vph)	137	720	994	61	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1652	3303	4700	1620	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1652	3303	4700	1620	0	0				
Satd. Flow (RTOR)				54						
Adj. Flow (vph)	154	809	1104	68	0	0				
Lane Group Flow (vph)	154	809	1104	68	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	20.0						78.0	28.0	17.0	58.0
Total Split (%)	16.3%						63%	23%	14%	47%
Maximum Green (s)	14.0						72.0	22.0	11.0	52.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.67	0.34	0.30	0.04						
Control Delay (s/veh)	59.0	7.4	1.6	0.0						
Queue Delay	3.8	0.6	0.2	0.0						
Total Delay (s/veh)	62.8	8.0	1.7	0.0						
Queue Length 50th (ft)	125	118	35	0						
Queue Length 95th (ft)	m#217	138	36	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	230	2507	3923	1620						
Starvation Cap Reductn	30	1214	1656	0						
Spillback Cap Reductn	0	0	263	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.77	0.63	0.49	0.04						

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	137	720	994	61	0	0
Future Volume (vph)	137	720	994	61	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	2.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1652	3303	4700	1620		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1652	3303	4700	1620		
Peak-hour factor, PHF	0.89	0.89	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	809	1104	68	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	154	809	1104	68	0	0
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	15.2	87.7	95.8	123.0		
Effective Green, g (s)	17.2	89.7	97.8	123.0		
Actuated g/C Ratio	0.14	0.73	0.80	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	231	2408	3737	1620		
v/s Ratio Prot	c0.09	c0.24	c0.23			
v/s Ratio Perm				0.04		
v/c Ratio	0.67	0.34	0.30	0.04		
Uniform Delay, d1	50.2	6.0	3.4	0.0		
Progression Factor	0.87	1.19	0.41	1.00		
Incremental Delay, d2	6.9	0.1	0.0	0.0		
Delay (s)	50.7	7.2	1.4	0.0		
Level of Service	D	A	A	A		
Approach Delay (s/veh)		14.1	1.3		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

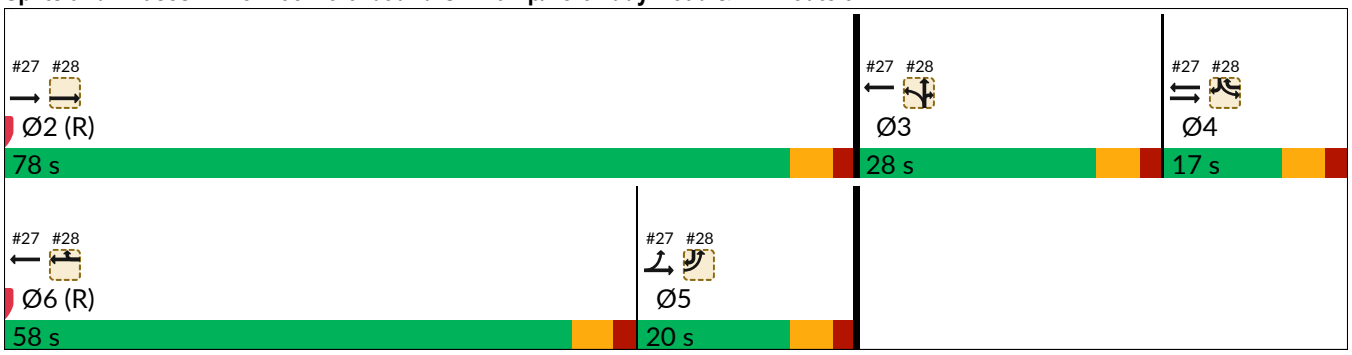
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	619	0	0	698	89	197	129	478	93	0	160
Future Volume (vph)	101	619	0	0	698	89	197	129	478	93	0	160
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.902	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3204	3421	0	0	3455	1652	1752	3028	1474	3367	0	1605
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	3421	0	0	3455	1652	1752	3028	1474	3367	0	1605
Satd. Flow (RTOR)						97		233	233			137
Adj. Flow (vph)	116	711	0	0	759	97	253	165	613	126	0	216
Lane Group Flow (vph)	116	711	0	0	759	97	253	472	306	126	0	216
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Detector Phase	5	2			6	4 6	3	3	3	4		4 5
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Minimum Split (s)	12.0	23.0			32.0		12.0	12.0	12.0	12.0		
Total Split (s)	20.0	78.0			58.0		28.0	28.0	28.0	17.0		
Total Split (%)	16.3%	63.4%			47.2%		22.8%	22.8%	22.8%	13.8%		
Maximum Green (s)	14.0	72.0			52.0		22.0	22.0	22.0	11.0		
Yellow Time (s)	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		
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0	-2.0		
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Recall Mode	None	C-Min			C-Min		None	None	None	None		
Walk Time (s)		7.0			7.0							
Flash Don't Walk (s)		10.0			19.0							
Pedestrian Calls (#/hr)		0			0							
v/c Ratio	0.26	0.36			0.55	0.10	0.70	0.58	0.63	0.30		0.41
Control Delay (s/veh)	34.3	7.1			30.2	4.0	57.6	25.3	18.1	52.5		10.7
Queue Delay	0.0	0.4			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	34.3	7.4			30.2	4.0	57.6	25.3	18.1	52.5		10.7
Queue Length 50th (ft)	46	122			217	0	196	96	56	50		33
Queue Length 95th (ft)	59	142			311	12	247	118	107	67		52
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	448	2058			1516	1024	360	808	488	420		526
Starvation Cap Reductn	0	751			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.26	0.54			0.50	0.09	0.70	0.58	0.63	0.30		0.41

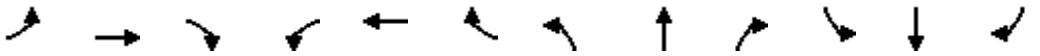
Intersection Summary

Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

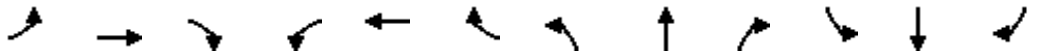




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	619	0	0	698	89	197	129	478	93	0	160
Future Volume (vph)	101	619	0	0	698	89	197	129	478	93	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3204	3421			3455	1652	1752	3030	1474	3367		1605
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3204	3421			3455	1652	1752	3030	1474	3367		1605
Peak-hour factor, PHF	0.87	0.87	0.87	0.92	0.92	0.92	0.78	0.78	0.78	0.74	0.74	0.74
Adj. Flow (vph)	116	711	0	0	759	97	253	165	613	126	0	216
RTOR Reduction (vph)	0	0	0	0	0	43	0	185	185	0	0	101
Lane Group Flow (vph)	116	711	0	0	759	54	253	287	121	126	0	115
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Actuated Green, G (s)	15.2	68.3			47.1	66.5	23.3	23.3	23.3	13.4		28.6
Effective Green, g (s)	17.2	70.3			49.1	68.5	25.3	25.3	25.3	15.4		32.6
Actuated g/C Ratio	0.14	0.57			0.40	0.56	0.21	0.21	0.21	0.13		0.27
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	448	1955			1379	920	360	623	303	421		425
v/s Ratio Prot	0.04	c0.21			c0.22	0.03	c0.14	0.09	0.08	c0.04		0.07
v/s Ratio Perm												
v/c Ratio	0.26	0.36			0.55	0.06	0.70	0.46	0.40	0.30		0.27
Uniform Delay, d1	47.2	14.3			28.5	12.5	45.4	42.9	42.3	48.9		35.8
Progression Factor	0.69	0.47			1.03	1.67	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.3	0.5			1.6	0.0	6.1	0.5	0.9	0.4		0.3
Delay (s)	32.7	7.2			30.7	20.9	51.5	43.4	43.1	49.3		36.1
Level of Service	C	A			C	C	D	D	D	D		D
Approach Delay (s/veh)		10.8			29.6			45.3			41.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

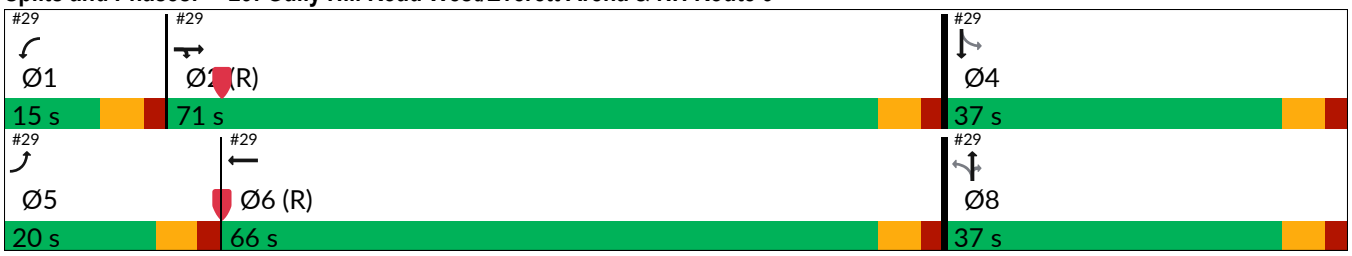


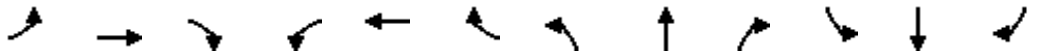
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1055	132	26	748	0	34	0	8	0	1	5
Future Volume (vph)	3	1055	132	26	748	0	34	0	8	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1728	3455	1492	1728	3455	0	0	1752	1620	0	1792	0
Flt Permitted	0.950			0.950				0.748				
Satd. Flow (perm)	1728	3455	1492	1728	3455	0	0	1380	1620	0	1792	0
Satd. Flow (RTOR)			80						80		12	
Adj. Flow (vph)	4	1302	163	27	787	0	40	0	9	0	2	12
Lane Group Flow (vph)	4	1302	163	27	787	0	0	40	9	0	14	0
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0	
Total Split (s)	20.0	71.0	71.0	15.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	16.3%	57.7%	57.7%	12.2%	53.7%		30.1%	30.1%	30.1%	30.1%	30.1%	
Maximum Green (s)	14.0	65.0	65.0	9.0	60.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
v/c Ratio	0.04	0.47	0.13	0.20	0.27			0.32	0.04		0.08	
Control Delay (s/veh)	59.0	6.1	3.1	63.6	2.1			58.4	0.4		26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	59.0	6.1	3.1	63.6	2.1			58.4	0.4		26.7	
Queue Length 50th (ft)	2	223	18	21	46			31	0		1	
Queue Length 95th (ft)	m8	158	7	57	46			64	0		6	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150								
Base Capacity (vph)	224	2763	1209	156	2936			370	493		489	
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	0.02	0.47	0.13	0.17	0.27			0.11	0.02		0.03	

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 55 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1055	132	26	748	0	34	0	8	0	1	5
Future Volume (vph)	3	1055	132	26	748	0	34	0	8	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	3455			1752	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	3455			1380	1620		1792	
Peak-hour factor, PHF	0.81	0.81	0.81	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	4	1302	163	27	787	0	40	0	9	0	2	12
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	8	0	11	0
Lane Group Flow (vph)	4	1302	144	27	787	0	0	40	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.3	92.0	92.0	5.1	95.8			7.9	7.9		7.9	
Effective Green, g (s)	3.3	94.0	94.0	7.1	97.8			9.9	9.9		9.9	
Actuated g/C Ratio	0.03	0.76	0.76	0.06	0.80			0.08	0.08		0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2640	1140	99	2747			111	130		144	
v/s Ratio Prot	0.00	c0.38	0.10	c0.02	c0.23						0.00	
v/s Ratio Perm								c0.03	0.00			
v/c Ratio	0.09	0.49	0.13	0.27	0.29			0.36	0.01		0.02	
Uniform Delay, d1	58.4	5.5	3.8	55.5	3.3			53.6	52.0		52.1	
Progression Factor	1.09	0.91	1.03	1.14	0.64			1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.6	0.2	1.5	0.3			2.0	0.0		0.1	
Delay (s)	64.2	5.6	4.1	64.9	2.4			55.5	52.0		52.1	
Level of Service	E	A	A	E	A			E	D		D	
Approach Delay (s/veh)		5.6			4.5			54.9			52.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1044	16	1	41	745	1	29	0	38	1	0
Future Volume (vph)	3	1044	16	1	41	745	1	29	0	38	1	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.998							0.850			
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Satd. Flow (RTOR)		1							541			
Adj. Flow (vph)	4	1374	21	1	46	828	1	31	0	40	4	0
Lane Group Flow (vph)	4	1395	0	0	47	829	0	31	40	0	4	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	15.0	50.0		15.0	15.0	50.0		14.0	15.0		14.0	15.0
Total Split (%)	12.2%	40.7%		12.2%	12.2%	40.7%		11.4%	12.2%		11.4%	12.2%
Maximum Green (s)	9.0	44.0		9.0	9.0	44.0		8.0	9.0		8.0	9.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.53			0.31	0.28		0.19	0.07		0.03	
Control Delay (s/veh)	68.7	5.3			57.2	3.7		52.0	0.2		54.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	
Total Delay (s/veh)	68.7	5.3			57.2	3.7		52.0	0.2		54.0	
Queue Length 50th (ft)	3	9			36	46		25	0		3	
Queue Length 95th (ft)	m8	100			74	177		54	0		5	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	154	2646			165	2928		170	628		151	
Starvation Cap Reductn	0	49			0	0		0	0		0	
Spillback Cap Reductn	0	0			0	0		0	0		0	
Storage Cap Reductn	0	0			0	0		0	0		0	
Reduced v/c Ratio	0.03	0.54			0.28	0.28		0.18	0.06		0.03	

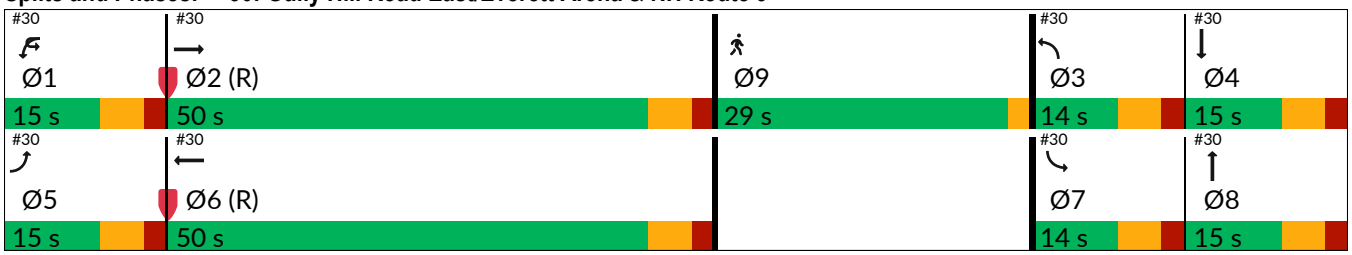
Intersection Summary
Cycle Length: 123

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		24%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 123
Offset: 61 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



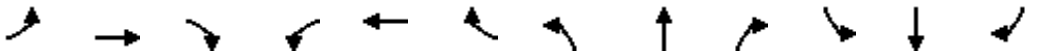
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1044	16	1	41	745	1	29	0	38	1	0
Future Volume (vph)	3	1044	16	1	41	745	1	29	0	38	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	
Frt	1.00	1.00			1.00	1.00		1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (prot)	1728	3447			1728	3454		1703	1524		1865	
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (perm)	1728	3447			1728	3454		1703	1524		1865	
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	4	1374	21	1	46	828	1	31	0	40	4	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	37	0	0	0
Lane Group Flow (vph)	4	1395	0	0	47	829	0	31	3	0	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.3	83.2			7.6	89.5		7.0	6.9		1.3	
Effective Green, g (s)	3.3	85.2			9.6	91.5		9.0	8.9		3.3	
Actuated g/C Ratio	0.03	0.69			0.08	0.74		0.07	0.07		0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2387			134	2569		124	110		50	
v/s Ratio Prot	0.00	c0.40			c0.03	0.24		c0.02	c0.00		0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.58			0.35	0.32		0.25	0.03		0.08	
Uniform Delay, d1	58.4	9.8			53.7	5.3		53.8	53.0		58.4	
Progression Factor	1.27	0.55			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.7	1.0			1.6	0.3		1.1	0.1		0.7	
Delay (s)	74.8	6.3			55.3	5.6		54.9	53.1		59.1	
Level of Service	E	A			E	A		D	D		E	
Approach Delay (s/veh)		6.5				8.3			53.9			59.1
Approach LOS		A				A			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

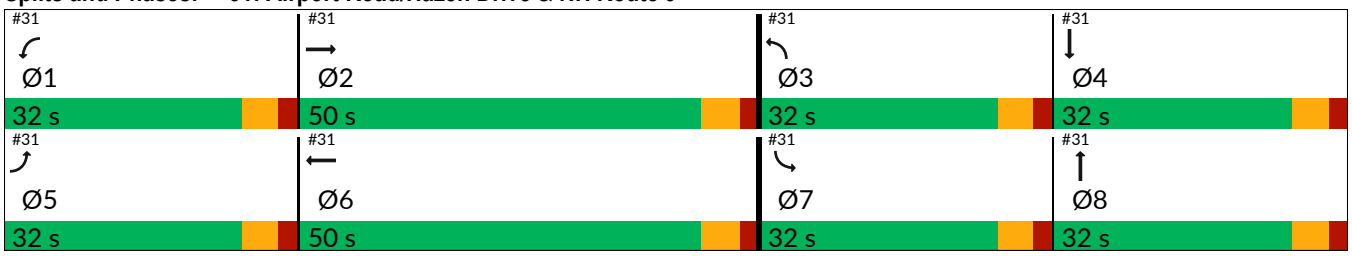


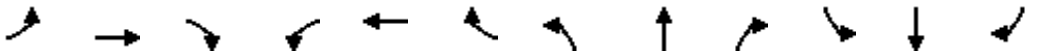
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	542	212	150	611	124	105	125	106	21	121	72
Future Volume (vph)	267	542	212	150	611	124	105	125	106	21	121	72
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			283			157			157			157
Adj. Flow (vph)	356	723	283	161	657	133	122	145	123	27	155	92
Lane Group Flow (vph)	356	723	283	161	657	133	122	145	123	27	155	92
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.75	0.55	0.18	0.56	0.69	0.08	0.50	0.30	0.08	0.18	0.55	0.06
Control Delay (s/veh)	50.3	30.2	0.2	51.2	39.4	0.1	52.3	36.7	0.1	54.0	51.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.3	30.2	0.2	51.2	39.4	0.1	52.3	36.7	0.1	54.0	51.4	0.1
Queue Length 50th (ft)	223	200	0	102	210	0	79	86	0	18	101	0
Queue Length 95th (ft)	#370	277	0	202	323	0	158	159	0	47	171	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	476	1512	1599	476	1512	1652	451	507	1568	446	470	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.48	0.18	0.34	0.43	0.08	0.27	0.29	0.08	0.06	0.33	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 107.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

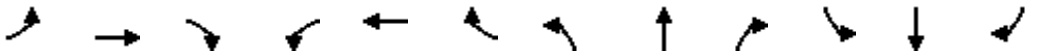




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	542	212	150	611	124	105	125	106	21	121	72
Future Volume (vph)	267	542	212	150	611	124	105	125	106	21	121	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.75	0.75	0.75	0.93	0.93	0.93	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	356	723	283	161	657	133	122	145	123	27	155	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	356	723	283	161	657	133	122	145	123	27	155	92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	26.6	38.8	109.9	15.5	27.7	109.9	13.5	26.9	109.9	4.7	18.1	109.9
Effective Green, g (s)	28.6	40.8	109.9	17.5	29.7	109.9	15.5	28.9	109.9	6.7	20.1	109.9
Actuated g/C Ratio	0.26	0.37	1.00	0.16	0.27	1.00	0.14	0.26	1.00	0.06	0.18	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465	1282	1599	284	933	1652	238	468	1568	102	322	1501
v/s Ratio Prot	c0.20	0.21		0.09	c0.19		c0.07	0.08		0.02	c0.09	
v/s Ratio Perm			0.18			0.08			0.08			0.06
v/c Ratio	0.77	0.56	0.18	0.57	0.70	0.08	0.51	0.31	0.08	0.26	0.48	0.06
Uniform Delay, d1	37.6	27.5	0.0	42.7	36.1	0.0	43.7	32.5	0.0	49.2	40.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.6	0.2	2.6	2.4	0.1	1.9	0.4	0.1	1.4	1.1	0.1
Delay (s)	44.9	28.0	0.2	45.3	38.6	0.1	45.6	32.9	0.1	50.6	41.4	0.1
Level of Service	D	C	A	D	D	A	D	C	A	D	D	A
Approach Delay (s/veh)		26.7			34.3			26.5			28.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	432	22	7	503	179	84	99	8	164	186	117
Future Volume (vph)	46	432	22	7	503	179	84	99	8	164	186	117
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.993			0.961			0.989			0.945	
Flt Protected	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (prot)	1787	3313	0	1652	3288	0	1652	1719	0	1585	1684	0
Flt Permitted	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (perm)	1787	3313	0	1652	3288	0	1652	1719	0	1585	1684	0
Satd. Flow (RTOR)		3			33			2			17	
Adj. Flow (vph)	51	480	24	8	547	195	120	141	11	189	214	134
Lane Group Flow (vph)	51	504	0	8	742	0	120	152	0	170	367	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.25	0.36		0.05	0.68		0.42	0.51		0.43	0.86	
Control Delay (s/veh)	44.4	19.5		44.7	30.3		41.3	42.8		37.6	55.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.4	19.5		44.7	30.3		41.3	42.8		37.6	55.5	
Queue Length 50th (ft)	29	95		5	196		68	86		95	224	
Queue Length 95th (ft)	70	184		21	295		98	117		177	#444	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125			130			350		
Base Capacity (vph)	341	1534		315	1276		408	426		391	429	
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	0.15	0.33		0.03	0.58		0.29	0.36		0.43	0.86	

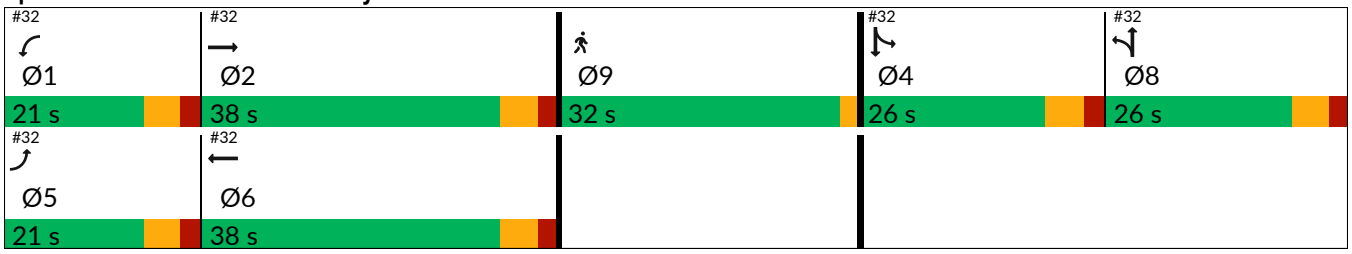
Intersection Summary
Cycle Length: 143

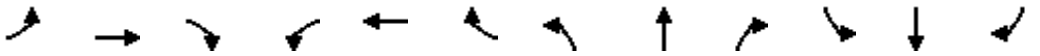
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 91.8
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9

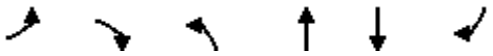




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	432	22	7	503	179	84	99	8	164	186	117
Future Volume (vph)	46	432	22	7	503	179	84	99	8	164	186	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3312		1652	3286		1652	1720		1585	1685	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3312		1652	3286		1652	1720		1585	1685	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.70	0.70	0.70	0.87	0.87	0.87
Adj. Flow (vph)	51	480	24	8	547	195	120	141	11	189	214	134
RTOR Reduction (vph)	0	2	0	0	22	0	0	2	0	0	13	0
Lane Group Flow (vph)	51	502	0	8	720	0	120	150	0	170	354	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	6.7	36.6		1.2	31.1		13.7	13.7		20.6	20.6	
Effective Green, g (s)	8.7	38.6		3.2	33.1		15.7	15.7		22.6	22.6	
Actuated g/C Ratio	0.09	0.40		0.03	0.34		0.16	0.16		0.24	0.24	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	161	1330		55	1131		269	280		372	396	
v/s Ratio Prot	c0.03	0.15		0.00	c0.22		0.07	c0.09		0.11	c0.21	
v/s Ratio Perm												
v/c Ratio	0.32	0.38		0.15	0.64		0.45	0.54		0.46	0.89	
Uniform Delay, d1	40.9	20.3		45.1	26.5		36.3	36.9		31.5	35.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.2		1.2	1.2		1.2	2.0		0.9	21.7	
Delay (s)	42.1	20.5		46.3	27.6		37.5	38.8		32.4	57.3	
Level of Service	D	C		D	C		D	D		C	E	
Approach Delay (s/veh)		22.4			27.8			38.2			49.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

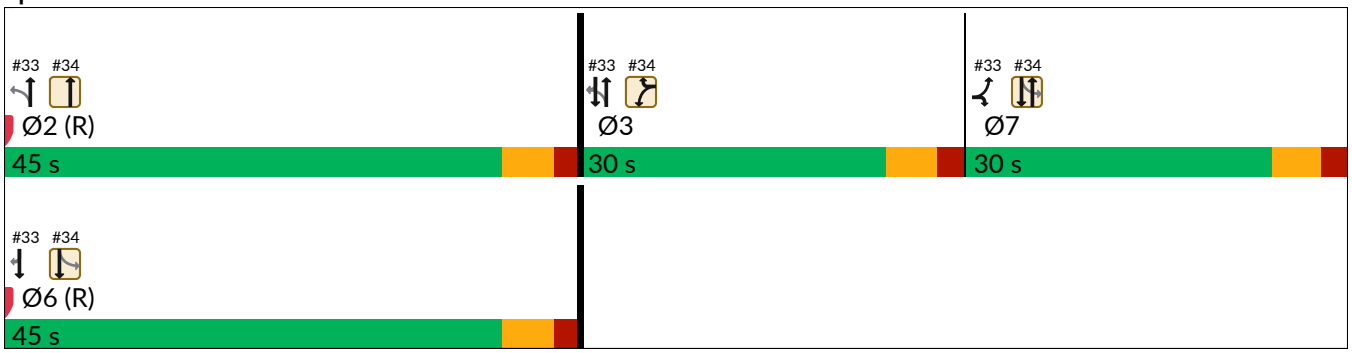


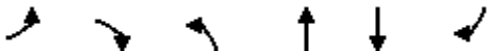
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	104	11	26	292	421	521			
Future Volume (vph)	104	11	26	292	421	521			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	1719	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.940					
Satd. Flow (perm)	1719	1538	0	1676	1881	1546			
Satd. Flow (RTOR)		16				628			
Adj. Flow (vph)	149	16	31	352	507	628			
Lane Group Flow (vph)	149	16	0	383	507	628			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.34	0.04		0.34	0.40	0.50			
Control Delay (s/veh)	35.1	13.6		8.3	8.9	3.2			
Queue Delay	0.0	0.0		0.0	1.3	0.6			
Total Delay (s/veh)	35.1	13.6		8.3	10.2	3.8			
Queue Length 50th (ft)	86	0		99	168	55			
Queue Length 95th (ft)	111	12		132	208	39			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	434	400		1120	1257	1241			
Starvation Cap Reductn	0	0		0	515	284			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.34	0.04		0.34	0.68	0.66			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	11	26	292	421	521
Future Volume (vph)	104	11	26	292	421	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1719	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.94	1.00	1.00
Satd. Flow (perm)	1719	1538		1676	1881	1546
Peak-hour factor, PHF	0.70	0.70	0.83	0.83	0.83	0.83
Adj. Flow (vph)	149	16	31	352	507	628
RTOR Reduction (vph)	0	12	0	0	0	206
Lane Group Flow (vph)	149	4	0	383	507	422
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	24.5	24.5		68.5	68.5	68.5
Effective Green, g (s)	26.5	26.5		70.5	70.5	70.5
Actuated g/C Ratio	0.25	0.25		0.67	0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	433	388		1125	1262	1038
v/s Ratio Prot	c0.09	0.00			0.27	
v/s Ratio Perm				0.23		c0.27
v/c Ratio	0.34	0.01		0.34	0.40	0.41
Uniform Delay, d1	32.1	29.4		7.3	7.8	7.8
Progression Factor	1.00	1.00		1.00	1.04	3.74
Incremental Delay, d2	0.5	0.0		0.2	0.2	0.2
Delay (s)	32.6	29.4		7.5	8.2	29.3
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	32.3			7.5	19.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

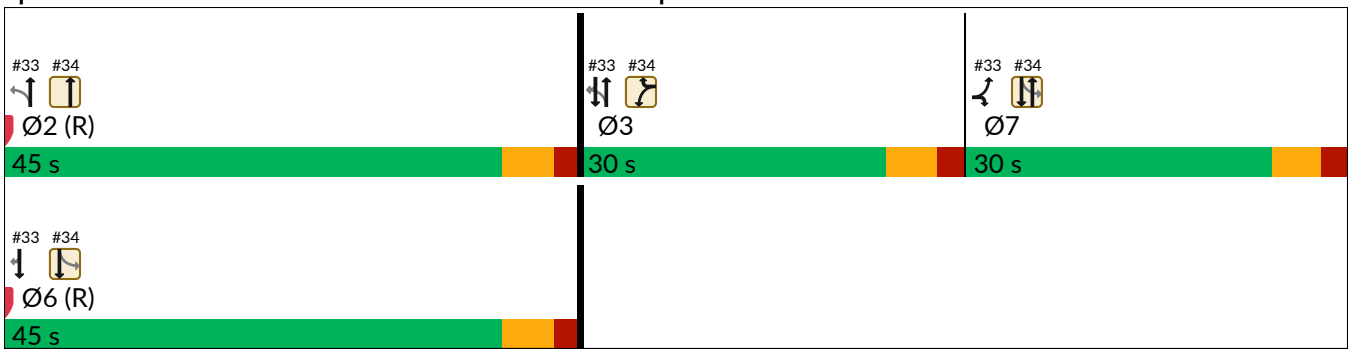
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	265	137	365	49	33	691			
Future Volume (vph)	265	137	365	49	33	691			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.982						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3264	0	1728	1818			
Flt Permitted	0.950				0.439				
Satd. Flow (perm)	1770	1583	3264	0	798	1818			
Satd. Flow (RTOR)		151	31						
Adj. Flow (vph)	308	159	468	63	39	813			
Lane Group Flow (vph)	308	159	531	0	39	813			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.68	0.31	0.24		0.07	0.67			
Control Delay (s/veh)	44.3	7.8	4.6		6.4	13.8			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	44.3	7.8	4.8		6.4	13.8			
Queue Length 50th (ft)	192	4	42		8	289			
Queue Length 95th (ft)	275	49	47		18	369			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	455	519	2233		543	1238			
Starvation Cap Reductn	0	0	972		0	0			
Spillback Cap Reductn	0	0	0		0	4			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.68	0.31	0.42		0.07	0.66			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

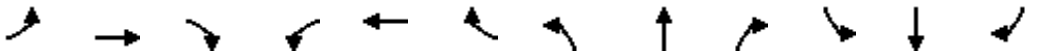


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	265	137	365	49	33	691
Future Volume (vph)	265	137	365	49	33	691
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3264		1728	1818
Flt Permitted	0.95	1.00	1.00		0.44	1.00
Satd. Flow (perm)	1770	1583	3264		799	1818
Peak-hour factor, PHF	0.86	0.86	0.78	0.78	0.85	0.85
Adj. Flow (vph)	308	159	468	63	39	813
RTOR Reduction (vph)	0	112	10	0	0	0
Lane Group Flow (vph)	308	47	521	0	39	813
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	24.8	24.8	68.2		68.2	68.2
Effective Green, g (s)	26.8	26.8	70.2		70.2	70.2
Actuated g/C Ratio	0.26	0.26	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	451	404	2182		534	1215
v/s Ratio Prot	c0.17	0.03	0.16			c0.45
v/s Ratio Perm					0.05	
v/c Ratio	0.68	0.12	0.24		0.07	0.67
Uniform Delay, d1	35.3	30.0	6.9		6.1	10.4
Progression Factor	1.00	1.00	0.67		1.00	1.00
Incremental Delay, d2	4.2	0.1	0.1		0.1	1.4
Delay (s)	39.5	30.1	4.6		6.1	11.8
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	36.3		4.6			11.6
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

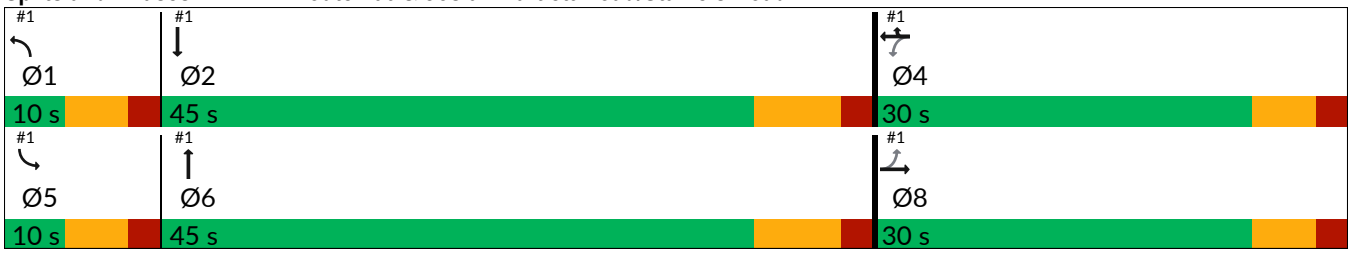
2027 No-Build Weekday Evening Peak-Hour

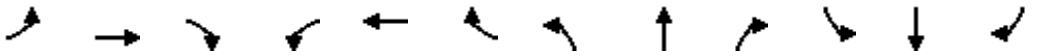


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	68	1	62	1	1097	129	31	564	6
Future Volume (vph)	0	2	4	68	1	62	1	1097	129	31	564	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910				0.850		0.984			0.999	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1811	1583	1787	3517	0	1770	3536	0
Flt Permitted					0.723		0.950			0.950		
Satd. Flow (perm)	0	1662	0	0	1374	1583	1787	3517	0	1770	3536	0
Satd. Flow (RTOR)		6				135		20			2	
Adj. Flow (vph)	0	3	6	76	1	69	1	1167	137	33	606	6
Lane Group Flow (vph)	0	9	0	0	77	69	1	1304	0	33	612	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.30	0.17	0.01	0.55		0.26	0.25	
Control Delay (s/veh)		17.3			27.2	1.4	32.0	9.4		36.7	5.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.3			27.2	1.4	32.0	9.4		36.7	5.8	
Queue Length 50th (ft)		1			22	0	0	109		11	40	
Queue Length 95th (ft)		8			67	5	5	284		42	110	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		782			643	813	128	2468		127	2575	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.12	0.08	0.01	0.53		0.26	0.24	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 58.9
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

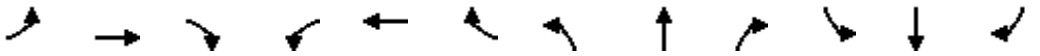
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	68	1	62	1	1097	129	31	564	6
Future Volume (vph)	0	2	4	68	1	62	1	1097	129	31	564	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.91			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1663			1811	1583	1787	3518		1770	3534	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1663			1373	1583	1787	3518		1770	3534	
Peak-hour factor, PHF	0.63	0.63	0.63	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	3	6	76	1	69	1	1167	137	33	606	6
RTOR Reduction (vph)	0	5	0	0	0	59	0	8	0	0	1	0
Lane Group Flow (vph)	0	4	0	0	77	10	1	1296	0	33	611	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.3			7.3	7.3	0.6	36.8		1.3	37.5	
Effective Green, g (s)		9.3			9.3	9.3	0.6	38.8		1.3	39.5	
Actuated g/C Ratio		0.14			0.14	0.14	0.01	0.60		0.02	0.61	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		238			196	226	16	2103		35	2150	
v/s Ratio Prot		0.00				0.01	0.00	c0.37		c0.02	0.17	
v/s Ratio Perm					c0.06							
v/c Ratio		0.02			0.39	0.04	0.06	0.62		0.94	0.28	
Uniform Delay, d1		23.9			25.2	24.0	31.9	8.3		31.8	6.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.3	0.1	1.6	0.5		128.2	0.1	
Delay (s)		23.9			26.5	24.0	33.5	8.9		159.9	6.1	
Level of Service		C			C	C	C	A		F	A	
Approach Delay (s/veh)		23.9			25.4			8.9			14.0	
Approach LOS		C			C			A			B	

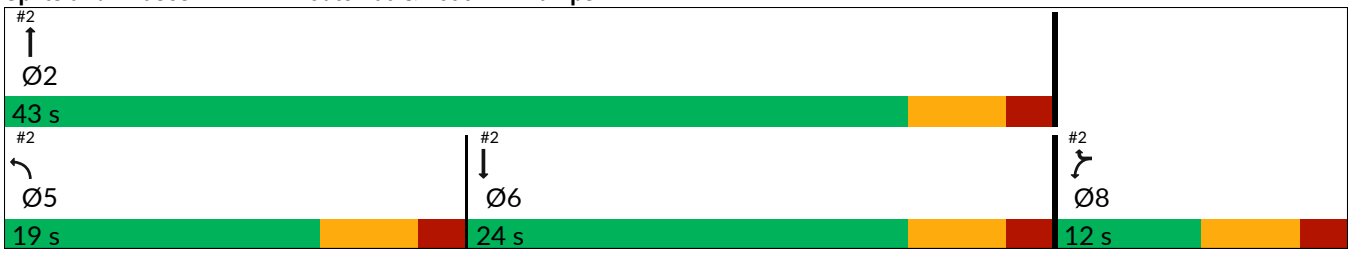
Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	15.5
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

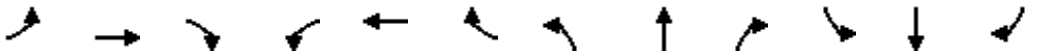


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	0	15	606	1487	0	0	402	430
Future Volume (vph)	0	0	0	7	0	15	606	1487	0	0	402	430
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Satd. Flow (RTOR)						179						448
Adj. Flow (vph)	0	0	0	10	0	22	638	1565	0	0	419	448
Lane Group Flow (vph)	0	0	0	10	0	22	638	1565	0	0	419	448
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.03		0.05	0.54	0.51			0.35	0.29
Control Delay (s/veh)				19.3		0.2	15.0	3.0			11.7	0.5
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.3		0.2	15.0	3.0			11.7	0.5
Queue Length 50th (ft)				1		0	37	0			29	0
Queue Length 95th (ft)				10		0	143	150			82	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				399		486	1373	3084			1851	1531
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				0.03		0.05	0.46	0.51			0.23	0.29

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 40.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

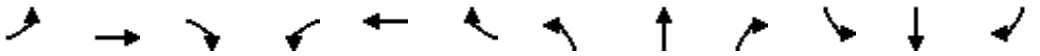




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	0	15	606	1487	0	0	402	430
Future Volume (vph)	0	0	0	7	0	15	606	1487	0	0	402	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1847		1599	3385	3490			3421	1531
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1847		1599	3385	3490			3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	10	0	22	638	1565	0	0	419	448
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	10	0	2	638	1565	0	0	419	448
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.8		1.8	11.9	30.3			12.4	44.1
Effective Green, g (s)				3.8		3.8	13.9	32.3			14.4	44.1
Actuated g/C Ratio				0.09		0.09	0.32	0.73			0.33	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				159		137	1066	2556			1117	1531
v/s Ratio Prot				0.01		0.00	0.19	c0.45			0.12	
v/s Ratio Perm												c0.29
v/c Ratio				0.06		0.01	0.60	0.61			0.38	0.29
Uniform Delay, d1				18.5		18.4	12.7	2.9			11.4	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		0.0	0.9	0.4			0.2	0.5
Delay (s)				18.7		18.5	13.7	3.3			11.6	0.5
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			18.5			6.3			5.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	44.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

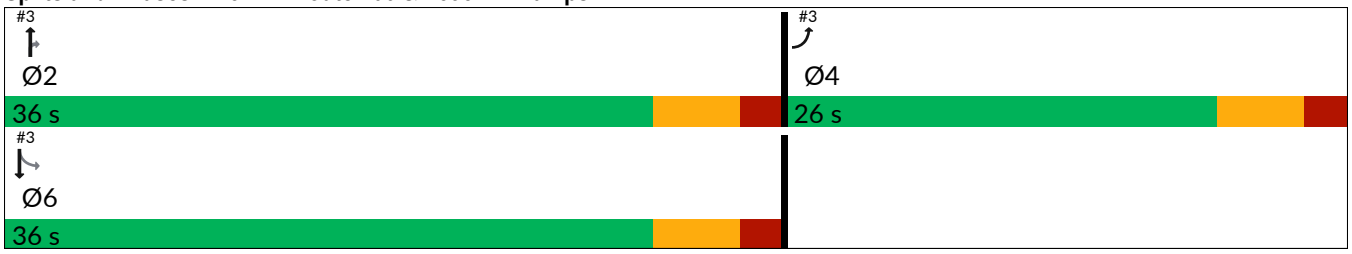
c Critical Lane Group

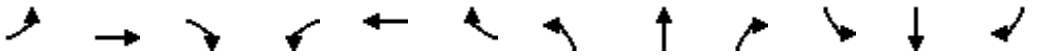


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	864	0	736	0	0	0	0	1239	8	8	401	0
Future Volume (vph)	864	0	736	0	0	0	0	1239	8	8	401	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.921	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3214	0
Satd. Flow (RTOR)			743						53			
Adj. Flow (vph)	873	0	743	0	0	0	0	1362	9	10	483	0
Lane Group Flow (vph)	873	0	743	0	0	0	0	1362	9	0	493	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.73		0.26					0.76	0.01		0.30	
Control Delay (s/veh)	21.3		0.2					15.1	0.0		8.9	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	21.3		0.2					15.1	0.0		8.9	
Queue Length 50th (ft)	143		0					198	0		51	
Queue Length 95th (ft)	203		0					277	0		70	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1309		2814					1897	872		1764	
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	0.67		0.26					0.72	0.01		0.28	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 58.9
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	864	0	736	0	0	0	0	1239	8	8	401	0
Future Volume (vph)	864	0	736	0	0	0	0	1239	8	8	401	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3486	
Flt Permitted	0.95		1.00					1.00	1.00		0.92	
Satd. Flow (perm)	3467		2814					3455	1546		3213	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	873	0	743	0	0	0	0	1362	9	10	483	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	873	0	743	0	0	0	0	1362	5	0	493	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	18.4		58.8					28.4	28.4		28.4	
Effective Green, g (s)	20.4		58.8					30.4	30.4		30.4	
Actuated g/C Ratio	0.35		1.00					0.52	0.52		0.52	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1202		2814					1786	799		1661	
v/s Ratio Prot	c0.25							c0.39				
v/s Ratio Perm			0.26						0.00		0.15	
v/c Ratio	0.73		0.26					0.76	0.01		0.30	
Uniform Delay, d1	16.8		0.0					11.3	6.9		8.1	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	2.2		0.2					2.0	0.0		0.1	
Delay (s)	19.0		0.2					13.3	6.9		8.2	
Level of Service	B		A					B	A		A	
Approach Delay (s/veh)		10.4			0.0			13.3			8.2	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

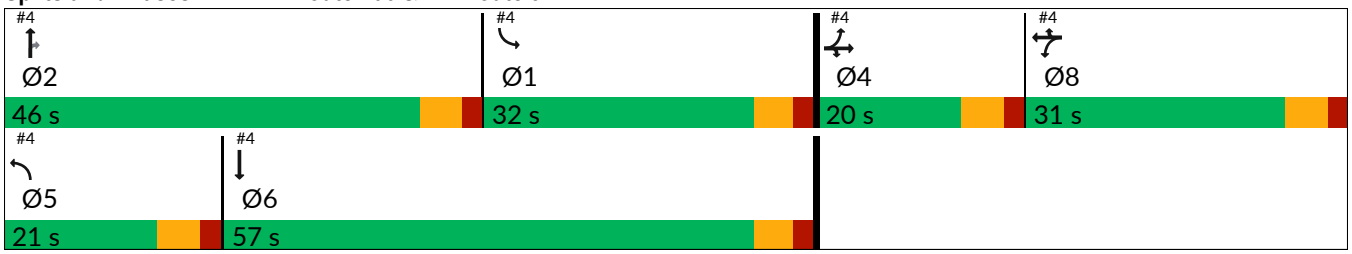
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	470	302	53	242	22	48	53	729	445	88	619	431
Future Volume (vph)	470	302	53	242	22	48	53	729	445	88	619	431
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.959		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1557	3143	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.959		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1557	3143	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			489			406
Adj. Flow (vph)	516	332	58	285	26	56	58	801	489	97	680	474
Lane Group Flow (vph)	516	332	58	142	169	56	58	801	489	97	680	474
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.87	1.03	0.14	0.51	0.30	0.13	0.29	0.63	0.56	0.40	0.51	0.26
Control Delay (s/veh)	58.0	101.5	0.7	45.6	38.0	0.7	47.5	28.5	5.0	47.0	24.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.0	101.5	0.7	45.6	38.0	0.7	47.5	28.5	5.0	47.0	24.6	0.4
Queue Length 50th (ft)	167	~242	0	91	52	0	34	214	0	57	167	0
Queue Length 95th (ft)	#344	#513	0	165	89	0	82	335	74	121	262	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	594	322	420	465	940	582	325	1608	981	536	2029	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	169	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.03	0.14	0.31	0.18	0.10	0.18	0.50	0.50	0.18	0.37	0.26

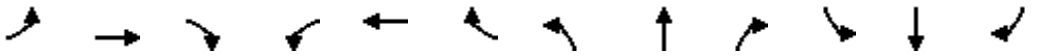
Intersection Summary

Cycle Length: 129
Actuated Cycle Length: 94.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	470	302	53	242	22	48	53	729	445	88	619	431
Future Volume (vph)	470	302	53	242	22	48	53	729	445	88	619	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1557	3144	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1557	3144	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	516	332	58	285	26	56	58	801	489	97	680	474
RTOR Reduction (vph)	0	0	48	0	0	46	0	0	310	0	0	0
Lane Group Flow (vph)	516	332	10	142	169	10	58	801	179	97	680	474
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.7	14.7	14.7	14.7	14.7	14.7	7.2	32.8	32.8	9.1	34.7	95.3
Effective Green, g (s)	16.7	16.7	16.7	16.7	16.7	16.7	9.2	34.8	34.8	11.1	36.7	95.3
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.10	0.37	0.37	0.12	0.39	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	587	318	270	272	550	268	166	1261	564	201	1330	1812
v/s Ratio Prot	0.15	c0.18	0.01	c0.09	0.05	0.01	0.03	c0.23		0.06	c0.20	
v/s Ratio Perm									0.12			0.26
v/c Ratio	0.88	1.04	0.04	0.52	0.31	0.04	0.35	0.64	0.32	0.48	0.51	0.26
Uniform Delay, d1	38.3	39.3	32.6	35.7	34.3	32.6	40.3	25.0	21.7	39.4	22.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	62.4	0.1	1.8	0.3	0.1	1.3	1.1	0.3	1.8	0.3	0.4
Delay (s)	52.3	101.7	32.7	37.5	34.6	32.7	41.5	26.1	22.0	41.2	22.8	0.4
Level of Service	D	F	C	D	C	C	D	C	C	D	C	A
Approach Delay (s/veh)		69.2			35.4			25.3			15.7	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	35.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1	15	73	1	159	11	769	20	98	712	5
Future Vol, veh/h	4	1	15	73	1	159	11	769	20	98	712	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	32	32	32	85	85	85	84	84	84	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	3	3	3
Mvmt Flow	13	3	47	86	1	187	13	915	24	100	727	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1871	1895	729	1870	1873	915	732	0	0	939	0	0
Stage 1	929	929	-	942	942	-	-	-	-	-	-	-
Stage 2	942	965	-	928	932	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.13	-	-
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	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	56	71	426	~ 56	73	333	877	-	-	726	-	-
Stage 1	324	349	-	318	344	-	-	-	-	-	-	-
Stage 2	318	336	-	324	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	20	60	426	~ 40	62	333	877	-	-	726	-	-
Mov Cap-2 Maneuver	20	60	-	~ 40	62	-	-	-	-	-	-	-
Stage 1	279	301	-	314	339	-	-	-	-	-	-	-
Stage 2	137	331	-	246	300	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	88.22	251.09	0.13	1.29
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	877	-	-	24	426	40	333	726	-	-
HCM Lane V/C Ratio	0.015	-	-	0.664	0.11	2.128	0.562	0.138	-	-
HCM Ctrl Dly (s/v)	9.2	-	-	$ 309.4	14.5	$ 735.3	28.8	10.8	-	-
HCM Lane LOS	A	-	-	F	B	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2	0.4	9.2	3.3	0.5	-	-

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

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	144	148	1005	665	135
Future Vol, veh/h	37	144	148	1005	665	135
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	90	90	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	39	150	164	1117	700	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2146	700	842	0	-	0
Stage 1	700	-	-	-	-	-
Stage 2	1446	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	54	441	798	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	43	441	798	-	-	-
Mov Cap-2 Maneuver	43	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	218	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	65.85	1.37	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	798	-	43	441	-	-
HCM Lane V/C Ratio	0.206	-	0.905	0.34	-	-
HCM Ctrl Dly (s/v)	10.7	-	254.8	17.3	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.8	-	3.6	1.5	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	19	22	1120	763	46
Future Vol, veh/h	33	19	22	1120	763	46
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	92	92
Heavy Vehicles, %	0	0	1	1	3	3
Mvmt Flow	38	22	25	1273	829	50

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2152	829	879	0	-	0
Stage 1	829	-	-	-	-	-
Stage 2	1323	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	54	373	773	-	-	-
Stage 1	432	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	52	373	773	-	-	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	251	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	116.79	0.19	0
HCM LOS	F		

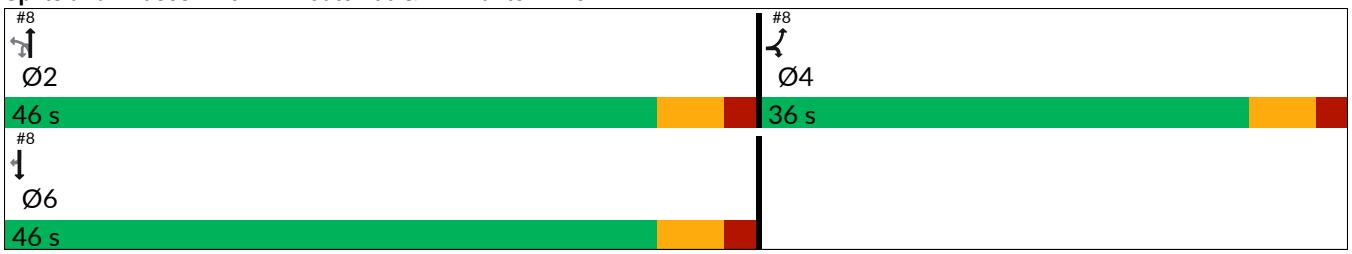
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	773	-	52	373	-	-
HCM Lane V/C Ratio	0.032	-	0.724	0.058	-	-
HCM Ctrl Dly (s/v)	9.8	-	175.3	15.2	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	3	0.2	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	282	82	1	165	860	586	196
Future Volume (vph)	282	82	1	165	860	586	196
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1711	1863	1783	1568
Flt Permitted	0.950			0.321			
Satd. Flow (perm)	1745	1561	0	578	1863	1783	1568
Satd. Flow (RTOR)		83					213
Adj. Flow (vph)	285	83	1	194	1012	637	213
Lane Group Flow (vph)	285	83	0	195	1012	637	213
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.62	0.18		0.54	0.88	0.58	0.20
Control Delay (s/veh)	28.4	5.7		16.4	23.6	11.4	1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.4	5.7		16.4	23.6	11.4	1.7
Queue Length 50th (ft)	104	0		42	315	142	0
Queue Length 95th (ft)	174	28		121	#651	302	27
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	804	764		358	1156	1106	1053
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	0.35	0.11		0.54	0.88	0.58	0.20

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 69.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	282	82	1	165	860	586	196
Future Volume (vph)	282	82	1	165	860	586	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1711	1863	1783	1568
Flt Permitted	0.95	1.00		0.32	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		578	1863	1783	1568
Peak-hour factor, PHF	0.99	0.99	0.85	0.85	0.85	0.92	0.92
Adj. Flow (vph)	285	83	1	194	1012	637	213
RTOR Reduction (vph)	0	61	0	0	0	0	81
Lane Group Flow (vph)	285	22	0	195	1012	637	132
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	16.3	16.3		41.2	41.2	41.2	41.2
Effective Green, g (s)	18.3	18.3		43.2	43.2	43.2	43.2
Actuated g/C Ratio	0.26	0.26		0.62	0.62	0.62	0.62
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	459	411		359	1158	1108	974
v/s Ratio Prot	c0.16	0.01			c0.54	0.36	
v/s Ratio Perm				0.34			0.08
v/c Ratio	0.62	0.05		0.54	0.87	0.57	0.14
Uniform Delay, d1	22.5	19.1		7.5	10.9	7.7	5.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1		1.7	7.5	0.7	0.1
Delay (s)	25.2	19.2		9.2	18.4	8.5	5.5
Level of Service	C	B		A	B	A	A
Approach Delay (s/veh)	23.8				16.9	7.7	
Approach LOS	C				B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	13

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	167	168	1010	726	33
Future Vol, veh/h	15	167	168	1010	726	33
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	91	91	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	206	185	1110	789	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2268	789	825	0	-	0
Stage 1	789	-	-	-	-	-
Stage 2	1479	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	45	392	810	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	35	392	810	-	-	-
Mov Cap-2 Maneuver	35	-	-	-	-	-
Stage 1	347	-	-	-	-	-
Stage 2	210	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	126.56	1.53	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	810	-	212	-	-
HCM Lane V/C Ratio	0.228	-	1.06	-	-
HCM Ctrl Dly (s/v)	10.8	-	126.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.9	-	10	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	341	339	21	23	22
Future Vol, veh/h	24	341	339	21	23	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	94	94	72	72
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	26	371	361	22	32	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	383	0	-	0	609	372
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	4.115	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2095	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1180	-	-	-	446	679
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1180	-	-	-	436	679
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	786	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.53	0	12.27
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1180	-	-	-	436	679
HCM Lane V/C Ratio	0.022	-	-	-	0.073	0.045
HCM Ctrl Dly (s/v)	8.1	-	-	-	13.9	10.6
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	85	120	238	130	127
Future Vol, veh/h	238	85	120	238	130	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	91	91	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	277	99	132	262	135	132

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	376	0	851	188
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	-	-	4.115	-	6.615	6.915
Critical Hdwy Stg 1	-	-	-	-	5.815	-
Critical Hdwy Stg 2	-	-	-	-	5.415	-
Follow-up Hdwy	-	-	2.2095	-	3.5095	3.3095
Pot Cap-1 Maneuver	-	-	1188	-	316	826
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1188	-	281	826
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.82	19.81
HCM LOS			C

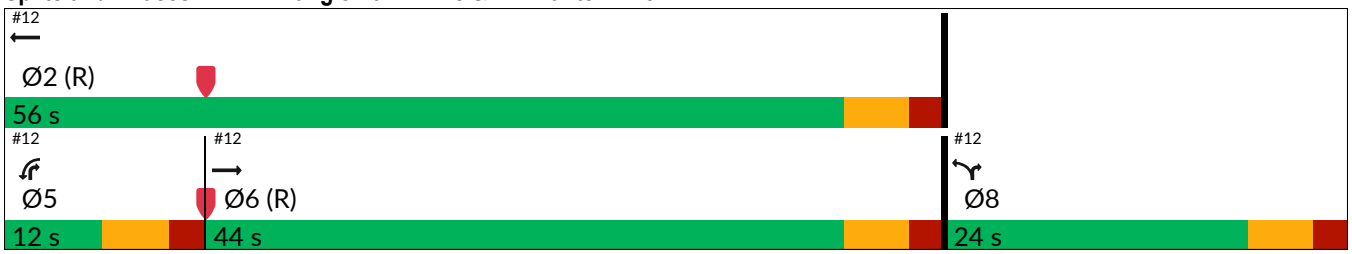
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	281	826	-	-	1188	-
HCM Lane V/C Ratio	0.482	0.16	-	-	0.111	-
HCM Ctrl Dly (s/v)	29.2	10.2	-	-	8.4	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2.5	0.6	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	262	114	48	323	106	61
Future Volume (vph)	262	114	48	323	106	61
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.954					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3296	0	1728	1881	1787	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3296	0	1728	1881	1787	1599
Satd. Flow (RTOR)	123					81
Adj. Flow (vph)	298	130	55	371	141	81
Lane Group Flow (vph)	428	0	55	371	141	81
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	44.0		12.0	56.0	24.0	
Total Split (%)	55.0%		15.0%	70.0%	30.0%	
Maximum Green (s)	38.0		6.0	50.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		None	C-Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.22		0.26	0.27	0.47	0.13
Control Delay (s/veh)	5.9		33.9	4.7	34.3	4.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.9		33.9	4.7	34.3	4.3
Queue Length 50th (ft)	23		26	51	65	0
Queue Length 95th (ft)	47		55	98	90	15
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	1998		217	1373	446	597
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	0.21		0.25	0.27	0.32	0.14

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

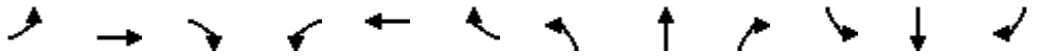
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	262	114	48	323	106	61
Future Volume (vph)	262	114	48	323	106	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3298		1728	1881	1787	1599
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3298		1728	1881	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.87	0.87	0.75	0.75
Adj. Flow (vph)	298	130	55	371	141	81
RTOR Reduction (vph)	53	0	0	0	0	54
Lane Group Flow (vph)	375	0	55	371	141	27
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	43.5		6.9	56.4	11.6	24.5
Effective Green, g (s)	45.5		8.9	58.4	13.6	26.5
Actuated g/C Ratio	0.57		0.11	0.73	0.17	0.33
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1875		192	1373	303	529
v/s Ratio Prot	0.11		0.03	c0.20	c0.08	0.02
v/s Ratio Perm						
v/c Ratio	0.20		0.29	0.27	0.47	0.05
Uniform Delay, d1	8.4		32.6	3.6	29.9	18.2
Progression Factor	0.81		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		0.8	0.5	1.1	0.0
Delay (s)	7.0		33.5	4.1	31.1	18.2
Level of Service	A		C	A	C	B
Approach Delay (s/veh)	7.0			7.9	26.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

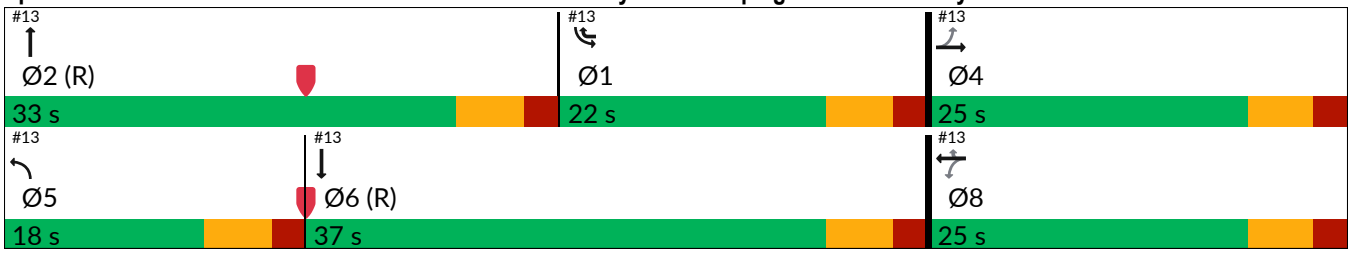


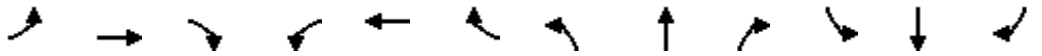
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	2	41	7	6	33	43	385	23	43	396	48
Future Volume (vph)	94	2	41	7	6	33	43	385	23	43	396	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.955				0.850		0.992			0.984	
Flt Protected		0.967			0.973		0.950			0.950		
Satd. Flow (prot)	0	3334	0	0	1910	1669	1787	3427	0	3351	3400	0
Flt Permitted		0.782			0.793		0.950			0.950		
Satd. Flow (perm)	0	2696	0	0	1557	1669	1787	3427	0	3351	3400	0
Satd. Flow (RTOR)		44				123		8			20	
Adj. Flow (vph)	101	2	44	11	9	51	46	410	24	51	466	56
Lane Group Flow (vph)	0	147	0	0	20	51	46	434	0	51	522	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	25.0	25.0		25.0	25.0	22.0	18.0	33.0		22.0	37.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%	27.5%	22.5%	41.3%		27.5%	46.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	16.0	12.0	27.0		16.0	31.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.38			0.10	0.08	0.22	0.22		0.09	0.23	
Control Delay (s/veh)		24.3			30.3	0.2	35.7	6.8		27.3	7.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.3			30.3	0.2	35.7	6.8		27.3	7.1	
Queue Length 50th (ft)		24			9	0	21	39		10	56	
Queue Length 95th (ft)		50			19	0	47	62		24	91	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		740			408	667	312	2002		753	2247	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.20			0.05	0.08	0.15	0.22		0.07	0.23	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	2	41	7	6	33	43	385	23	43	396	48
Future Volume (vph)	94	2	41	7	6	33	43	385	23	43	396	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95		0.97	0.95	
Frt		0.96			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3333			1911	1669	1787	3426		3351	3400	
Flt Permitted		0.78			0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2697			1557	1669	1787	3426		3351	3400	
Peak-hour factor, PHF	0.93	0.93	0.93	0.65	0.65	0.65	0.94	0.94	0.94	0.85	0.85	0.85
Adj. Flow (vph)	101	2	44	11	9	51	46	410	24	51	466	56
RTOR Reduction (vph)	0	38	0	0	0	36	0	4	0	0	7	0
Lane Group Flow (vph)	0	109	0	0	20	15	46	430	0	51	515	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		8.5			8.5	19.7	5.2	42.3		11.2	48.3	
Effective Green, g (s)		10.5			10.5	23.7	7.2	44.3		13.2	50.3	
Actuated g/C Ratio		0.13			0.13	0.30	0.09	0.55		0.16	0.63	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		353			204	577	160	1897		552	2137	
v/s Ratio Prot						0.00	c0.03	0.13		0.02	c0.15	
v/s Ratio Perm		c0.04			0.01	0.00						
v/c Ratio		0.31			0.10	0.03	0.29	0.23		0.09	0.24	
Uniform Delay, d1		31.5			30.6	20.0	34.0	9.1		28.3	6.5	
Progression Factor		1.00			1.00	1.00	1.07	0.69		1.00	1.00	
Incremental Delay, d2		0.5			0.2	0.0	1.0	0.3		0.1	0.3	
Delay (s)		32.0			30.8	20.0	37.2	6.5		28.4	6.8	
Level of Service		C			C	B	D	A		C	A	
Approach Delay (s/veh)		32.0			23.0			9.5			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

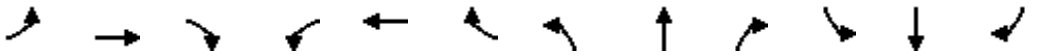
Intersection	
Int Delay, s/veh	0.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	67	902	131	19	915
Future Vol, veh/h	0	67	902	131	19	915
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	85	85	85	85	93	93
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	79	1061	154	20	984

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1671	608	0	0	1215	0
Stage 1	1138	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	89	444	-	-	575	-
Stage 1	272	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	85	444	-	-	575	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	262	-	-	-	-	-
Stage 2	559	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	14.85	0	0.23
HCM LOS	B		

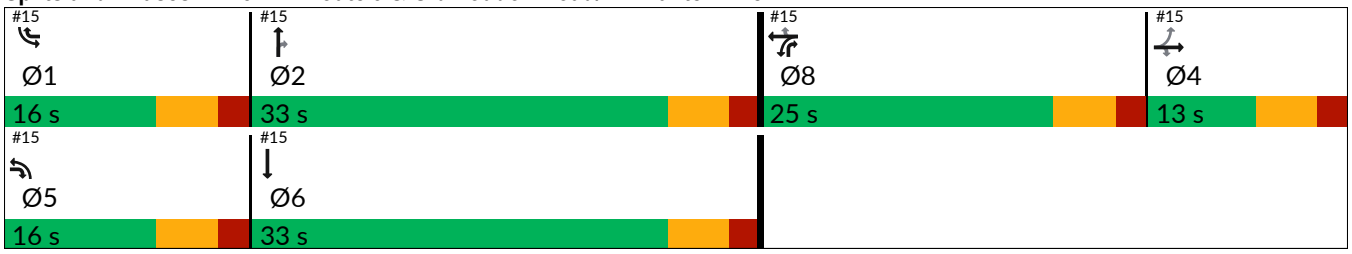
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	444	575	-
HCM Lane V/C Ratio	-	-	0.178	0.036	-
HCM Ctrl Dly (s/v)	-	-	14.9	11.5	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

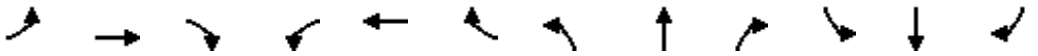


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	41	79	318	81	113	99	523	347	99	537	14
Future Volume (vph)	12	41	79	318	81	113	99	523	347	99	537	14
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.989		0.950	0.971		0.950			0.950		
Satd. Flow (prot)	0	1816	1561	1641	1735	1492	1787	3455	1599	3467	3441	0
Flt Permitted		0.849		0.950	0.971		0.950			0.950		
Satd. Flow (perm)	0	1559	1561	1641	1735	1492	1787	3455	1599	3467	3441	0
Satd. Flow (RTOR)			113			130			390		3	
Adj. Flow (vph)	14	47	90	366	93	130	111	588	390	106	577	15
Lane Group Flow (vph)	0	61	90	227	232	130	111	588	390	106	592	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	16.0	25.0	25.0	16.0	16.0	33.0	25.0	16.0	33.0	
Total Split (%)	14.9%	14.9%	18.4%	28.7%	28.7%	18.4%	18.4%	37.9%	28.7%	18.4%	37.9%	
Maximum Green (s)	7.0	7.0	10.0	19.0	19.0	10.0	10.0	27.0	19.0	10.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.27	0.18	0.50	0.49	0.17	0.35	0.50	0.31	0.19	0.53	
Control Delay (s/veh)		37.1	4.2	29.8	29.1	2.6	35.1	22.2	1.5	32.2	23.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		37.1	4.2	29.8	29.1	2.6	35.1	22.2	1.5	32.2	23.2	
Queue Length 50th (ft)		28	0	102	103	0	50	128	0	24	134	
Queue Length 95th (ft)		69	22	186	188	20	108	184	30	51	187	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		242	550	596	630	843	371	1734	1269	720	1729	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.25	0.16	0.38	0.37	0.15	0.30	0.34	0.31	0.15	0.34	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 67.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

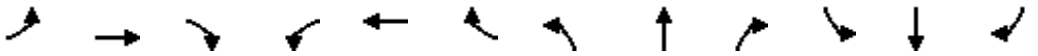




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	41	79	318	81	113	99	523	347	99	537	14
Future Volume (vph)	12	41	79	318	81	113	99	523	347	99	537	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1816	1561	1641	1735	1492	1787	3455	1599	3467	3442	
Flt Permitted		0.85	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1559	1561	1641	1735	1492	1787	3455	1599	3467	3442	
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	14	47	90	366	93	130	111	588	390	106	577	15
RTOR Reduction (vph)	0	0	72	0	0	82	0	0	163	0	2	0
Lane Group Flow (vph)	0	61	18	227	232	48	111	588	227	106	590	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		3.4	10.2	16.2	16.2	22.1	6.8	20.5	36.7	5.9	19.6	
Effective Green, g (s)		5.4	14.2	18.2	18.2	26.1	8.8	22.5	40.7	7.9	21.6	
Actuated g/C Ratio		0.08	0.20	0.26	0.26	0.37	0.13	0.32	0.58	0.11	0.31	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		120	405	426	451	556	224	1110	1021	391	1062	
v/s Ratio Prot			0.01	c0.14	0.13	0.01	c0.06	0.17	0.06	0.03	c0.17	
v/s Ratio Perm		c0.04	0.01			0.02			0.08			
v/c Ratio		0.51	0.05	0.53	0.51	0.09	0.50	0.53	0.22	0.27	0.56	
Uniform Delay, d1		31.0	22.4	22.2	22.1	14.2	28.5	19.4	7.0	28.4	20.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.4	0.0	1.3	1.0	0.1	1.7	0.5	0.1	0.4	0.6	
Delay (s)		34.4	22.5	23.5	23.1	14.3	30.3	19.9	7.2	28.8	20.8	
Level of Service		C	C	C	C	B	C	B	A	C	C	
Approach Delay (s/veh)		27.3			21.3			16.4			22.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

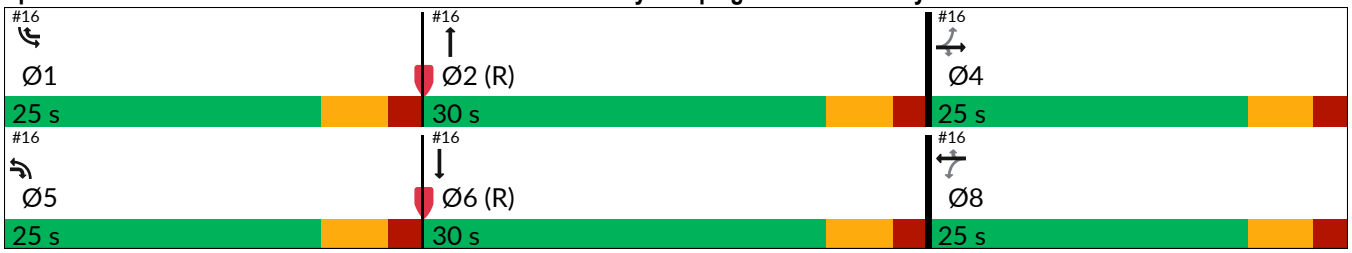


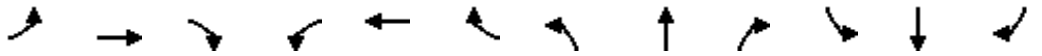
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	5	76	19	5	18	75	550	23	17	555	65
Future Volume (vph)	87	5	76	19	5	18	75	550	23	17	555	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.994			0.984	
Flt Protected		0.955			0.961		0.950			0.950		
Satd. Flow (prot)	0	1814	1615	0	1887	1669	1847	3434	0	1787	3400	0
Flt Permitted		0.719			0.745		0.950			0.950		
Satd. Flow (perm)	0	1366	1615	0	1463	1669	1847	3434	0	1787	3400	0
Satd. Flow (RTOR)			70			41		5			17	
Adj. Flow (vph)	97	6	84	21	5	20	80	585	24	20	669	78
Lane Group Flow (vph)	0	103	84	0	26	20	80	609	0	20	747	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	30.0		25.0	30.0	
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	37.5%		31.3%	37.5%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	19.0	24.0		19.0	24.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46	0.15		0.11	0.04	0.32	0.26		0.11	0.35	
Control Delay (s/veh)		35.8	5.6		27.4	2.2	33.9	8.3		27.3	16.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		35.8	5.6		27.4	2.2	33.9	8.3		27.3	16.3	
Queue Length 50th (ft)		47	5		11	0	37	74		10	155	
Queue Length 95th (ft)		88	27		30	6	74	128		19	208	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		358	760		384	768	484	2327		469	2111	
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		0.29	0.11		0.07	0.03	0.17	0.26		0.04	0.35	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	5	76	19	5	18	75	550	23	17	555	65
Future Volume (vph)	87	5	76	19	5	18	75	550	23	17	555	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1815	1615		1887	1669	1847	3435		1787	3401	
Flt Permitted		0.72	1.00		0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1367	1615		1464	1669	1847	3435		1787	3401	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.94	0.94	0.94	0.83	0.83	0.83
Adj. Flow (vph)	97	6	84	21	5	20	80	585	24	20	669	78
RTOR Reduction (vph)	0	0	51	0	0	15	0	2	0	0	7	0
Lane Group Flow (vph)	0	103	33	0	26	5	80	607	0	20	740	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		10.0	17.7		10.0	14.3	7.7	47.7		4.3	44.3	
Effective Green, g (s)		12.0	21.7		12.0	18.3	9.7	49.7		6.3	46.3	
Actuated g/C Ratio		0.15	0.27		0.15	0.23	0.12	0.62		0.08	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		205	518		219	465	223	2133		140	1968	
v/s Ratio Prot			0.01			0.00	c0.04	c0.18		0.01	c0.22	
v/s Ratio Perm		c0.08	0.01		0.02	0.00						
v/c Ratio		0.50	0.06		0.12	0.01	0.36	0.28		0.14	0.38	
Uniform Delay, d1		31.3	21.6		29.4	23.8	32.3	7.0		34.3	9.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.82	1.48	
Incremental Delay, d2		1.9	0.1		0.2	0.0	1.0	0.3		0.5	0.5	
Delay (s)		33.2	21.7		29.7	23.9	33.3	7.3		28.6	14.0	
Level of Service		C	C		C	C	C	A		C	B	
Approach Delay (s/veh)		28.0			27.1			10.3			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	651	4	1	631
Future Vol, veh/h	6	1	651	4	1	631
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	97	97	88	88
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	10	2	671	4	1	717

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1034	338	0	0	675	0
Stage 1	673	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	231	664	-	-	919	-
Stage 1	474	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	231	664	-	-	919	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	682	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	19.83	0	0.01
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	255	919	-
HCM Lane V/C Ratio	-	-	0.047	0.001	-
HCM Ctrl Dly (s/v)	-	-	19.8	8.9	-
HCM Lane LOS	-	-	C	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)	53	7	79	73	5	21	73	533	46	16	480	38
Future Volume (vph)	53	7	79	73	5	21	73	533	46	16	480	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.989	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3417	0
Flt Permitted		0.638			0.688		0.950			0.950		
Satd. Flow (perm)	0	1200	1599	0	1294	1599	1805	3490	1561	1787	3417	0
Satd. Flow (RTOR)			205			205			123		11	
Adj. Flow (vph)	62	8	93	109	7	31	74	544	47	19	558	44
Lane Group Flow (vph)	0	70	93	0	116	31	74	544	47	19	602	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	23.0	31.0	31.0	23.0	31.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	28.8%	38.8%	38.8%	28.8%	38.8%	
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	25.0	25.0	17.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.21		0.50	0.07	0.31	0.25	0.05	0.06	0.29	
Control Delay (s/veh)		31.3	1.0		36.1	0.3	42.5	16.5	2.6	38.8	16.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.3	1.0		36.1	0.3	42.5	16.5	2.6	38.8	16.1	
Queue Length 50th (ft)		31	0		53	0	37	27	0	10	62	
Queue Length 95th (ft)		59	0		68	0	83	148	0	m31	205	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		330	588		355	588	428	2218	1037	445	2083	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.21	0.16		0.33	0.05	0.17	0.25	0.05	0.04	0.29	

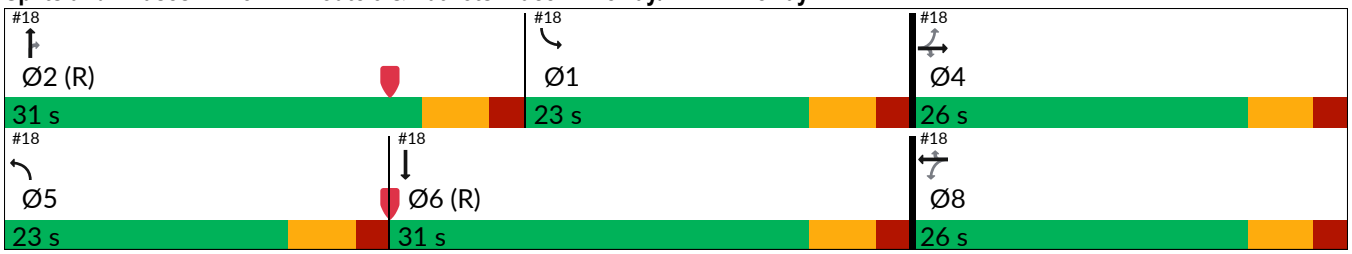
Intersection Summary

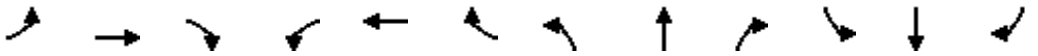
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

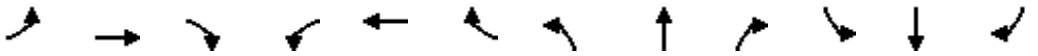




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	533	46	16	480	38
Future Volume (vph)	53	7	79	73	5	21	73	533	46	16	480	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3417	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1201	1599		1295	1599	1805	3490	1561	1787	3417	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	62	8	93	109	7	31	74	544	47	19	558	44
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	20	0	5	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	544	27	19	597	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.0	11.0		11.0	11.0	7.5	43.3	43.3	7.7	43.5	
Effective Green, g (s)		13.0	13.0		13.0	13.0	9.5	45.3	45.3	9.7	45.5	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.12	0.57	0.57	0.12	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	259		210	259	214	1976	883	216	1943	
v/s Ratio Prot							c0.04	0.16		0.01	c0.17	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.36	0.06		0.55	0.02	0.35	0.28	0.03	0.09	0.31	
Uniform Delay, d1		29.8	28.3		30.8	28.1	32.4	8.9	7.7	31.2	9.0	
Progression Factor		1.00	1.00		1.00	1.00	1.28	1.39	1.00	1.56	1.45	
Incremental Delay, d2		1.1	0.1		3.1	0.0	1.0	0.3	0.1	0.2	0.4	
Delay (s)		30.9	28.4		33.9	28.2	42.5	12.7	7.7	49.0	13.5	
Level of Service		C	C		C	C	D	B	A	D	B	
Approach Delay (s/veh)		29.5			32.7			15.7			14.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



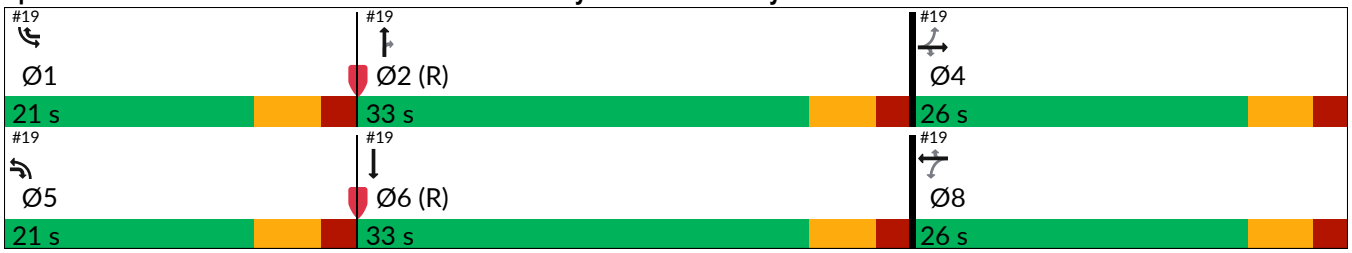
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	461	20	122	423	49
Future Volume (vph)	86	17	36	75	22	179	58	461	20	122	423	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.985	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3437	0
Flt Permitted		0.655			0.655		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1191	1546	1787	3455	1599	1685	3437	0
Satd. Flow (RTOR)			42			134			123		17	
Adj. Flow (vph)	100	20	42	89	26	213	73	576	25	145	504	58
Lane Group Flow (vph)	0	120	42	0	115	213	73	576	25	145	562	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	21.0	26.0	26.0	21.0	21.0	33.0	33.0	21.0	33.0	
Total Split (%)	32.5%	32.5%	26.3%	32.5%	32.5%	26.3%	26.3%	41.3%	41.3%	26.3%	41.3%	
Maximum Green (s)	20.0	20.0	15.0	20.0	20.0	15.0	15.0	27.0	27.0	15.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.07		0.53	0.32	0.31	0.32	0.03	0.49	0.27	
Control Delay (s/veh)		37.5	4.6		38.0	6.3	38.1	11.6	2.1	34.7	10.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		37.5	4.6		38.0	6.3	38.1	11.6	2.1	34.7	10.9	
Queue Length 50th (ft)		55	0		53	24	32	75	0	66	73	
Queue Length 95th (ft)		93	15		89	45	49	145	6	104	122	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		342	689		327	721	379	1814	898	365	2093	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.35	0.06		0.35	0.30	0.19	0.32	0.03	0.40	0.27	

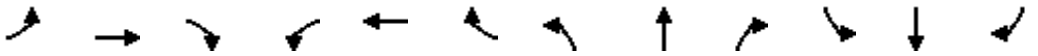
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	461	20	122	423	49
Future Volume (vph)	86	17	36	75	22	179	58	461	20	122	423	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3436	
Flt Permitted		0.65	1.00		0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1192	1546	1787	3455	1599	1685	3436	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	100	20	42	89	26	213	72	576	25	145	504	58
RTOR Reduction (vph)	0	0	30	0	0	88	0	0	12	0	7	0
Lane Group Flow (vph)	0	120	12	0	115	125	73	576	13	145	555	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.1	18.6		11.1	23.2	7.5	38.8	38.8	12.1	43.4	
Effective Green, g (s)		13.1	22.6		13.1	27.2	9.5	40.8	40.8	14.1	45.4	
Actuated g/C Ratio		0.16	0.28		0.16	0.34	0.12	0.51	0.51	0.18	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	536		195	602	212	1762	815	296	1949	
v/s Ratio Prot			0.00			0.04	0.04	c0.17		c0.09	0.16	
v/s Ratio Perm		0.10	0.00		c0.10	0.04			0.01			
v/c Ratio		0.59	0.02		0.59	0.21	0.34	0.33	0.02	0.49	0.28	
Uniform Delay, d1		31.0	20.7		31.0	18.7	32.4	11.5	9.7	29.7	8.9	
Progression Factor		1.00	1.00		1.00	1.00	1.13	0.82	1.00	1.00	1.00	
Incremental Delay, d2		4.6	0.0		4.5	0.2	1.0	0.5	0.0	1.3	0.4	
Delay (s)		35.5	20.7		35.5	18.9	37.7	9.9	9.7	31.0	9.3	
Level of Service		D	C		D	B	D	A	A	C	A	
Approach Delay (s/veh)		31.7			24.7			12.9			13.7	
Approach LOS		C			C			B			B	

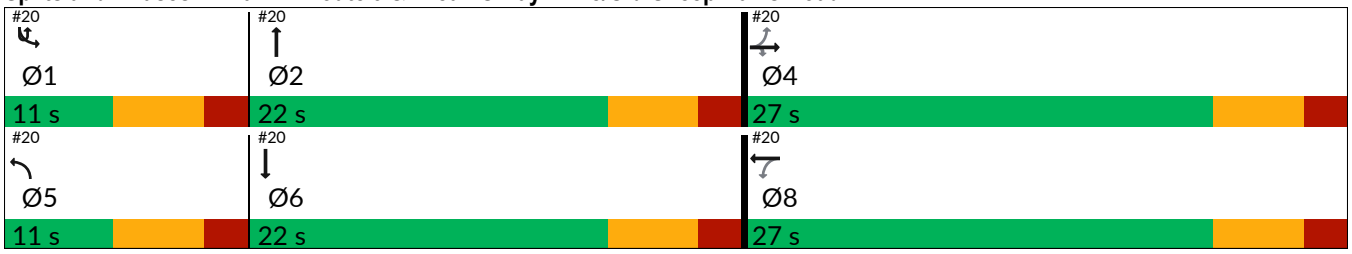
Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	138	0	13	0	0	1	10	683	1	3	1	563
Future Volume (vph)	138	0	13	0	0	1	10	683	1	3	1	563
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.865							0.969
Flt Protected		0.950					0.950				0.950	
Satd. Flow (prot)	0	2046	1669	0	1863	0	1668	3455	0	0	1787	3348
Flt Permitted		0.755					0.950				0.950	
Satd. Flow (perm)	0	1626	1669	0	1863	0	1668	3455	0	0	1787	3348
Satd. Flow (RTOR)			164		283							55
Adj. Flow (vph)	153	0	14	0	0	4	11	727	1	3	1	599
Lane Group Flow (vph)	0	153	14	0	4	0	11	728	0	0	4	755
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		11.0	22.0		11.0	11.0	22.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		18.3%	36.7%		18.3%	18.3%	36.7%
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0		5.0	16.0		5.0	5.0	16.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio		0.33	0.02		0.01		0.04	0.38			0.01	0.40
Control Delay (s/veh)		14.1	0.1		0.0		16.9	8.9			17.0	8.5
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)		14.1	0.1		0.0		16.9	8.9			17.0	8.5
Queue Length 50th (ft)		21	0		0		2	42			1	41
Queue Length 95th (ft)		76	0		0		14	146			8	144
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)		992	1083		1247		309	1981			332	1943
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.15	0.01		0.00		0.04	0.37			0.01	0.39

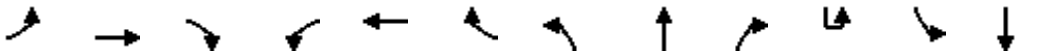
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 38.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	156
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



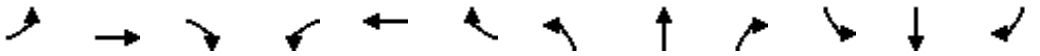
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	138	0	13	0	0	1	10	683	1	3	1	563
Future Volume (vph)	138	0	13	0	0	1	10	683	1	3	1	563
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	16	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frt		1.00	0.85		0.87		1.00	1.00			1.00	0.97
Flt Protected		0.95	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)		2046	1669		1863		1668	3454			1787	3348
Flt Permitted		0.76	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1626	1669		1863		1668	3454			1787	3348
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.90	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	153	0	14	0	0	4	11	727	1	3	1	599
RTOR Reduction (vph)	0	0	11	0	3	0	0	0	0	0	0	30
Lane Group Flow (vph)	0	153	3	0	1	0	11	728	0	0	4	725
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)		7.6	7.6		7.6		0.7	18.8			0.7	18.8
Effective Green, g (s)		9.6	9.6		9.6		2.7	20.8			2.7	20.8
Actuated g/C Ratio		0.21	0.21		0.21		0.06	0.46			0.06	0.46
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		346	355		396		99	1592			106	1544
v/s Ratio Prot					0.00		c0.01	0.21			0.00	c0.22
v/s Ratio Perm		c0.09	0.00									
v/c Ratio		0.44	0.01		0.00		0.11	0.46			0.04	0.47
Uniform Delay, d1		15.4	14.0		14.0		20.1	8.3			20.0	8.4
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		0.9	0.0		0.0		0.5	0.2			0.1	0.2
Delay (s)		16.3	14.0		14.0		20.6	8.5			20.1	8.6
Level of Service		B	B		B		C	A			C	A
Approach Delay (s/veh)		16.1			14.0			8.7				8.6
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	156
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

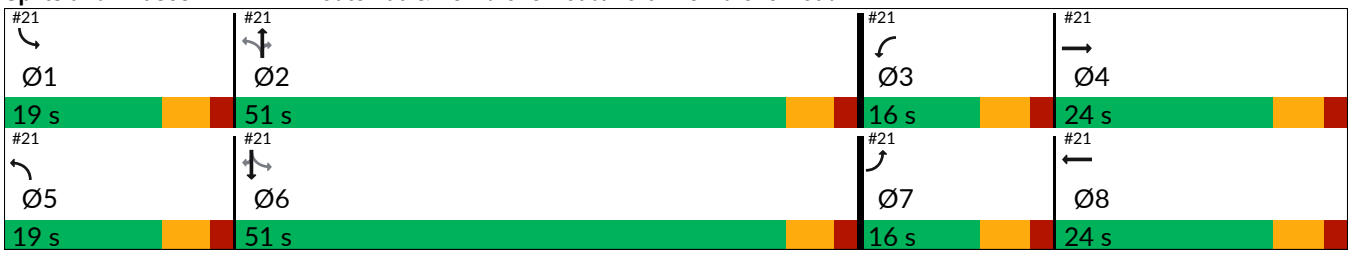


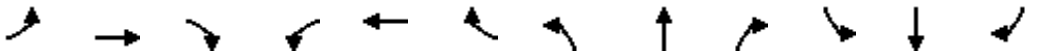
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	69	90	26	38	51	69	901	54	79	682	132
Future Volume (vph)	211	69	90	26	38	51	69	901	54	79	682	132
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915			0.914				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1721	0	1736	1503	0	1811	1845	1568	1829	1863	1531
Flt Permitted	0.950			0.950			0.131			0.084		
Satd. Flow (perm)	1787	1721	0	1736	1503	0	250	1845	1568	162	1863	1531
Satd. Flow (RTOR)		52			54				149			149
Adj. Flow (vph)	257	84	110	36	53	71	77	1001	60	85	733	142
Lane Group Flow (vph)	257	194	0	36	124	0	77	1001	60	85	733	142
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	1.14	0.46		0.21	0.49		0.26	1.09	0.07	0.33	0.79	0.17
Control Delay (s/veh)	142.3	30.5		45.2	29.9		10.8	84.7	0.2	12.5	29.8	3.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	142.3	30.5		45.2	29.9		10.8	84.7	0.2	12.5	29.8	3.2
Queue Length 50th (ft)	~192	82		22	41		18	~736	0	19	375	0
Queue Length 95th (ft)	#340	142		44	70		43	#1124	0	47	#693	32
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	226	440		220	360		399	917	854	362	930	839
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.44		0.16	0.34		0.19	1.09	0.07	0.23	0.79	0.17

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 95.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

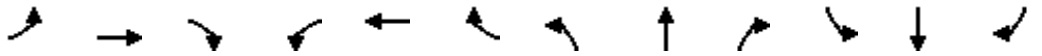




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	69	90	26	38	51	69	901	54	79	682	132
Future Volume (vph)	211	69	90	26	38	51	69	901	54	79	682	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1721		1736	1503		1811	1845	1568	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.13	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1787	1721		1736	1503		249	1845	1568	161	1863	1531
Peak-hour factor, PHF	0.82	0.82	0.82	0.72	0.72	0.72	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	257	84	110	36	53	71	77	1001	60	85	733	142
RTOR Reduction (vph)	0	41	0	0	45	0	0	0	31	0	0	74
Lane Group Flow (vph)	257	153	0	36	79	0	77	1001	29	85	733	68
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	19.1		4.9	13.9		51.4	45.5	45.5	51.8	45.7	45.7
Effective Green, g (s)	12.1	21.1		6.9	15.9		55.4	47.5	47.5	55.8	47.7	47.7
Actuated g/C Ratio	0.12	0.21		0.07	0.16		0.56	0.48	0.48	0.56	0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	364		120	239		262	879	747	225	892	733
v/s Ratio Prot	c0.14	c0.09		0.02	0.05		0.02	c0.54		c0.03	0.39	
v/s Ratio Perm							0.14		0.02	0.18		0.04
v/c Ratio	1.18	0.42		0.30	0.33		0.29	1.14	0.04	0.38	0.82	0.09
Uniform Delay, d1	43.8	34.0		44.1	37.1		15.8	26.1	13.9	20.1	22.3	14.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	119.8	0.8		1.4	0.8		0.6	76.2	0.0	1.1	6.2	0.1
Delay (s)	163.6	34.7		45.5	37.9		16.4	102.3	13.9	21.2	28.4	14.2
Level of Service	F	C		D	D		B	F	B	C	C	B
Approach Delay (s/veh)		108.2			39.6			91.8			25.7	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	68.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	8	98	13	41	47	60	615	1	8	537	251
Future Volume (vph)	347	8	98	13	41	47	60	615	1	8	537	251
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.862			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1568	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.693			0.674			0.152			0.391		
Satd. Flow (perm)	1304	1568	0	1281	1981	0	276	1818	1599	736	1818	1546
Satd. Flow (RTOR)		120			53				66			276
Adj. Flow (vph)	423	10	120	15	46	53	65	661	1	9	590	276
Lane Group Flow (vph)	423	130	0	15	99	0	65	661	1	9	590	276
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.00	0.22		0.04	0.15		0.18	0.69	0.00	0.03	0.81	0.35
Control Delay (s/veh)	69.1	5.8		16.1	9.7		7.0	13.8	0.0	13.3	29.1	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.1	5.8		16.1	9.7		7.0	13.8	0.0	13.3	29.1	3.6
Queue Length 50th (ft)	~177	3		4	12		10	146	0	2	201	0
Queue Length 95th (ft)	#307	30		16	42		23	241	0	10	#385	42
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	425	592		418	682		461	1219	1094	293	725	782
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.22		0.04	0.15		0.14	0.54	0.00	0.03	0.81	0.35

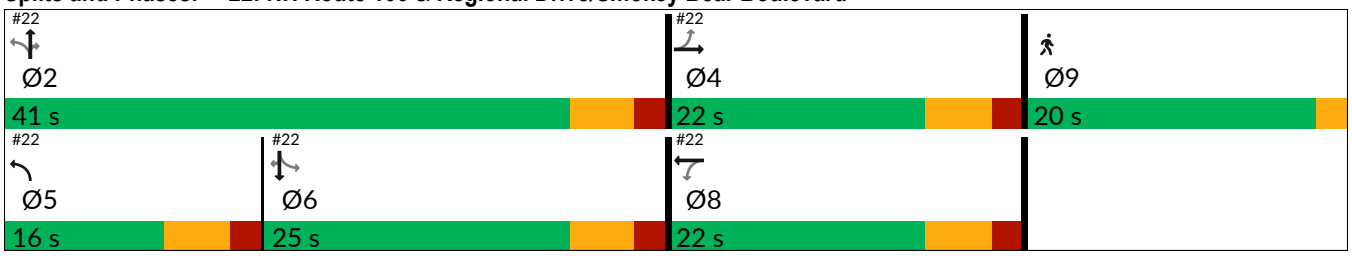
Intersection Summary
Cycle Length: 83

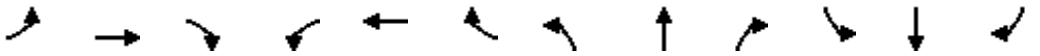
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 55.9
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

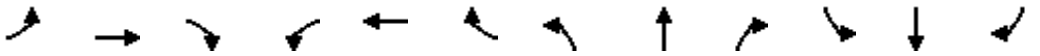




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	8	98	13	41	47	60	615	1	8	537	251
Future Volume (vph)	347	8	98	13	41	47	60	615	1	8	537	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.69	1.00		0.67	1.00		0.15	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1304	1567		1280	1980		277	1818	1599	736	1818	1546
Peak-hour factor, PHF	0.82	0.82	0.82	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	423	10	120	15	46	53	65	661	1	9	590	276
RTOR Reduction (vph)	0	83	0	0	37	0	0	0	0	0	0	171
Lane Group Flow (vph)	423	47	0	15	62	0	65	661	1	9	590	105
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		30.3	30.3	30.3	20.3	20.3	20.3
Effective Green, g (s)	18.2	18.2		18.2	18.2		32.3	32.3	32.3	22.3	22.3	22.3
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55	0.55	0.38	0.38	0.38
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	405	487		398	616		301	1003	882	280	693	589
v/s Ratio Prot		0.03			0.03		0.02	c0.36			c0.32	
v/s Ratio Perm	c0.32			0.01			0.10		0.00	0.01		0.07
v/c Ratio	1.04	0.10		0.04	0.10		0.22	0.66	0.00	0.03	0.85	0.18
Uniform Delay, d1	20.2	14.3		14.0	14.3		9.0	9.2	5.9	11.3	16.6	12.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.8	0.1		0.0	0.1		0.4	1.6	0.0	0.0	9.9	0.1
Delay (s)	76.9	14.4		14.1	14.4		9.3	10.8	5.9	11.4	26.4	12.2
Level of Service	E	B		B	B		A	B	A	B	C	B
Approach Delay (s/veh)		62.2			14.4			10.7			21.8	
Approach LOS		E			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

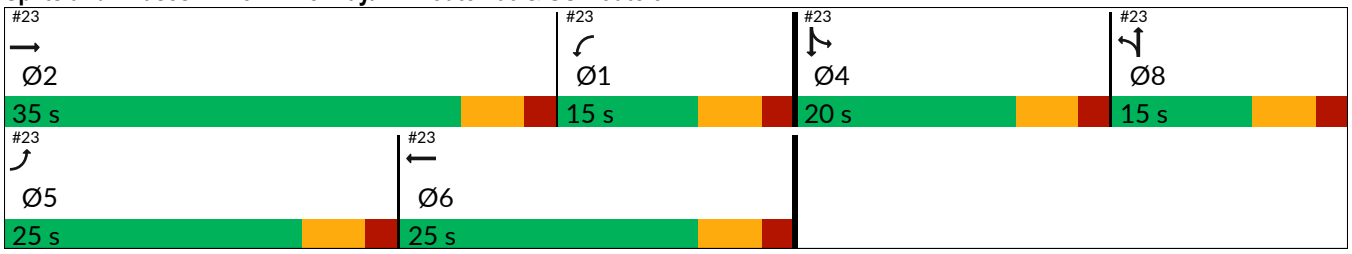
c Critical Lane Group

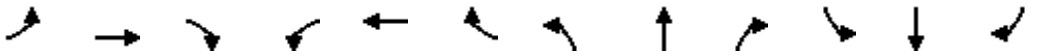


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	683	7	1	358	296	49	20	4	414	2	204
Future Volume (vph)	176	683	7	1	358	296	49	20	4	414	2	204
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Satd. Flow (RTOR)			347			347			347			347
Adj. Flow (vph)	187	727	7	1	389	322	69	28	6	455	2	224
Lane Group Flow (vph)	187	727	7	1	389	322	69	28	6	455	2	224
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		20.0	20.0	
Total Split (%)	29.4%	41.2%		17.6%	29.4%		17.6%	17.6%		23.5%	23.5%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		14.0	14.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.50	0.44	0.00	0.00	0.48	0.18	0.16	0.12	0.00	0.62	0.01	0.14
Control Delay (s/veh)	30.7	15.1	0.0	32.0	26.9	0.2	31.2	32.0	0.0	30.9	26.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.7	15.1	0.0	32.0	26.9	0.2	31.2	32.0	0.0	30.9	26.5	0.2
Queue Length 50th (ft)	74	104	0	0	80	0	14	11	0	94	1	0
Queue Length 95th (ft)	147	219	0	5	136	0	28	30	0	172	7	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150	200		200	250		150	250		200
Base Capacity (vph)	557	1744	1759	291	1113	1759	554	301	1725	815	442	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.42	0.00	0.00	0.35	0.18	0.12	0.09	0.00	0.56	0.00	0.14

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 68.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

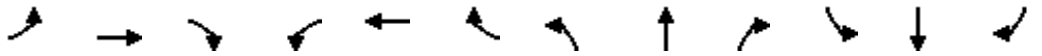




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	683	7	1	358	296	49	20	4	414	2	204
Future Volume (vph)	176	683	7	1	358	296	49	20	4	414	2	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.71	0.71	0.71	0.91	0.91	0.91
Adj. Flow (vph)	187	727	7	1	389	322	69	28	6	455	2	224
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	187	727	7	1	389	322	69	28	6	455	2	224
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.8	30.5	74.5	1.5	19.2	74.5	5.5	5.5	74.5	13.0	13.0	74.5
Effective Green, g (s)	14.8	32.5	74.5	3.5	21.2	74.5	7.5	7.5	74.5	15.0	15.0	74.5
Actuated g/C Ratio	0.20	0.44	1.00	0.05	0.28	1.00	0.10	0.10	1.00	0.20	0.20	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	343	1507	1759	81	983	1759	330	179	1725	668	362	1583
v/s Ratio Prot	c0.11	c0.21		0.00	c0.11		0.02	0.02		c0.14	0.00	
v/s Ratio Perm			0.00			c0.18			0.00			0.14
v/c Ratio	0.55	0.48	0.00	0.01	0.40	0.18	0.21	0.16	0.00	0.68	0.01	0.14
Uniform Delay, d1	26.8	15.0	0.0	33.9	21.5	0.0	30.8	30.6	0.0	27.5	23.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2	0.0	0.1	0.3	0.2	0.3	0.4	0.0	2.9	0.0	0.2
Delay (s)	28.6	15.2	0.0	33.9	21.7	0.2	31.1	31.0	0.0	30.4	23.8	0.2
Level of Service	C	B	A	C	C	A	C	C	A	C	C	A
Approach Delay (s/veh)		17.8			12.0			29.3			20.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	1017	1	2	944	38	1	1	2	83	1	804
Future Volume (vph)	387	1017	1	2	944	38	1	1	2	83	1	804
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	1787	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.875			0.726	
Satd. Flow (perm)	1787	3336	0	1668	3316	0	0	1662	1830	0	1320	1546
Satd. Flow (RTOR)					3				150			636
Adj. Flow (vph)	416	1094	1	2	1111	45	2	2	4	92	1	893
Lane Group Flow (vph)	416	1095	0	2	1156	0	0	4	4	0	93	893
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.75	0.43		0.02	0.82			0.02	0.01		0.54	1.18
Control Delay (s/veh)	37.4	5.0		42.0	29.9			37.5	0.0		51.4	108.3
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	37.4	5.0		42.0	29.9			37.5	0.0		51.4	108.3
Queue Length 50th (ft)	217	84		1	309			2	0		52	~285
Queue Length 95th (ft)	324	192		8	394			7	0		#116	#541
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	663	2545		127	1414			217	370		173	755
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	0.63	0.43		0.02	0.82			0.02	0.01		0.54	1.18

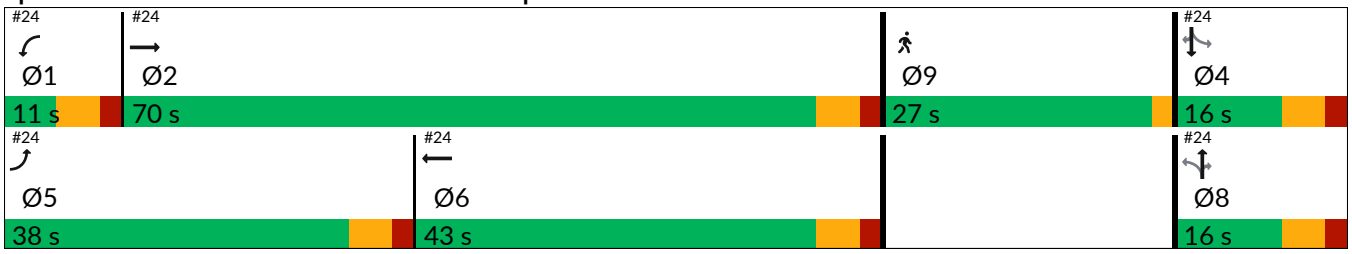
Intersection Summary
Cycle Length: 124

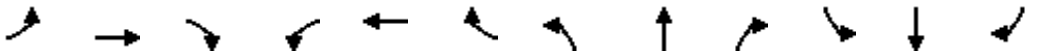
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 91.8
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

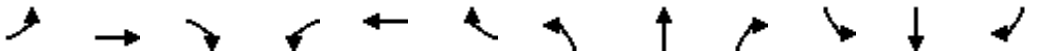




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	1017	1	2	944	38	1	1	2	83	1	804
Future Volume (vph)	387	1017	1	2	944	38	1	1	2	83	1	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	1787	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.88	1.00		0.73	1.00
Satd. Flow (perm)	1787	3336		1668	3316			1663	1830		1321	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.85	0.85	0.85	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	416	1094	1	2	1111	45	2	2	4	92	1	893
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	4	0	0	557
Lane Group Flow (vph)	416	1095	0	2	1154	0	0	4	0	0	93	336
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	26.6	67.7		0.9	42.0			10.0	10.0		10.0	10.0
Effective Green, g (s)	28.6	69.7		2.9	44.0			12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.30	0.72		0.03	0.46			0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	529	2407		50	1510			206	227		164	192
v/s Ratio Prot	c0.23	0.33		0.00	c0.35							
v/s Ratio Perm								0.00	0.00		0.07	c0.22
v/c Ratio	0.79	0.45		0.04	0.76			0.02	0.00		0.57	1.75
Uniform Delay, d1	31.2	5.6		45.5	22.0			37.1	37.1		39.9	42.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.6	0.1		0.3	2.4			0.0	0.0		4.4	358.1
Delay (s)	38.8	5.7		45.8	24.3			37.2	37.1		44.3	400.4
Level of Service	D	A		D	C			D	D		D	F
Approach Delay (s/veh)		14.8			24.4			37.1			366.8	
Approach LOS		B			C			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	112.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1330	7	4	1131	47	4	0	20	54	0	30
Future Volume (vph)	10	1330	7	4	1131	47	4	0	20	54	0	30
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4959	0	1668	3434	0	1805	1615	0	1760	1524	0
Flt Permitted	0.950			0.950			0.734			0.737		
Satd. Flow (perm)	1728	4959	0	1668	3434	0	1395	1615	0	1365	1524	0
Satd. Flow (RTOR)		1			6			554			164	
Adj. Flow (vph)	11	1430	8	4	1229	51	6	0	31	64	0	36
Lane Group Flow (vph)	11	1438	0	4	1280	0	6	31	0	64	36	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			16.0	16.0		16.0	16.0	
Total Split (s)	12.0	53.0		32.0			33.0	33.0		33.0	33.0	
Total Split (%)	8.6%	37.9%		22.9%			23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	6.0	47.0		26.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.11	0.82		0.01	0.53		0.02	0.04		0.24	0.08	
Control Delay (s/veh)	65.4	46.1		62.5	2.1		44.8	0.1		49.4	0.4	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.4	46.1		62.5	2.2		44.8	0.1		49.4	0.4	
Queue Length 50th (ft)	10	441		3	27		4	0		51	0	
Queue Length 95th (ft)	32	504		m6	38		13	0		92	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	98	1752		348	2412		288	773		282	445	
Starvation Cap Reductn	0	0		0	238		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	0.11	0.82		0.01	0.59		0.02	0.04		0.23	0.08	

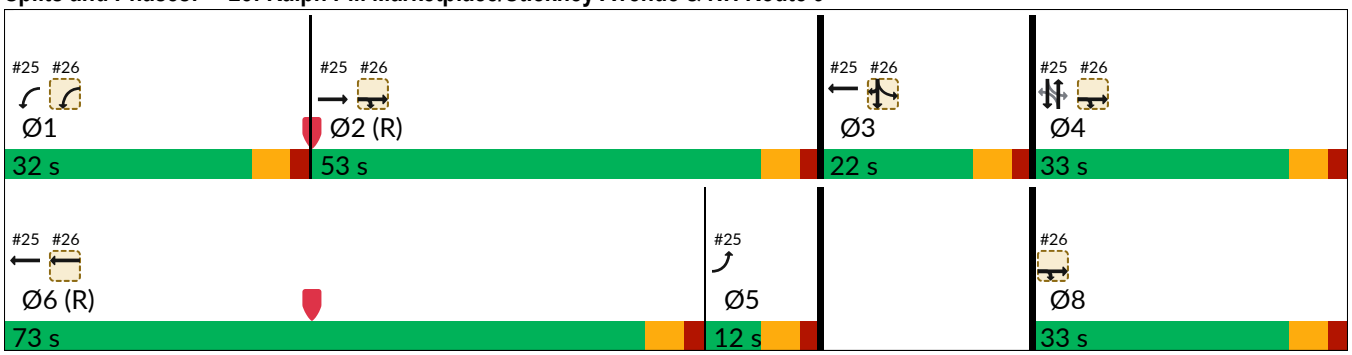
Intersection Summary
Cycle Length: 140

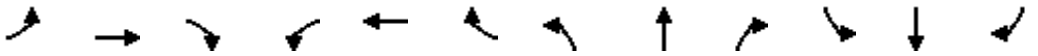
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	16.0	24.0	33.0
Total Split (s)	22.0	73.0	33.0
Total Split (%)	16%	52%	24%
Maximum Green (s)	16.0	67.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

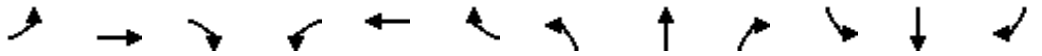




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1330	7	4	1131	47	4	0	20	54	0	30
Future Volume (vph)	10	1330	7	4	1131	47	4	0	20	54	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4960		1668	3434		1805	1615		1760	1524	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1728	4960		1668	3434		1394	1615		1365	1524	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64	0.84	0.84	0.84
Adj. Flow (vph)	11	1430	8	4	1229	51	6	0	31	64	0	36
RTOR Reduction (vph)	0	1	0	0	2	0	0	25	0	0	29	0
Lane Group Flow (vph)	11	1437	0	4	1278	0	6	6	0	64	7	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	47.5		27.2	88.3		25.3	25.3		25.3	25.3	
Effective Green, g (s)	4.4	49.5		29.2	92.3		27.3	27.3		27.3	27.3	
Actuated g/C Ratio	0.03	0.35		0.21	0.66		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	54	1753		347	2263		271	314		266	297	
v/s Ratio Prot	0.01	c0.29		0.00	c0.37			0.00			0.00	
v/s Ratio Perm							0.00			c0.05		
v/c Ratio	0.20	0.82		0.01	0.56		0.02	0.02		0.24	0.02	
Uniform Delay, d1	66.1	41.2		44.0	12.9		45.6	45.5		47.6	45.6	
Progression Factor	1.00	1.00		1.38	0.17		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	4.4		0.0	0.3		0.0	0.0		0.5	0.0	
Delay (s)	68.0	45.6		60.8	2.4		45.6	45.6		48.1	45.6	
Level of Service	E	D		E	A		D	D		D	D	
Approach Delay (s/veh)		45.8			2.6			45.6			47.2	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1186	218	626	969	0	0	0	0	145	0	213
Future Volume (vph)	0	1186	218	626	969	0	0	0	0	145	0	213
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			240									173
Adj. Flow (vph)	0	1303	240	639	989	0	0	0	0	165	0	242
Lane Group Flow (vph)	0	1303	240	639	989	0	0	0	0	0	165	242
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					16.0	16.0	16.0
Total Split (s)				32.0	73.0					22.0	22.0	22.0
Total Split (%)				22.9%	52.1%					15.7%	15.7%	15.7%
Maximum Green (s)				26.0	67.0					16.0	16.0	16.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.48	0.22	0.95	0.53						0.72	0.68
Control Delay (s/veh)		1.4	0.3	102.2	9.9						76.8	28.2
Queue Delay		0.5	1.2	46.8	0.7						78.7	0.0
Total Delay (s/veh)		1.9	1.6	149.0	10.6						155.6	28.2
Queue Length 50th (ft)		13	0	297	100						148	59
Queue Length 95th (ft)		24	m0	#427	152						#236	148
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2754	1110	676	1856						229	356
Starvation Cap Reductn		894	660	271	495						0	0
Spillback Cap Reductn		549	0	0	0						149	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.70	0.53	1.58	0.73						2.06	0.68

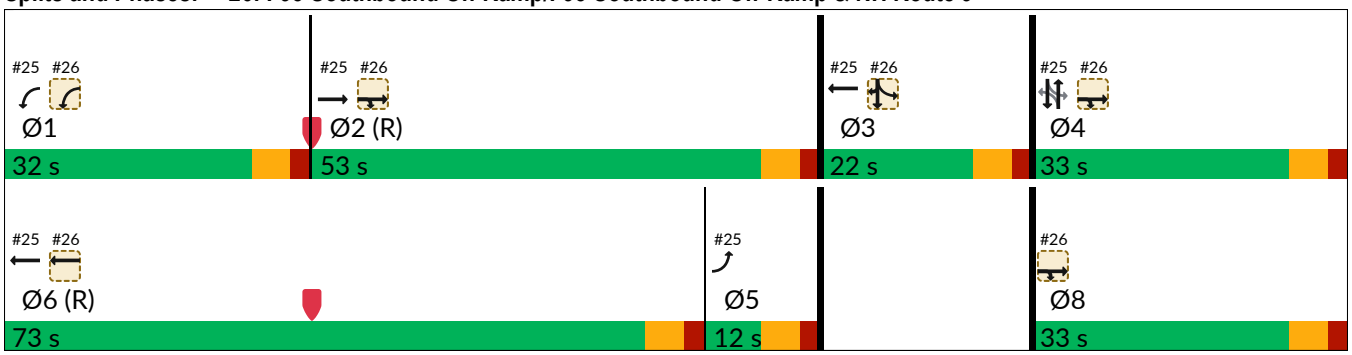
Intersection Summary
Cycle Length: 140

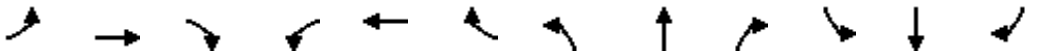
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	16.0	12.0	33.0
Total Split (s)	53.0	33.0	12.0	33.0
Total Split (%)	38%	24%	9%	24%
Maximum Green (s)	47.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
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.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

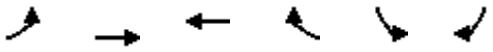




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1186	218	626	969	0	0	0	0	145	0	213
Future Volume (vph)	0	1186	218	626	969	0	0	0	0	145	0	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3236	3336						1787	1599
Peak-hour factor, PHF	0.91	0.91	0.91	0.98	0.98	0.98	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	0	1303	240	639	989	0	0	0	0	165	0	242
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	0	0	0	151
Lane Group Flow (vph)	0	1303	132	639	989	0	0	0	0	0	165	91
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		72.8	72.8	27.2	72.3						16.0	16.0
Effective Green, g (s)		76.8	76.8	29.2	74.3						18.0	18.0
Actuated g/C Ratio		0.55	0.55	0.21	0.53						0.13	0.13
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2696	984	674	1770						229	205
v/s Ratio Prot		c0.27	0.07	c0.20	c0.30						c0.09	0.06
v/s Ratio Perm												
v/c Ratio		0.48	0.13	0.95	0.56						0.72	0.45
Uniform Delay, d1		19.4	15.4	54.7	21.9						58.6	56.4
Progression Factor		0.10	0.04	1.51	0.42						1.00	1.00
Incremental Delay, d2		0.1	0.0	21.0	1.2						10.6	1.5
Delay (s)		2.0	0.7	103.4	10.4						69.2	57.9
Level of Service		A	A	F	B						E	E
Approach Delay (s/veh)		1.8			46.9			0.0			62.5	
Approach LOS		A			D			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

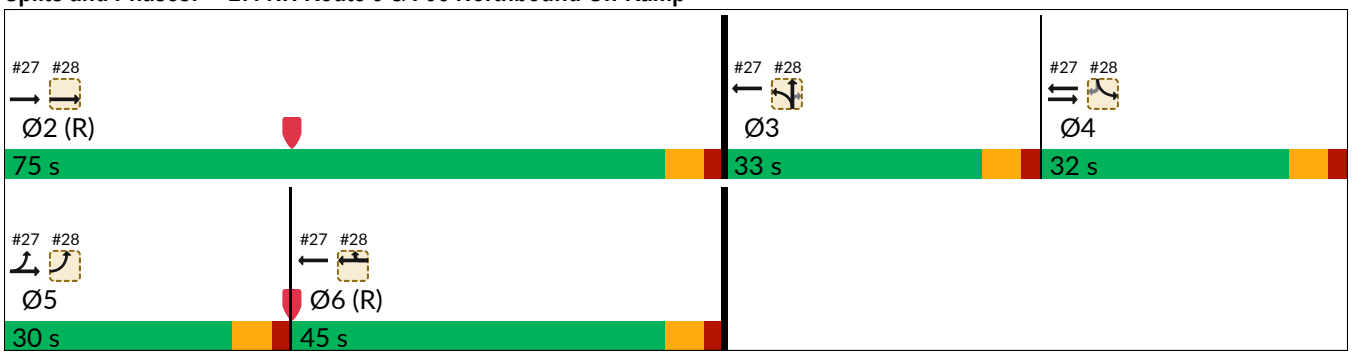


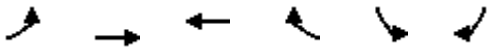
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	237	1094	1595	282	0	0				
Future Volume (vph)	237	1094	1595	282	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				137						
Adj. Flow (vph)	266	1229	1661	294	0	0				
Lane Group Flow (vph)	266	1229	1661	294	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	30.0						75.0	33.0	32.0	45.0
Total Split (%)	21.4%						54%	24%	23%	32%
Maximum Green (s)	24.0						69.0	27.0	26.0	39.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lead							Lead	Lag	Lag
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.86	0.50	0.46	0.18						
Control Delay (s/veh)	91.9	21.7	1.5	0.0						
Queue Delay	59.6	1.4	5.5	0.0						
Total Delay (s/veh)	151.6	23.1	7.0	0.0						
Queue Length 50th (ft)	261	407	37	0						
Queue Length 95th (ft)	#397	475	m33	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	309	2454	3628	1652						
Starvation Cap Reductn	148	952	1897	0						
Spillback Cap Reductn	0	302	1242	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	1.65	0.82	0.96	0.18						

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

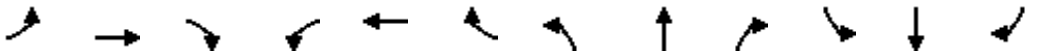




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	237	1094	1595	282	0	0
Future Volume (vph)	237	1094	1595	282	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.89	0.89	0.96	0.96	0.90	0.90
Adj. Flow (vph)	266	1229	1661	294	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	266	1229	1661	294	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	24.0	101.0	104.0	140.0		
Effective Green, g (s)	26.0	103.0	106.0	140.0		
Actuated g/C Ratio	0.19	0.74	0.76	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	309	2454	3628	1652		
v/s Ratio Prot	c0.16	c0.37	c0.35			
v/s Ratio Perm				0.18		
v/c Ratio	0.86	0.50	0.46	0.18		
Uniform Delay, d1	55.2	7.7	6.3	0.0		
Progression Factor	1.25	2.68	0.22	1.00		
Incremental Delay, d2	19.0	0.1	0.0	0.0		
Delay (s)	88.1	20.9	1.4	0.0		
Level of Service	F	C	A	A		
Approach Delay (s/veh)		32.9	1.2		0.0	
Approach LOS		C	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

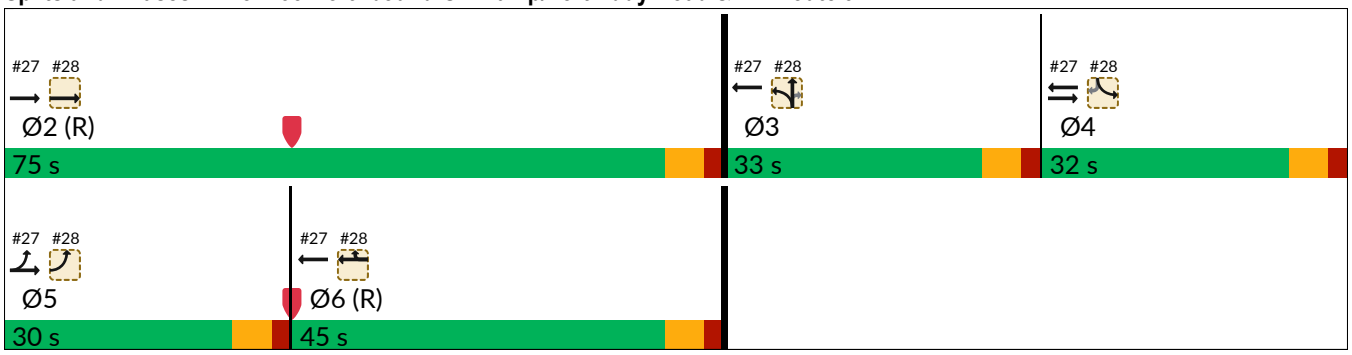


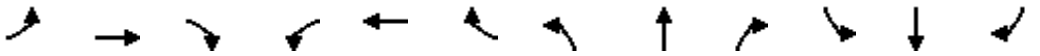
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	743	0	0	1122	374	163	292	411	227	0	592
Future Volume (vph)	351	743	0	0	1122	374	163	292	411	227	0	592
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.940	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1770	3187	1489	3467	0	1652
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1770	3187	1489	3467	0	1652
Satd. Flow (RTOR)						322		86	151			397
Adj. Flow (vph)	394	835	0	0	1275	425	181	324	457	247	0	643
Lane Group Flow (vph)	394	835	0	0	1275	425	181	539	242	247	0	643
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	30.0	75.0			45.0	45.0	33.0	33.0	33.0	32.0		32.0
Total Split (%)	21.4%	53.6%			32.1%	32.1%	23.6%	23.6%	23.6%	22.9%		22.9%
Maximum Green (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead				Lag	Lag	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.66	0.48			1.26	0.60	0.49	0.74	0.57	0.36		0.99
Control Delay (s/veh)	45.4	23.5			170.1	24.2	54.4	50.4	24.2	50.0		54.8
Queue Delay	12.4	0.5			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	57.8	24.1			170.1	24.2	54.4	50.4	24.2	50.0		54.8
Queue Length 50th (ft)	197	324			~756	86	149	219	80	101		272
Queue Length 95th (ft)	245	393			#874	m266	230	292	184	144		#542
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	600	1752			1011	711	366	728	428	693		648
Starvation Cap Reductn	183	481			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.94	0.66			1.26	0.60	0.49	0.74	0.57	0.36		0.99

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	743	0	0	1122	374	163	292	411	227	0	592
Future Volume (vph)	351	743	0	0	1122	374	163	292	411	227	0	592
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.94	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1770	3187	1489	3467		1652
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1770	3187	1489	3467		1652
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	394	835	0	0	1275	425	181	324	457	247	0	643
RTOR Reduction (vph)	0	0	0	0	0	228	0	68	120	0	0	318
Lane Group Flow (vph)	394	835	0	0	1275	197	181	471	122	247	0	325
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
Effective Green, g (s)	26.0	71.0			41.0	41.0	29.0	29.0	29.0	28.0		28.0
Actuated g/C Ratio	0.19	0.51			0.29	0.29	0.21	0.21	0.21	0.20		0.20
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	600	1752			1011	483	366	660	308	693		330
v/s Ratio Prot	c0.12	0.24			c0.37	0.12	0.10	c0.15		0.07		
v/s Ratio Perm									0.08			c0.20
v/c Ratio	0.66	0.48			1.26	0.41	0.49	0.71	0.40	0.36		0.99
Uniform Delay, d1	52.9	22.4			49.5	39.8	49.0	51.6	47.9	48.2		55.8
Progression Factor	0.76	1.00			1.17	2.07	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.3	0.8			123.7	1.9	1.1	3.7	0.8	0.3		45.4
Delay (s)	42.5	23.3			181.8	84.1	50.1	55.3	48.8	48.6		101.2
Level of Service	D	C			F	F	D	E	D	D		F
Approach Delay (s/veh)		29.5			157.4			52.7			86.6	
Approach LOS		C			F			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	90.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1085	264	23	1215	0	245	0	57	0	1
Future Volume (vph)	2	30	1085	264	23	1215	0	245	0	57	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	3455	0	0	1805	1669	0	1763
Flt Permitted		0.950			0.950				0.719			
Satd. Flow (perm)	0	1728	3455	1492	1728	3455	0	0	1366	1669	0	1763
Satd. Flow (RTOR)				125						78		57
Adj. Flow (vph)	2	32	1142	278	24	1293	0	336	0	78	0	2
Lane Group Flow (vph)	0	34	1142	278	24	1293	0	0	336	78	0	59
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Detector Phase	5	5	2	2	1	6		8	8	8	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0
Total Split (s)	20.0	20.0	75.0	75.0	20.0	75.0		45.0	45.0	45.0	45.0	45.0
Total Split (%)	14.3%	14.3%	53.6%	53.6%	14.3%	53.6%		32.1%	32.1%	32.1%	32.1%	32.1%
Maximum Green (s)	14.0	14.0	69.0	69.0	14.0	69.0		39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0	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	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	C-Min		None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0		0		0	0	0	0	0
v/c Ratio		0.27	0.55	0.30	0.20	0.63			0.87	0.15		0.11
Control Delay (s/veh)		62.9	20.4	9.4	62.9	18.5			70.3	7.9		9.4
Queue Delay		0.0	0.2	0.0	0.0	0.1			0.0	0.1		0.0
Total Delay (s/veh)		62.9	20.6	9.4	62.9	18.6			70.3	8.0		9.4
Queue Length 50th (ft)		30	424	54	22	378			284	0		1
Queue Length 95th (ft)		m52	444	185	m47	392			312	22		9
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150							
Base Capacity (vph)		197	2065	942	197	2050			411	557		570
Starvation Cap Reductn		0	0	0	0	86			0	0		0
Spillback Cap Reductn		0	267	0	0	0			0	138		0
Storage Cap Reductn		0	0	0	0	0			0	0		0
Reduced v/c Ratio		0.17	0.64	0.30	0.12	0.66			0.82	0.19		0.10

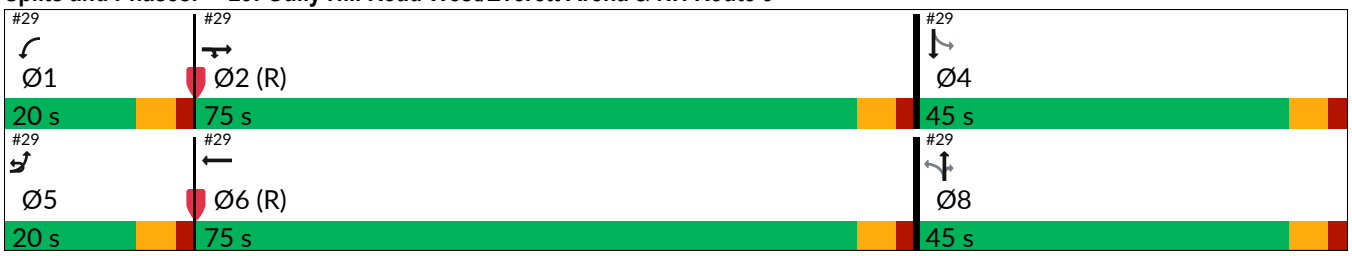
Intersection Summary
Cycle Length: 140

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	57
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Don't Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 127 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9

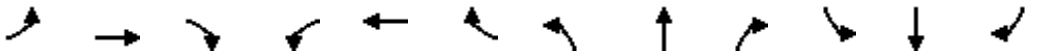


Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1085	264	23	1215	0	245	0	57	0	1
Future Volume (vph)	2	30	1085	264	23	1215	0	245	0	57	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	3455			1805	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00			0.72	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	3455			1365	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1142	278	24	1293	0	336	0	78	0	2
RTOR Reduction (vph)	0	0	0	52	0	0	0	0	0	56	0	41
Lane Group Flow (vph)	0	34	1142	226	24	1293	0	0	336	22	0	18
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Actuated Green, G (s)		5.7	79.3	79.3	5.1	78.7			37.6	37.6		37.6
Effective Green, g (s)		7.7	81.3	81.3	7.1	80.7			39.6	39.6		39.6
Actuated g/C Ratio		0.06	0.58	0.58	0.05	0.58			0.28	0.28		0.28
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)		95	2006	866	87	1991			386	472		498
v/s Ratio Prot		c0.02	0.33	0.15	0.01	c0.37						0.01
v/s Ratio Perm									c0.25	0.01		
v/c Ratio		0.36	0.57	0.26	0.28	0.65			0.87	0.05		0.04
Uniform Delay, d1		63.8	18.4	14.5	64.0	20.1			47.8	36.5		36.4
Progression Factor		0.96	1.03	0.99	0.97	0.82			1.00	1.00		1.00
Incremental Delay, d2		2.0	1.0	0.6	1.6	1.5			18.8	0.0		0.0
Delay (s)		63.4	19.9	15.0	63.7	18.0			66.5	36.5		36.4
Level of Service		E	B	B	E	B			E	D		D
Approach Delay (s/veh)			20.0			18.8			60.9			36.4
Approach LOS			B			B			E			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1040	80	162	1105	16	108	1	144	10	0	2
Future Volume (vph)	0	1040	80	162	1105	16	108	1	144	10	0	2
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.998			0.851			0.850	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1818	3417	0	1728	3448	0	1770	1585	0	1847	1652	0
Flt Permitted				0.950			0.950			0.950		
Satd. Flow (perm)	1818	3417	0	1728	3448	0	1770	1585	0	1847	1652	0
Satd. Flow (RTOR)		7			1			164			421	
Adj. Flow (vph)	0	1106	85	178	1214	18	123	1	164	24	0	5
Lane Group Flow (vph)	0	1191	0	178	1232	0	123	165	0	24	5	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	58.0		17.0	63.0		21.0	20.0		16.0	15.0	
Total Split (%)	8.6%	41.4%		12.1%	45.0%		15.0%	14.3%		11.4%	10.7%	
Maximum Green (s)	6.0	52.0		11.0	57.0		15.0	14.0		10.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.61		0.54	0.45		0.51	0.56		0.19	0.01	
Control Delay (s/veh)		33.9		58.1	6.3		62.9	16.0		64.7	0.0	
Queue Delay		4.2		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		38.0		58.1	6.3		62.9	16.0		64.7	0.0	
Queue Length 50th (ft)		602		150	164		105	1		21	0	
Queue Length 95th (ft)		679		227	307		168	64		23	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)				200			90					
Base Capacity (vph)		1955		329	2725		259	332		158	517	
Starvation Cap Reductn		668		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.93		0.54	0.45		0.47	0.50		0.15	0.01	

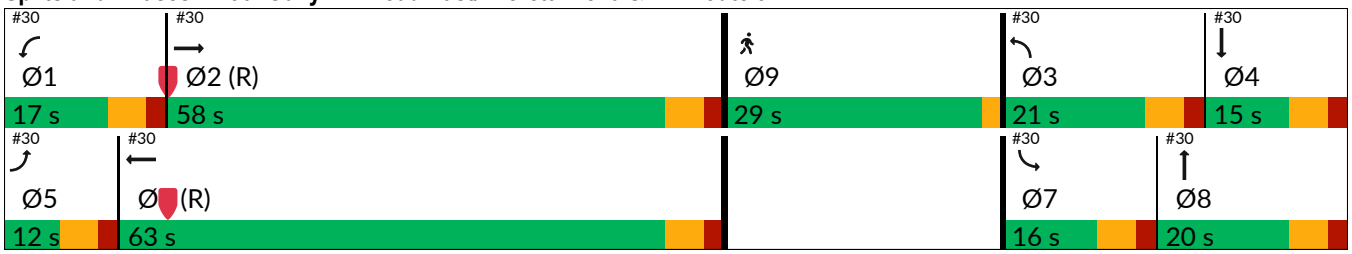
Intersection Summary
Cycle Length: 140

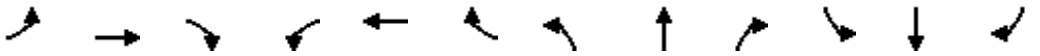
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	21%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 57 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

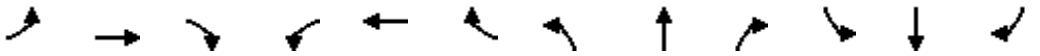




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1040	80	162	1105	16	108	1	144	10	0	2
Future Volume (vph)	0	1040	80	162	1105	16	108	1	144	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3418		1728	3448		1770	1585		1847	1652	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3418		1728	3448		1770	1585		1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1106	85	178	1214	18	123	1	164	24	0	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	146	0	0	5	0
Lane Group Flow (vph)	0	1188	0	178	1232	0	123	19	0	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		73.1		24.7	103.8		17.0	13.2		5.0	1.2	
Effective Green, g (s)		75.1		26.7	105.8		19.0	15.2		7.0	3.2	
Actuated g/C Ratio		0.54		0.19	0.76		0.14	0.11		0.05	0.02	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1833		329	2605		240	172		92	37	
v/s Ratio Prot		c0.35		c0.10	0.36		c0.07	c0.01		0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.65		0.54	0.47		0.51	0.11		0.26	0.00	
Uniform Delay, d1		23.1		51.1	6.5		56.2	56.3		64.0	66.8	
Progression Factor		1.53		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5		1.8	0.6		1.8	0.3		1.5	0.0	
Delay (s)		36.8		52.9	7.1		58.0	56.6		65.5	66.9	
Level of Service		D		D	A		E	E		E	E	
Approach Delay (s/veh)		36.8			12.9			57.2			65.8	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

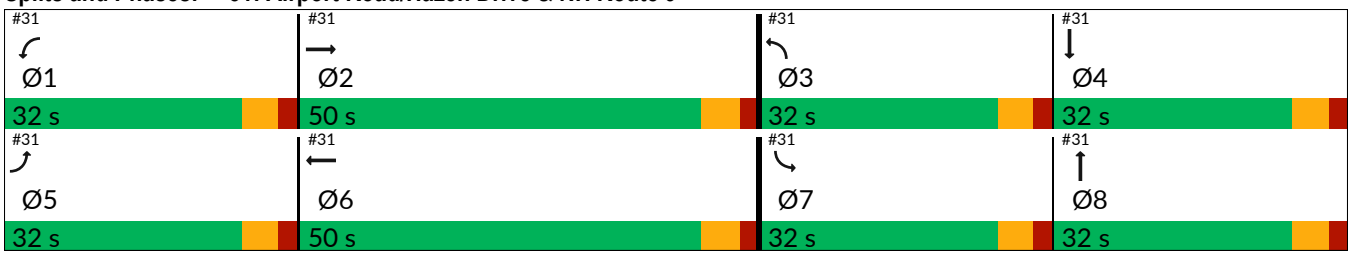


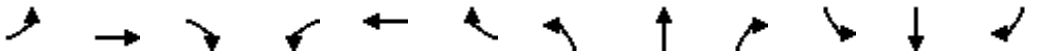
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	954	216	208	774	59	236	103	235	63	195	297
Future Volume (vph)	62	954	216	208	774	59	236	103	235	63	195	297
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			202			157			283			412
Adj. Flow (vph)	70	1072	243	219	815	62	284	124	283	89	275	418
Lane Group Flow (vph)	70	1072	243	219	815	62	284	124	283	89	275	418
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.42	0.92	0.15	0.73	0.55	0.04	0.85	0.25	0.18	0.49	0.82	0.27
Control Delay (s/veh)	68.3	58.7	0.2	69.3	32.8	0.1	78.2	42.4	0.2	68.6	74.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.3	58.7	0.2	69.3	32.8	0.1	78.2	42.4	0.2	68.6	74.3	0.4
Queue Length 50th (ft)	63	518	0	196	310	0	258	89	0	80	246	0
Queue Length 95th (ft)	113	#677	0	290	398	0	#367	144	0	107	272	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	365	1162	1599	365	1495	1652	354	495	1599	354	372	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.92	0.15	0.60	0.55	0.04	0.80	0.25	0.18	0.25	0.74	0.27

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 137.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	954	216	208	774	59	236	103	235	63	195	297
Future Volume (vph)	62	954	216	208	774	59	236	103	235	63	195	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.89	0.89	0.89	0.95	0.95	0.95	0.83	0.83	0.83	0.71	0.71	0.71
Adj. Flow (vph)	70	1072	243	219	815	62	284	124	283	89	275	418
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	70	1072	243	219	815	62	284	124	283	89	275	418
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.3	45.7	138.9	21.2	57.6	138.9	24.5	35.5	138.9	12.5	23.5	138.9
Effective Green, g (s)	11.3	47.7	138.9	23.2	59.6	138.9	26.5	37.5	138.9	14.5	25.5	138.9
Actuated g/C Ratio	0.08	0.34	1.00	0.17	0.43	1.00	0.19	0.27	1.00	0.10	0.18	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	145	1186	1599	298	1482	1652	329	490	1599	180	333	1546
v/s Ratio Prot	0.04	c0.31		c0.12	0.24		c0.16	0.07		0.05	c0.15	
v/s Ratio Perm			0.15			0.04			0.18			0.27
v/c Ratio	0.48	0.90	0.15	0.73	0.55	0.04	0.86	0.25	0.18	0.49	0.83	0.27
Uniform Delay, d1	61.0	43.4	0.0	54.9	29.6	0.0	54.4	39.7	0.0	58.7	54.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	9.8	0.2	9.1	0.4	0.0	20.2	0.3	0.2	2.1	15.3	0.4
Delay (s)	63.5	53.2	0.2	64.0	30.0	0.0	74.6	40.0	0.2	60.9	69.8	0.4
Level of Service	E	D	A	E	C	A	E	D	A	E	E	A
Approach Delay (s/veh)		44.4			35.1			37.9			31.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	138.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	94	897	35	24	753	280	114	237	52	328	127
Future Volume (vph)	7	94	897	35	24	753	280	114	237	52	328	127
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.994			0.959			0.973			0.948
Flt Protected		0.950			0.950			0.950			0.950	0.990
Satd. Flow (prot)	0	1787	3316	0	1668	3313	0	1668	1708	0	1585	1677
Flt Permitted		0.950			0.950			0.950			0.950	0.990
Satd. Flow (perm)	0	1787	3316	0	1668	3313	0	1668	1708	0	1585	1677
Satd. Flow (RTOR)			3			35			7			16
Adj. Flow (vph)	8	111	1055	41	26	801	298	127	263	58	342	132
Lane Group Flow (vph)	0	119	1096	0	26	1099	0	127	321	0	287	285
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.51	0.82		0.18	1.03		0.37	0.91		0.89	0.81
Control Delay (s/veh)		51.9	35.9		49.3	72.0		41.5	72.3		72.2	57.7
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		51.9	35.9		49.3	72.0		41.5	72.3		72.2	57.7
Queue Length 50th (ft)		79	379		17	~428		78	217		208	191
Queue Length 95th (ft)		129	#450		46	#584		140	#400		#385	#348
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		280	1344		262	1066		339	353		322	354
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	0.82		0.10	1.03		0.37	0.91		0.89	0.81

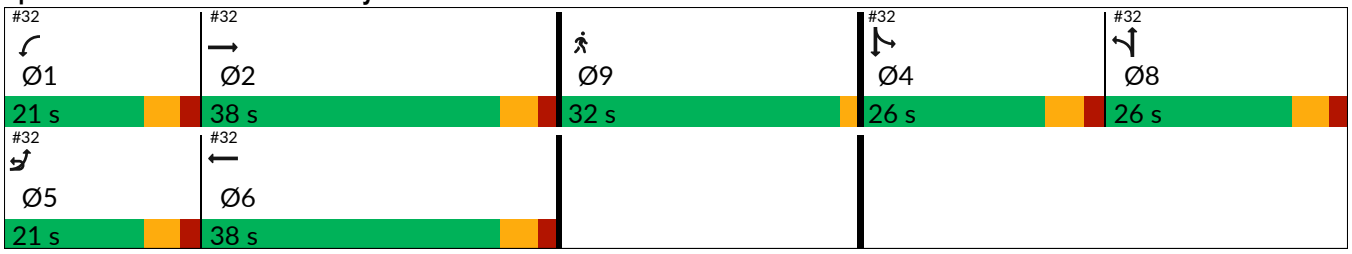
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	94	
Future Volume (vph)	94	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	98	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 108.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



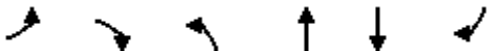
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	94	897	35	24	753	280	114	237	52	328	127
Future Volume (vph)	7	94	897	35	24	753	280	114	237	52	328	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	0.99		1.00	0.96		1.00	0.97		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (prot)		1787	3317		1668	3315		1668	1708		1585	1679
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (perm)		1787	3317		1668	3315		1668	1708		1585	1679
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	8	111	1055	41	26	801	298	127	263	58	342	132
RTOR Reduction (vph)	0	0	2	0	0	23	0	0	6	0	0	13
Lane Group Flow (vph)	0	119	1094	0	26	1076	0	127	315	0	287	272
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		12.1	41.8		4.8	34.5		20.0	20.0		20.0	20.0
Effective Green, g (s)		14.1	43.8		6.8	36.5		22.0	22.0		22.0	22.0
Actuated g/C Ratio		0.13	0.40		0.06	0.33		0.20	0.20		0.20	0.20
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		227	1313		102	1094		331	339		315	333
v/s Ratio Prot		c0.07	c0.33		0.02	c0.32		0.08	c0.18		c0.18	0.16
v/s Ratio Perm												
v/c Ratio		0.52	0.83		0.25	0.98		0.38	0.93		0.91	0.82
Uniform Delay, d1		45.1	30.1		49.5	36.7		38.4	43.5		43.3	42.4
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.2	4.7		1.3	23.0		0.7	31.4		29.0	14.3
Delay (s)		47.3	34.8		50.8	59.8		39.2	75.0		72.4	56.7
Level of Service		D	C		D	E		D	E		E	E
Approach Delay (s/veh)			36.0			59.6			64.8			64.6
Approach LOS			D			E			E			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	52.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	94
Future Volume (vph)	94
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	490	58	7	544	450	142			
Future Volume (vph)	490	58	7	544	450	142			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1787	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.994					
Satd. Flow (perm)	1787	1599	0	1808	1881	1546			
Satd. Flow (RTOR)		63				156			
Adj. Flow (vph)	583	69	9	680	495	156			
Lane Group Flow (vph)	583	69	0	689	495	156			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					45.0	25.0	45.0
Total Split (%)	33.3%	33.3%					43%	24%	43%
Maximum Green (s)	29.0	29.0					39.0	19.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	1.08	0.13		0.61	0.42	0.15			
Control Delay (s/veh)	98.9	8.8		14.9	14.0	4.6			
Queue Delay	0.0	0.0		0.0	1.0	0.0			
Total Delay (s/veh)	98.9	8.8		14.9	15.0	4.6			
Queue Length 50th (ft)	~452	3		258	163	4			
Queue Length 95th (ft)	#596	31		299	261	m30			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	539	527		1124	1169	1020			
Starvation Cap Reductn	0	0		0	415	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	1.08	0.13		0.61	0.66	0.15			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

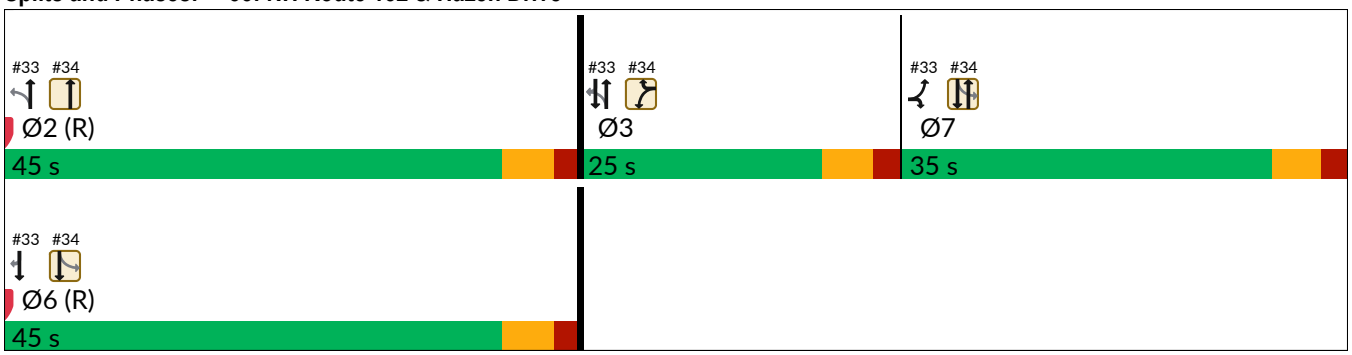
Control Type: Actuated-Coordinated

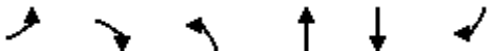
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	490	58	7	544	450	142
Future Volume (vph)	490	58	7	544	450	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1787	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1787	1599		1807	1881	1546
Peak-hour factor, PHF	0.84	0.84	0.80	0.80	0.91	0.91
Adj. Flow (vph)	583	69	9	680	495	156
RTOR Reduction (vph)	0	44	0	0	0	59
Lane Group Flow (vph)	583	25	0	689	495	97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	29.7	29.7		63.3	63.3	63.3
Effective Green, g (s)	31.7	31.7		65.3	65.3	65.3
Actuated g/C Ratio	0.30	0.30		0.62	0.62	0.62
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	539	482		1123	1169	961
v/s Ratio Prot	c0.33	0.02			0.26	
v/s Ratio Perm				c0.38		0.06
v/c Ratio	1.08	0.05		0.61	0.42	0.10
Uniform Delay, d1	36.7	26.0		12.1	10.2	8.0
Progression Factor	1.00	1.00		1.00	1.26	3.36
Incremental Delay, d2	62.7	0.0		1.0	0.2	0.0
Delay (s)	99.3	26.0		13.1	13.1	27.0
Level of Service	F	C		B	B	C
Approach Delay (s/veh)	91.6			13.1	16.4	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	248	154	823	220	44	359			
Future Volume (vph)	248	154	823	220	44	359			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.968						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3345	0	1728	1818			
Flt Permitted	0.950				0.176				
Satd. Flow (perm)	1787	1599	3345	0	320	1818			
Satd. Flow (RTOR)		170	83						
Adj. Flow (vph)	279	173	1016	272	47	386			
Lane Group Flow (vph)	279	173	1288	0	47	386			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	25.0	25.0					45.0	45.0	35.0
Total Split (%)	23.8%	23.8%					43%	43%	33%
Maximum Green (s)	19.0	19.0					39.0	39.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.77	0.38	0.53		0.20	0.29			
Control Delay (s/veh)	55.4	8.5	3.1		7.2	5.8			
Queue Delay	0.0	0.0	0.9		0.0	0.0			
Total Delay (s/veh)	55.4	8.5	4.0		7.2	5.8			
Queue Length 50th (ft)	181	2	65		9	79			
Queue Length 95th (ft)	#302	56	m80		24	117			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	362	459	2466		233	1328			
Starvation Cap Reductn	0	0	811		0	0			
Spillback Cap Reductn	0	0	0		0	0			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.77	0.38	0.78		0.20	0.29			

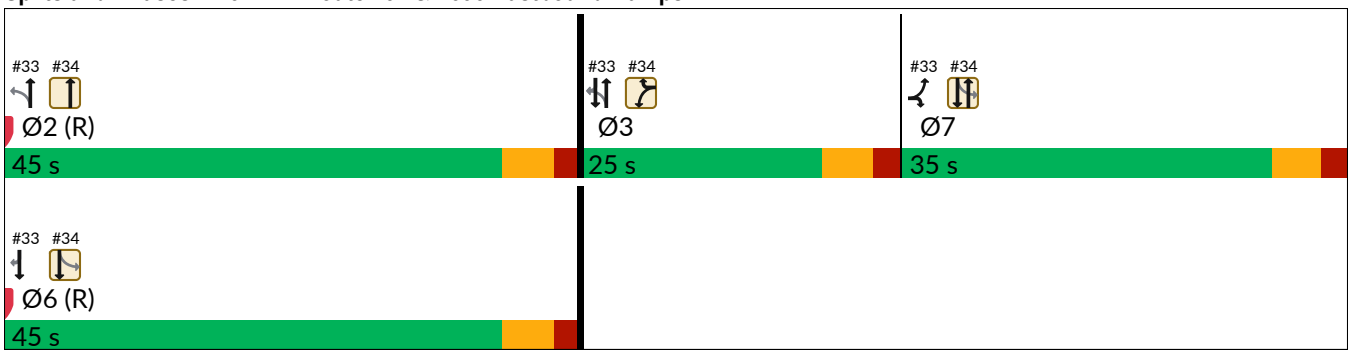
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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.

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	248	154	823	220	44	359
Future Volume (vph)	248	154	823	220	44	359
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3346		1728	1818
Flt Permitted	0.95	1.00	1.00		0.18	1.00
Satd. Flow (perm)	1787	1599	3346		320	1818
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.93	0.93
Adj. Flow (vph)	279	173	1016	272	47	386
RTOR Reduction (vph)	0	136	23	0	0	0
Lane Group Flow (vph)	279	37	1265	0	47	386
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	19.3	19.3	73.7		73.7	73.7
Effective Green, g (s)	21.3	21.3	75.7		75.7	75.7
Actuated g/C Ratio	0.20	0.20	0.72		0.72	0.72
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	362	324	2412		230	1310
v/s Ratio Prot	c0.16	0.02	c0.38			0.21
v/s Ratio Perm					0.15	
v/c Ratio	0.77	0.12	0.52		0.20	0.29
Uniform Delay, d1	39.5	34.2	6.6		4.8	5.2
Progression Factor	1.00	1.00	0.43		1.00	1.00
Incremental Delay, d2	9.7	0.2	0.1		0.4	0.1
Delay (s)	49.3	34.3	3.0		5.2	5.3
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	43.6		3.0			5.3
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

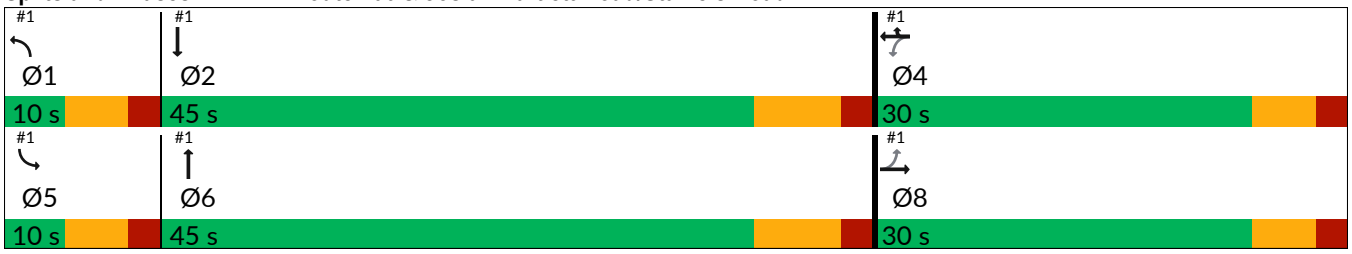
c Critical Lane Group

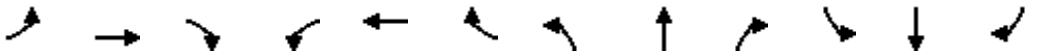
2027 No-Build Saturday Midday Peak-Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	59	0	34	5	693	64	29	777	6
Future Volume (vph)	0	5	1	59	0	34	5	693	64	29	777	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.981				0.850		0.987			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1864	0	0	1805	1615	1787	3528	0	1787	3571	0
Flt Permitted					0.748		0.950			0.950		
Satd. Flow (perm)	0	1864	0	0	1421	1615	1787	3528	0	1787	3571	0
Satd. Flow (RTOR)		2				135		15			1	
Adj. Flow (vph)	0	12	2	78	0	45	5	762	70	35	925	7
Lane Group Flow (vph)	0	14	0	0	78	45	5	832	0	35	932	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.25	0.10	0.03	0.38		0.23	0.40	
Control Delay (s/veh)		17.7			21.1	0.4	27.6	8.6		30.0	7.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.7			21.1	0.4	27.6	8.6		30.0	7.5	
Queue Length 50th (ft)		2			14	0	1	54		8	64	
Queue Length 95th (ft)		8			51	0	12	156		38	164	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		1042			794	962	153	2846		153	2878	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.10	0.05	0.03	0.29		0.23	0.32	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 49.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

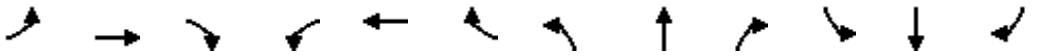
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	59	0	34	5	693	64	29	777	6
Future Volume (vph)	0	5	1	59	0	34	5	693	64	29	777	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1863			1805	1615	1787	3529		1787	3570	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1863			1422	1615	1787	3529		1787	3570	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	0	12	2	78	0	45	5	762	70	35	925	7
RTOR Reduction (vph)	0	2	0	0	0	38	0	7	0	0	0	0
Lane Group Flow (vph)	0	12	0	0	78	7	5	825	0	35	932	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.1			7.1	7.1	0.6	27.9		1.3	28.6	
Effective Green, g (s)		9.1			9.1	9.1	0.6	29.9		1.3	30.6	
Actuated g/C Ratio		0.16			0.16	0.16	0.01	0.54		0.02	0.55	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		303			231	263	19	1890		41	1957	
v/s Ratio Prot		0.01				0.00	0.00	0.23		c0.02	c0.26	
v/s Ratio Perm					c0.05							
v/c Ratio		0.04			0.34	0.03	0.26	0.44		0.85	0.48	
Uniform Delay, d1		19.7			20.7	19.6	27.4	7.8		27.2	7.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.9	0.0	7.3	0.2		85.0	0.2	
Delay (s)		19.7			21.6	19.7	34.7	8.0		112.1	7.9	
Level of Service		B			C	B	C	A		F	A	
Approach Delay (s/veh)		19.7			20.9			8.2			11.7	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	15.5
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

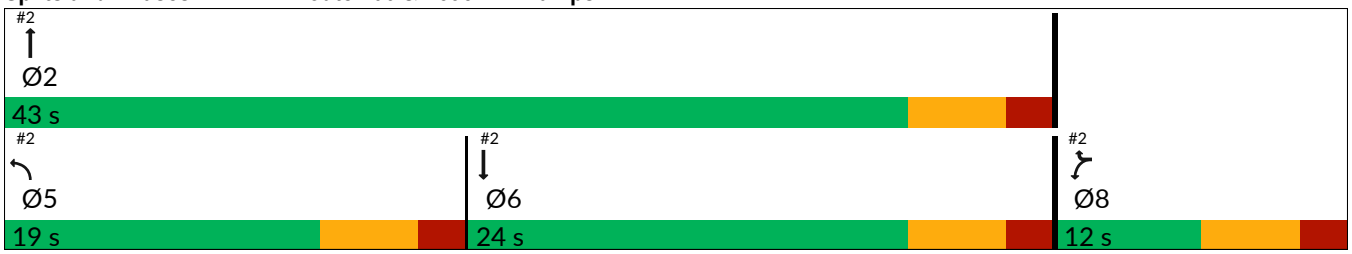


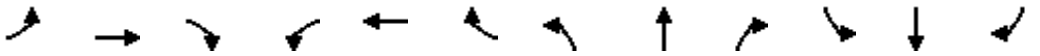
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	16	676	697	0	0	387	400
Future Volume (vph)	0	0	0	14	0	16	676	697	0	0	387	400
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Satd. Flow (RTOR)						179						444
Adj. Flow (vph)	0	0	0	21	0	24	719	741	0	0	430	444
Lane Group Flow (vph)	0	0	0	21	0	24	719	741	0	0	430	444
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.06		0.05	0.59	0.24			0.38	0.29
Control Delay (s/veh)				18.3		0.2	15.3	1.9			12.4	0.5
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				18.3		0.2	15.3	1.9			12.4	0.5
Queue Length 50th (ft)				3		0	44	0			31	0
Queue Length 95th (ft)				16		0	#169	51			83	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				385		474	1349	3111			1855	1546
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				0.05		0.05	0.53	0.24			0.23	0.29

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 39.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

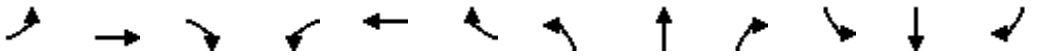




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	16	676	697	0	0	387	400
Future Volume (vph)	0	0	0	14	0	16	676	697	0	0	387	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1793		1553	3351	3455			3455	1546
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1793		1553	3351	3455			3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	21	0	24	719	741	0	0	430	444
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	21	0	2	719	741	0	0	430	444
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.8		1.8	12.4	29.6			11.2	43.4
Effective Green, g (s)				3.8		3.8	14.4	31.6			13.2	43.4
Actuated g/C Ratio				0.09		0.09	0.33	0.73			0.30	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				156		135	1111	2515			1050	1546
v/s Ratio Prot				0.01		0.00	c0.21	0.21			c0.12	
v/s Ratio Perm												c0.29
v/c Ratio				0.13		0.02	0.65	0.29			0.41	0.29
Uniform Delay, d1				18.3		18.1	12.3	2.0			12.0	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.4		0.0	1.3	0.1			0.3	0.5
Delay (s)				18.7		18.1	13.6	2.1			12.3	0.5
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			18.4			7.8			6.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

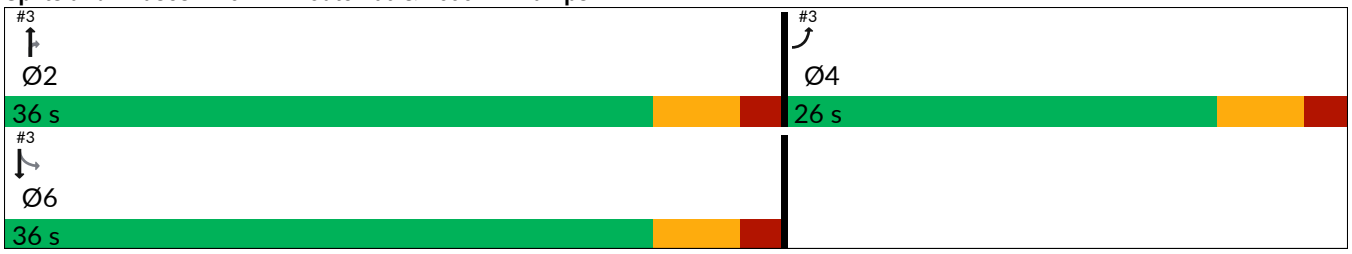
c Critical Lane Group

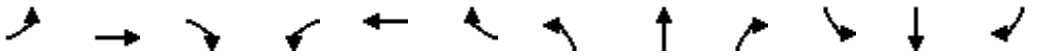


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	0	837	0	0	0	0	993	14	9	392	0
Future Volume (vph)	380	0	837	0	0	0	0	993	14	9	392	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2842	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.926	
Satd. Flow (perm)	3467	0	2842	0	0	0	0	3455	1546	0	3231	0
Satd. Flow (RTOR)			845						53			
Adj. Flow (vph)	384	0	845	0	0	0	0	1079	15	11	478	0
Lane Group Flow (vph)	384	0	845	0	0	0	0	1079	15	0	489	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.40		0.30					0.58	0.02		0.28	
Control Delay (s/veh)	15.6		0.3					8.5	0.1		6.2	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	15.6		0.3					8.5	0.1		6.2	
Queue Length 50th (ft)	42		0					84	0		31	
Queue Length 95th (ft)	85		0					151	1		53	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1730		2842					2508	1137		2346	
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	0.22		0.30					0.43	0.01		0.21	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 45.4
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	0	837	0	0	0	0	993	14	9	392	0
Future Volume (vph)	380	0	837	0	0	0	0	993	14	9	392	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2842					3455	1546		3486	
Flt Permitted	0.95		1.00					1.00	1.00		0.93	
Satd. Flow (perm)	3467		2842					3455	1546		3232	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92	0.82	0.82	0.82
Adj. Flow (vph)	384	0	845	0	0	0	0	1079	15	11	478	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	384	0	845	0	0	0	0	1079	8	0	489	0
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	10.6		45.0					22.4	22.4		22.4	
Effective Green, g (s)	12.6		45.0					24.4	24.4		24.4	
Actuated g/C Ratio	0.28		1.00					0.54	0.54		0.54	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	970		2842					1873	838		1752	
v/s Ratio Prot	c0.11							c0.31				
v/s Ratio Perm			0.30						0.01		0.15	
v/c Ratio	0.40		0.30					0.58	0.01		0.28	
Uniform Delay, d1	13.1		0.0					6.9	4.7		5.6	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.3		0.3					0.4	0.0		0.1	
Delay (s)	13.4		0.3					7.3	4.7		5.6	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.4			0.0			7.3			5.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

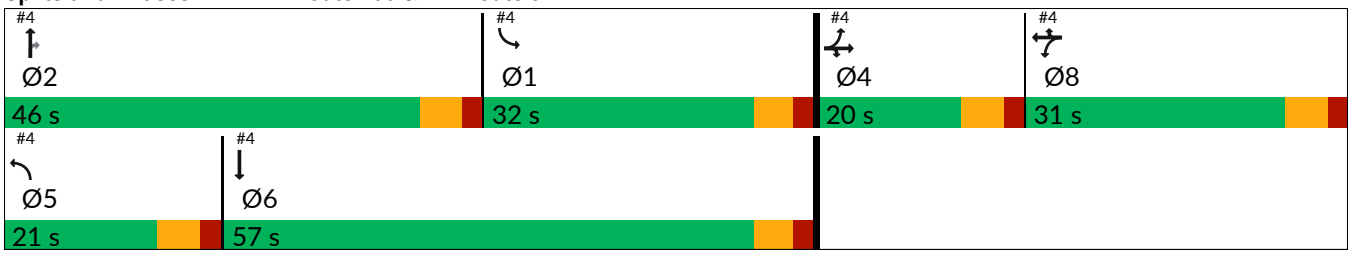
c Critical Lane Group

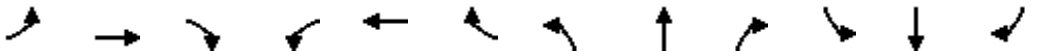
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	509	301	67	281	292	69	69	462	287	48	609	572
Future Volume (vph)	509	301	67	281	292	69	69	462	287	48	609	572
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.988		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1572	3270	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.988		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1572	3270	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			305			549
Adj. Flow (vph)	530	314	70	316	328	78	73	491	305	52	662	622
Lane Group Flow (vph)	530	314	70	209	435	78	73	491	305	52	662	622
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.83	0.91	0.16	0.57	0.57	0.16	0.32	0.53	0.48	0.19	0.64	0.34
Control Delay (s/veh)	51.6	72.0	0.8	39.4	35.0	0.7	44.1	32.1	6.4	37.8	31.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.6	72.0	0.8	39.4	35.0	0.7	44.1	32.1	6.4	37.8	31.6	0.5
Queue Length 50th (ft)	159	186	0	119	124	0	40	132	0	27	177	0
Queue Length 95th (ft)	#330	#449	0	228	202	0	94	207	65	68	268	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	635	344	437	502	1045	615	347	1718	922	573	2168	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.91	0.16	0.42	0.42	0.13	0.21	0.29	0.33	0.09	0.31	0.34

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 88.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	509	301	67	281	292	69	69	462	287	48	609	572
Future Volume (vph)	509	301	67	281	292	69	69	462	287	48	609	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1572	3269	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1572	3269	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	530	314	70	316	328	78	73	491	305	52	662	622
RTOR Reduction (vph)	0	0	57	0	0	60	0	0	225	0	0	0
Lane Group Flow (vph)	530	314	13	209	435	18	73	491	80	52	662	622
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.7	14.7	14.7	18.7	18.7	18.7	7.7	21.5	21.5	10.6	24.4	89.5
Effective Green, g (s)	16.7	16.7	16.7	20.7	20.7	20.7	9.7	23.5	23.5	12.6	26.4	89.5
Actuated g/C Ratio	0.19	0.19	0.19	0.23	0.23	0.23	0.11	0.26	0.26	0.14	0.29	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	625	339	288	363	756	357	187	907	405	243	1019	1812
v/s Ratio Prot	0.16	c0.17	0.01	0.13	c0.13	0.01	0.04	c0.14		0.03	c0.19	
v/s Ratio Perm									0.05			0.34
v/c Ratio	0.85	0.93	0.05	0.58	0.58	0.05	0.39	0.54	0.20	0.21	0.65	0.34
Uniform Delay, d1	35.2	35.8	29.9	30.5	30.5	26.8	37.1	28.4	25.7	34.1	27.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	30.4	0.1	2.2	1.1	0.1	1.3	0.7	0.2	0.4	1.4	0.5
Delay (s)	45.6	66.2	29.9	32.7	31.6	26.8	38.5	29.0	25.9	34.5	29.0	0.5
Level of Service	D	E	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		51.4			31.4			28.7			15.9	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	517.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	187	0	301	7	631	27	279	860	9
Future Vol, veh/h	5	0	10	187	0	301	7	631	27	279	860	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	79	79	79	94	94	94	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	10	0	20	237	0	381	7	671	29	303	935	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2232	2261	940	2227	-	671	945	0	0	700	0	0
Stage 1	1546	1546	-	686	-	-	-	-	-	-	-	-
Stage 2	686	715	-	1541	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	31	41	323	~ 31	0	460	730	-	-	902	-	-
Stage 1	145	178	-	441	0	-	-	-	-	-	-	-
Stage 2	441	438	-	~ 146	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	27	323	~ 19	-	460	730	-	-	902	-	-
Mov Cap-2 Maneuver	~ 3	27	-	~ 19	-	-	-	-	-	-	-	-
Stage 1	96	118	-	436	-	-	-	-	-	-	-	-
Stage 2	75	433	-	~ 91	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	$ 911.53	$ 2131.87	0.11	2.67
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	730	-	-	3	323	19	460	902	-	-
HCM Lane V/C Ratio	0.01	-	-	2.882	0.062	12.352	0.829	0.336	-	-
HCM Ctrl Dly (s/v)	10	-	-	$ 2700.8	16.9	$ 5497.9	40.7	11	-	-
HCM Lane LOS	A	-	-	F	C	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0.2	30.1	8	1.5	-	-

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

Intersection	
Int Delay, s/veh	37.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	223	215	777	860	197
Future Vol, veh/h	82	223	215	777	860	197
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	85	232	224	809	905	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2163	905	1113	0	-	0
Stage 1	905	-	-	-	-	-
Stage 2	1257	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	~ 53	338	631	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 34	338	631	-	-	-
Mov Cap-2 Maneuver	~ 34	-	-	-	-	-
Stage 1	257	-	-	-	-	-
Stage 2	270	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	278.07	2.99	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	631	-	34	338	-	-
HCM Lane V/C Ratio	0.355	-	2.511	0.688	-	-
HCM Ctrl Dly (s/v)	13.8	-	$ 935.9	36.2	-	-
HCM Lane LOS	B	-	F	E	-	-
HCM 95th %tile Q(veh)	1.6	-	9.7	4.8	-	-

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

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	19	16	968	1035	48
Future Vol, veh/h	24	19	16	968	1035	48
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	92	92	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	29	23	17	1052	1067	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2154	1067	1116	0	-	0
Stage 1	1067	-	-	-	-	-
Stage 2	1087	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	53	272	629	-	-	-
Stage 1	334	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	52	272	629	-	-	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	324	-	-	-	-	-
Stage 2	326	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	86.74	0.18	0
HCM LOS	F		

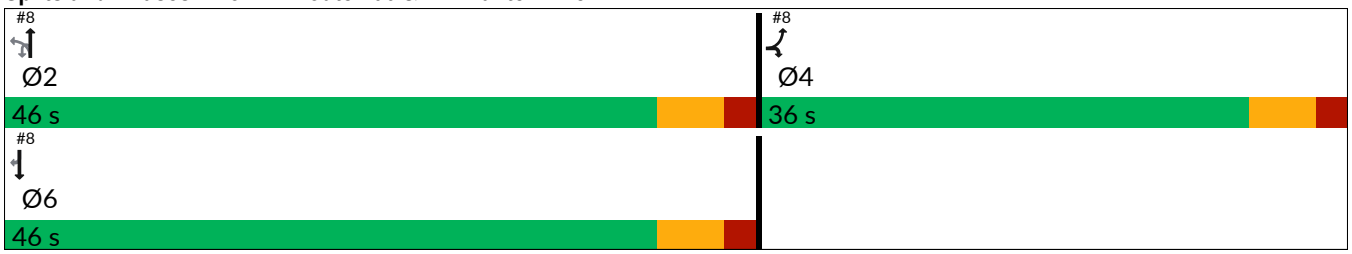
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	629	-	52	272	-	-
HCM Lane V/C Ratio	0.028	-	0.557	0.084	-	-
HCM Ctrl Dly (s/v)	10.9	-	140	19.4	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.2	0.3	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	307	132	2	167	677	655	399
Future Volume (vph)	307	132	2	167	677	655	399
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1745	1900	1837	1615
Flt Permitted	0.950			0.273			
Satd. Flow (perm)	1745	1561	0	501	1900	1837	1615
Satd. Flow (RTOR)		153					416
Adj. Flow (vph)	343	153	2	190	769	682	416
Lane Group Flow (vph)	343	153	0	192	769	682	416
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.67	0.27		0.65	0.68	0.63	0.37
Control Delay (s/veh)	28.6	4.6		25.6	15.5	14.1	2.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.6	4.6		25.6	15.5	14.1	2.1
Queue Length 50th (ft)	130	0		49	205	172	0
Queue Length 95th (ft)	197	31		#183	422	373	40
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	787	788		296	1125	1087	1126
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	0.44	0.19		0.65	0.68	0.63	0.37

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 71.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	307	132	2	167	677	655	399
Future Volume (vph)	307	132	2	167	677	655	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1745	1900	1837	1615
Flt Permitted	0.95	1.00		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		502	1900	1837	1615
Peak-hour factor, PHF	0.86	0.86	0.88	0.88	0.88	0.96	0.96
Growth Factor (vph)	96%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	343	153	2	190	769	682	416
RTOR Reduction (vph)	0	108	0	0	0	0	170
Lane Group Flow (vph)	343	45	0	192	769	682	246
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	19.1	19.1		40.2	40.2	40.2	40.2
Effective Green, g (s)	21.1	21.1		42.2	42.2	42.2	42.2
Actuated g/C Ratio	0.30	0.30		0.59	0.59	0.59	0.59
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	516	461		297	1124	1087	955
v/s Ratio Prot	c0.20	0.03			c0.40	0.37	
v/s Ratio Perm				0.38			0.15
v/c Ratio	0.66	0.10		0.65	0.68	0.63	0.26
Uniform Delay, d1	22.0	18.2		9.6	10.0	9.4	7.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.1		4.8	1.7	1.1	0.1
Delay (s)	25.2	18.3		14.4	11.7	10.6	7.2
Level of Service	C	B		B	B	B	A
Approach Delay (s/veh)	23.1				12.3	9.3	
Approach LOS	C				B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	128	172	825	692	16
Future Vol, veh/h	21	128	172	825	692	16
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	92	92
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	24	149	176	842	752	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1945	752	770	0	-	0
Stage 1	752	-	-	-	-	-
Stage 2	1193	-	-	-	-	-
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	72	413	854	-	-	-
Stage 1	469	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	57	413	854	-	-	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	63.16	1.78	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	854	-	220	-	-
HCM Lane V/C Ratio	0.206	-	0.786	-	-
HCM Ctrl Dly (s/v)	10.3	-	63.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	5.6	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	417	536	30	22	42
Future Vol, veh/h	24	417	536	30	22	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	72	72
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	28	491	596	33	31	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	629	0	-	0	914	612
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	302	-
Critical Hdwy	4.115	-	-	-	6.645	6.245
Critical Hdwy Stg 1	-	-	-	-	5.445	-
Critical Hdwy Stg 2	-	-	-	-	5.845	-
Follow-up Hdwy	2.2095	-	-	-	3.5285	3.3285
Pot Cap-1 Maneuver	957	-	-	-	286	490
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	957	-	-	-	277	490
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.48	0	15.49
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	957	-	-	-	277	490
HCM Lane V/C Ratio	0.03	-	-	-	0.11	0.119
HCM Ctrl Dly (s/v)	8.9	-	-	-	19.6	13.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.4

Intersection	
Int Delay, s/veh	11.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	294	90	140	438	111	147
Future Vol, veh/h	294	90	140	438	111	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	87	87	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	309	95	161	503	146	193

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	404	0	1182	202
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	825	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1165	-	198	811
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	434	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1165	-	171	811
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	434	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.08	44.58
HCM LOS			E

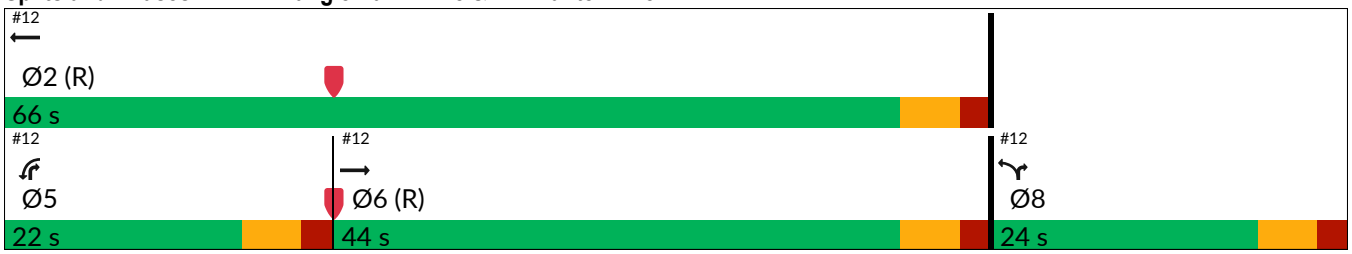
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	171	811	-	-	1165	-
HCM Lane V/C Ratio	0.855	0.238	-	-	0.138	-
HCM Ctrl Dly (s/v)	89.3	10.8	-	-	8.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	6	0.9	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	332	160	84	465	113	52
Future Volume (vph)	332	160	84	465	113	52
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.951					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3319	0	1728	1881	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3319	0	1728	1881	1805	1615
Satd. Flow (RTOR)	116					57
Adj. Flow (vph)	365	176	91	505	123	57
Lane Group Flow (vph)	541	0	91	505	123	57
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	44.0		22.0	66.0	24.0	
Total Split (%)	48.9%		24.4%	73.3%	26.7%	
Maximum Green (s)	38.0		16.0	60.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		None	C-Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.26		0.39	0.35	0.46	0.10
Control Delay (s/veh)	5.1		39.8	4.7	39.8	5.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.1		39.8	4.7	39.8	5.3
Queue Length 50th (ft)	13		48	74	65	0
Queue Length 95th (ft)	38		90	143	112	22
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2072		345	1433	401	663
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	0.26		0.26	0.35	0.31	0.09

Intersection Summary
Cycle Length: 90

Actuated Cycle Length: 90
Offset: 13 (14%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

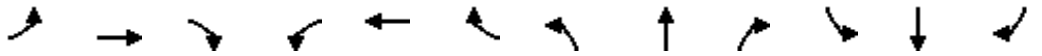
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	332	160	84	465	113	52
Future Volume (vph)	332	160	84	465	113	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3319		1728	1881	1805	1615
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3319		1728	1881	1805	1615
Peak-hour factor, PHF	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	365	176	91	505	123	57
RTOR Reduction (vph)	47	0	0	0	0	39
Lane Group Flow (vph)	494	0	91	505	123	18
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	51.8		8.8	66.6	11.4	26.2
Effective Green, g (s)	53.8		10.8	68.6	13.4	28.2
Actuated g/C Ratio	0.60		0.12	0.76	0.15	0.31
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1984		207	1433	268	506
v/s Ratio Prot	0.15		c0.05	c0.27	c0.07	0.01
v/s Ratio Perm						
v/c Ratio	0.25		0.44	0.35	0.46	0.04
Uniform Delay, d1	8.6		36.8	3.5	35.0	21.5
Progression Factor	0.61		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		1.5	0.7	1.2	0.0
Delay (s)	5.5		38.3	4.2	36.2	21.5
Level of Service	A		D	A	D	C
Approach Delay (s/veh)	5.5			9.4	31.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

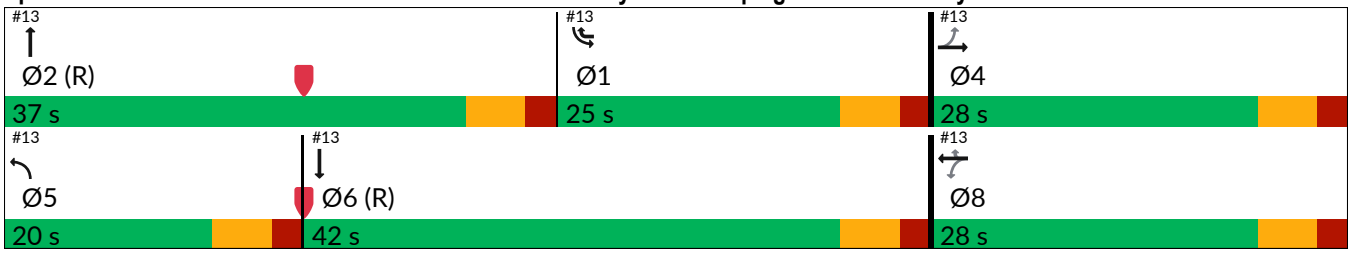


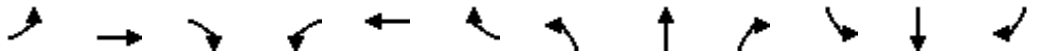
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	1	53	11	5	40	46	616	17	48	559	55
Future Volume (vph)	97	1	53	11	5	40	46	616	17	48	559	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.947				0.850		0.996			0.987	
Flt Protected		0.969			0.967		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1899	1669	1805	3476	0	3385	3444	0
Flt Permitted		0.789			0.742		0.950			0.950		
Satd. Flow (perm)	0	2697	0	0	1457	1669	1805	3476	0	3385	3444	0
Satd. Flow (RTOR)		65				109		3			14	
Adj. Flow (vph)	118	1	65	13	6	47	52	700	19	51	588	58
Lane Group Flow (vph)	0	184	0	0	19	47	52	719	0	51	646	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	28.0	28.0		28.0	28.0	25.0	20.0	37.0		25.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%	27.8%	22.2%	41.1%		27.8%	46.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0	19.0	14.0	31.0		19.0	36.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46			0.10	0.08	0.26	0.33		0.11	0.27	
Control Delay (s/veh)		26.5			34.4	0.3	42.3	8.0		34.0	7.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		26.5			34.4	0.3	42.3	8.0		34.0	7.4	
Queue Length 50th (ft)		33			10	0	29	83		12	77	
Queue Length 95th (ft)		54			27	0	62	126		29	130	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		766			388	608	320	2198		789	2351	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.24			0.05	0.08	0.16	0.33		0.06	0.27	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	1	53	11	5	40	46	616	17	48	559	55
Future Volume (vph)	97	1	53	11	5	40	46	616	17	48	559	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95		0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3312			1898	1669	1805	3476		3385	3443	
Flt Permitted		0.79			0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2697			1456	1669	1805	3476		3385	3443	
Peak-hour factor, PHF	0.82	0.82	0.82	0.86	0.86	0.86	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	118	1	65	13	6	47	52	700	19	51	588	58
RTOR Reduction (vph)	0	57	0	0	0	35	0	1	0	0	5	0
Lane Group Flow (vph)	0	127	0	0	19	12	52	718	0	51	641	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		9.5			9.5	19.5	5.6	52.5		10.0	56.9	
Effective Green, g (s)		11.5			11.5	23.5	7.6	54.5		12.0	58.9	
Actuated g/C Ratio		0.13			0.13	0.26	0.08	0.61		0.13	0.65	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		344			186	509	152	2104		451	2253	
v/s Ratio Prot						0.00	0.03	c0.21		0.02	c0.19	
v/s Ratio Perm		c0.05			0.01	0.00						
v/c Ratio		0.37			0.10	0.02	0.34	0.34		0.11	0.28	
Uniform Delay, d1		35.9			34.7	24.7	38.8	8.8		34.3	6.6	
Progression Factor		1.00			1.00	1.00	1.09	0.84		1.00	1.00	
Incremental Delay, d2		0.7			0.2	0.0	1.3	0.4		0.1	0.3	
Delay (s)		36.6			34.9	24.7	43.7	7.8		34.4	6.9	
Level of Service		D			C	C	D	A		C	A	
Approach Delay (s/veh)		36.6			27.7			10.2			8.9	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

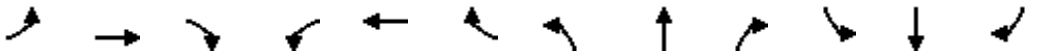
Intersection	
Int Delay, s/veh	0.7

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	3	58	1157	128	37	1286
Future Vol, veh/h	3	58	1157	128	37	1286
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	89	89	93	93	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	3	65	1244	138	38	1326

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2052	691	0	0	1382	0
Stage 1	1313	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	49	392	-	-	497	-
Stage 1	220	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	45	392	-	-	497	-
Mov Cap-2 Maneuver	45	-	-	-	-	-
Stage 1	203	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	20.95	0	0.36
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	293	497	-
HCM Lane V/C Ratio	-	-	0.232	0.077	-
HCM Ctrl Dly (s/v)	-	-	20.9	12.8	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.2	-

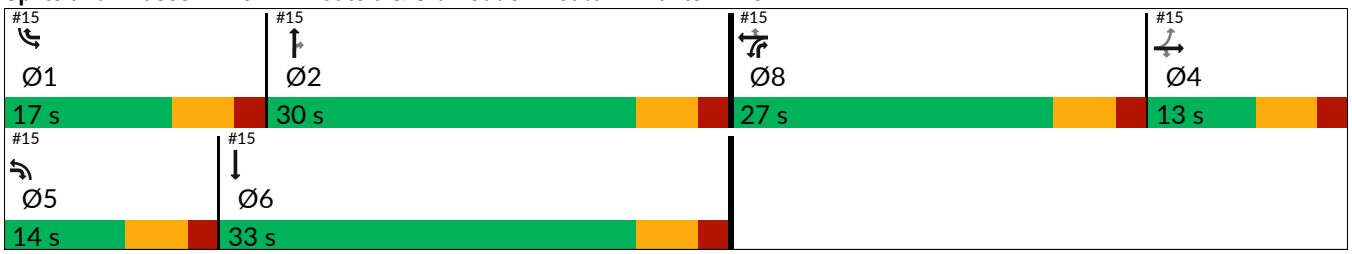


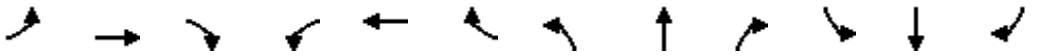
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	63	95	528	79	147	81	690	444	156	699	39
Future Volume (vph)	13	63	95	528	79	147	81	690	444	156	699	39
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.991		0.950	0.964		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1658	1740	1507	1787	3455	1599	3502	3462	0
Flt Permitted		0.855		0.950	0.964		0.950			0.950		
Satd. Flow (perm)	0	1570	1561	1658	1740	1507	1787	3455	1599	3502	3462	0
Satd. Flow (RTOR)			113			158			323		7	
Adj. Flow (vph)	16	76	114	568	85	158	87	742	477	175	785	44
Lane Group Flow (vph)	0	92	114	324	329	158	87	742	477	175	829	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	14.0	27.0	27.0	17.0	14.0	30.0	27.0	17.0	33.0	
Total Split (%)	14.9%	14.9%	16.1%	31.0%	31.0%	19.5%	16.1%	34.5%	31.0%	19.5%	37.9%	
Maximum Green (s)	7.0	7.0	8.0	21.0	21.0	11.0	8.0	24.0	21.0	11.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.51	0.25	0.72	0.69	0.21	0.40	0.70	0.42	0.35	0.64	
Control Delay (s/veh)		48.3	7.1	38.7	36.9	2.4	41.7	29.7	3.9	35.3	26.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		48.3	7.1	38.7	36.9	2.4	41.7	29.7	3.9	35.3	26.0	
Queue Length 50th (ft)		49	0	170	172	0	45	187	32	45	205	
Queue Length 95th (ft)		89	32	#295	#280	22	92	256	80	74	268	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		185	477	500	525	776	234	1191	1165	597	1321	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.50	0.24	0.65	0.63	0.20	0.37	0.62	0.41	0.29	0.63	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 79.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

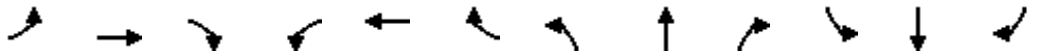




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	63	95	528	79	147	81	690	444	156	699	39
Future Volume (vph)	13	63	95	528	79	147	81	690	444	156	699	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1821	1561	1658	1740	1507	1787	3455	1599	3502	3462	
Flt Permitted		0.86	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1571	1561	1658	1740	1507	1787	3455	1599	3502	3462	
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	16	76	114	568	85	158	87	742	477	175	785	44
RTOR Reduction (vph)	0	0	92	0	0	95	0	0	136	0	4	0
Lane Group Flow (vph)	0	92	22	324	329	63	87	742	341	175	825	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.2	11.1	19.6	19.6	28.9	5.9	24.0	43.6	9.3	27.4	
Effective Green, g (s)		7.2	15.1	21.6	21.6	32.9	7.9	26.0	47.6	11.3	29.4	
Actuated g/C Ratio		0.09	0.18	0.26	0.26	0.40	0.10	0.32	0.58	0.14	0.36	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		137	363	436	457	603	171	1094	1004	482	1239	
v/s Ratio Prot			0.01	c0.20	0.19	0.01	c0.05	0.21	0.09	0.05	c0.24	
v/s Ratio Perm		c0.06	0.01			0.03			0.12			
v/c Ratio		0.67	0.06	0.74	0.72	0.11	0.51	0.68	0.34	0.36	0.67	
Uniform Delay, d1		36.3	27.6	27.7	27.5	15.4	35.3	24.4	9.0	32.1	22.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		12.2	0.1	6.7	5.4	0.1	2.4	1.7	0.2	0.5	1.4	
Delay (s)		48.5	27.7	34.4	32.9	15.5	37.6	26.1	9.2	32.6	23.6	
Level of Service		D	C	C	C	B	D	C	A	C	C	
Approach Delay (s/veh)		37.0			30.1			20.7			25.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



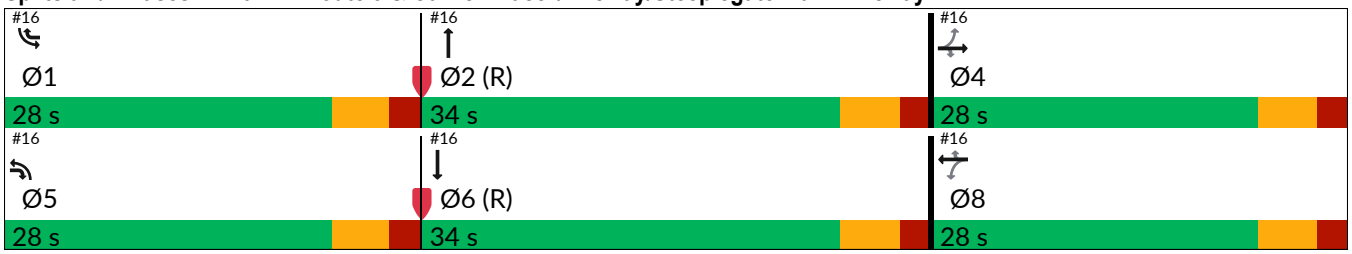
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	10	109	19	11	37	96	735	21	13	765	78
Future Volume (vph)	92	10	109	19	11	37	96	735	21	13	765	78
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.996			0.986	
Flt Protected		0.957			0.969		0.950			0.950		
Satd. Flow (prot)	0	1818	1615	0	1865	1636	1847	3441	0	1787	3407	0
Flt Permitted		0.723			0.786		0.950			0.950		
Satd. Flow (perm)	0	1374	1615	0	1513	1636	1847	3441	0	1787	3407	0
Satd. Flow (RTOR)			36			40		3			13	
Adj. Flow (vph)	102	11	121	21	12	40	105	808	23	15	869	89
Lane Group Flow (vph)	0	113	121	0	33	40	105	831	0	15	958	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0	34.0		28.0	34.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	37.8%		31.1%	37.8%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	28.0		22.0	28.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.51	0.23		0.14	0.09	0.41	0.34		0.09	0.47	
Control Delay (s/veh)		41.6	13.7		31.6	6.8	39.6	8.6		48.1	10.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		41.6	13.7		31.6	6.8	39.6	8.6		48.1	10.0	
Queue Length 50th (ft)		59	33		17	0	56	115		7	214	
Queue Length 95th (ft)		105	60		40	20	101	189		m23	188	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		366	737		403	748	492	2413		476	2034	
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		0.31	0.16		0.08	0.05	0.21	0.34		0.03	0.47	

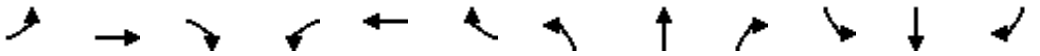
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	10	109	19	11	37	96	735	21	13	765	78
Future Volume (vph)	92	10	109	19	11	37	96	735	21	13	765	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1818	1615		1865	1636	1847	3441		1787	3407	
Flt Permitted		0.72	1.00		0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1374	1615		1513	1636	1847	3441		1787	3407	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	102	11	121	21	12	40	105	808	23	15	869	89
RTOR Reduction (vph)	0	0	26	0	0	31	0	1	0	0	5	0
Lane Group Flow (vph)	0	113	95	0	33	9	105	830	0	15	953	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		11.2	21.6		11.2	15.3	10.4	56.7		4.1	50.4	
Effective Green, g (s)		13.2	25.6		13.2	19.3	12.4	58.7		6.1	52.4	
Actuated g/C Ratio		0.15	0.28		0.15	0.21	0.14	0.65		0.07	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		201	531		221	423	254	2244		121	1983	
v/s Ratio Prot			0.02			0.00	c0.06	0.24		0.01	c0.28	
v/s Ratio Perm		c0.08	0.03		0.02	0.00						
v/c Ratio		0.56	0.18		0.15	0.02	0.41	0.37		0.12	0.48	
Uniform Delay, d1		35.7	24.3		33.5	27.9	35.5	7.2		39.4	10.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.27	0.75	
Incremental Delay, d2		3.6	0.2		0.3	0.0	1.1	0.5		0.4	0.8	
Delay (s)		39.3	24.4		33.8	27.9	36.6	7.6		50.5	8.9	
Level of Service		D	C		C	C	D	A		D	A	
Approach Delay (s/veh)		31.6			30.6			10.9			9.6	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

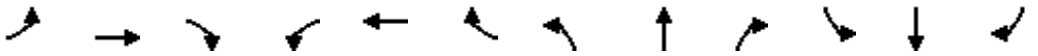
Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	831	33	10	853
Future Vol, veh/h	3	4	831	33	10	853
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	93	93	90	90
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	3	5	894	35	11	948

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1407	465	0	0	929	0
Stage 1	911	-	-	-	-	-
Stage 2	496	-	-	-	-	-
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	132	550	-	-	744	-
Stage 1	357	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	130	550	-	-	744	-
Mov Cap-2 Maneuver	130	-	-	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	583	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	21.14	0	0.11
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	231	744	-
HCM Lane V/C Ratio	-	-	0.034	0.015	-
HCM Ctrl Dly (s/v)	-	-	21.1	9.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



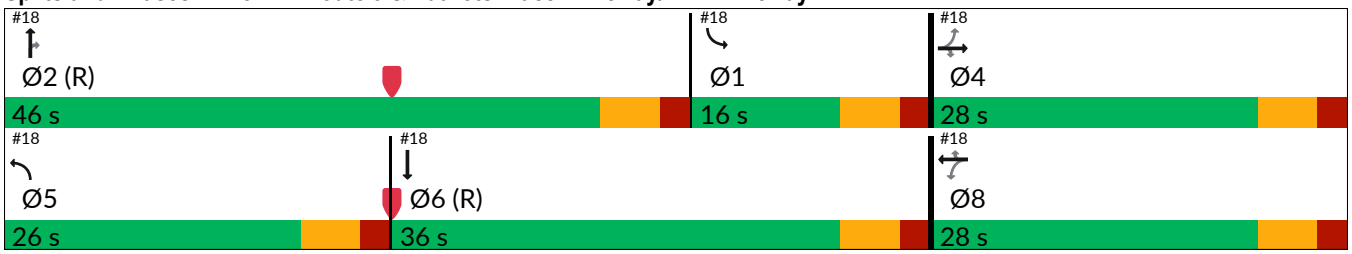
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	686	59	20	644	42
Future Volume (vph)	48	14	126	93	9	19	90	686	59	20	644	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3424	0
Flt Permitted		0.655			0.692		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1315	1615	1805	3490	1561	1787	3424	0
Satd. Flow (RTOR)			182			182			109		8	
Adj. Flow (vph)	57	17	150	131	13	27	101	771	66	23	740	48
Lane Group Flow (vph)	0	74	150	0	144	27	101	771	66	23	788	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	46.0	46.0	16.0	36.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	28.9%	51.1%	51.1%	17.8%	40.0%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	20.0	40.0	40.0	10.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.31	0.33		0.58	0.06	0.41	0.35	0.06	0.10	0.40	
Control Delay (s/veh)		33.3	4.6		41.8	0.3	32.5	7.7	0.3	24.5	9.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		33.3	4.6		41.8	0.3	32.5	7.7	0.3	24.5	9.8	
Queue Length 50th (ft)		37	0		75	0	38	18	0	8	88	
Queue Length 95th (ft)		65	22		94	0	58	177	0	m16	117	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		331	564		350	564	441	2232	1037	280	1946	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22	0.27		0.41	0.05	0.23	0.35	0.06	0.08	0.40	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 47 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

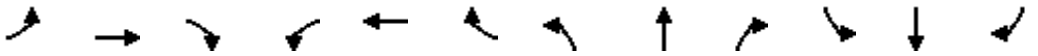
Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	686	59	20	644	42
Future Volume (vph)	48	14	126	93	9	19	90	686	59	20	644	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3424	
Flt Permitted		0.65	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1316	1615	1805	3490	1561	1787	3424	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	57	17	150	131	13	27	101	771	66	23	740	48
RTOR Reduction (vph)	0	0	122	0	0	22	0	0	27	0	4	0
Lane Group Flow (vph)	0	74	28	0	144	5	101	771	39	23	784	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.0	15.0		15.0	15.0	9.1	50.9	50.9	6.1	47.9	
Effective Green, g (s)		17.0	17.0		17.0	17.0	11.1	52.9	52.9	8.1	49.9	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.12	0.59	0.59	0.09	0.55	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		234	305		248	305	222	2051	917	160	1898	
v/s Ratio Prot							c0.06	0.22		0.01	c0.23	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.02			
v/c Ratio		0.32	0.09		0.58	0.02	0.45	0.38	0.04	0.14	0.41	
Uniform Delay, d1		31.5	30.1		33.3	29.7	36.6	9.8	7.8	37.8	11.6	
Progression Factor		1.00	1.00		1.00	1.00	0.80	0.64	0.16	0.74	0.69	
Incremental Delay, d2		0.8	0.1		3.4	0.0	1.4	0.5	0.1	0.4	0.6	
Delay (s)		32.3	30.3		36.7	29.7	30.7	6.8	1.3	28.3	8.7	
Level of Service		C	C		D	C	C	A	A	C	A	
Approach Delay (s/veh)		30.9			35.6			9.0			9.2	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



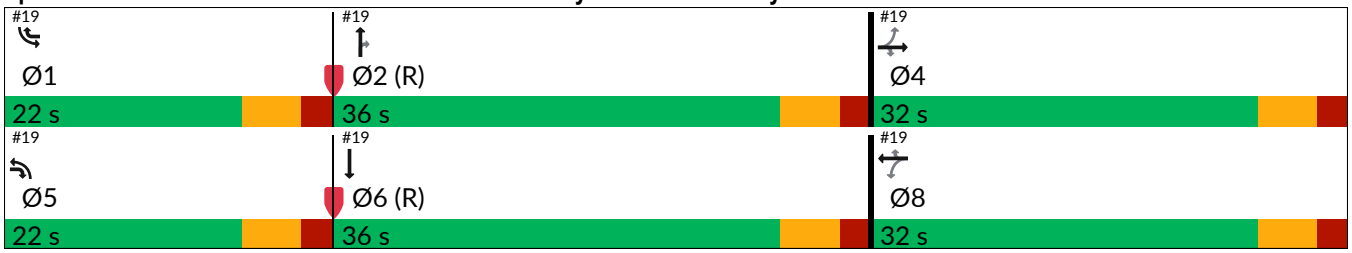
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	491	22	144	524	52
Future Volume (vph)	72	13	85	94	35	155	78	491	22	144	524	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.987	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1755	1546	1787	3455	1599	1685	3444	0
Flt Permitted		0.553			0.694		0.950			0.950		
Satd. Flow (perm)	0	1051	1615	0	1262	1546	1787	3455	1599	1685	3444	0
Satd. Flow (RTOR)			108			155			109		13	
Adj. Flow (vph)	91	16	108	112	42	185	84	528	24	162	589	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	528	24	162	647	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	32.0	32.0	22.0	32.0	32.0	22.0	22.0	36.0	36.0	22.0	36.0	
Total Split (%)	35.6%	35.6%	24.4%	35.6%	35.6%	24.4%	24.4%	40.0%	40.0%	24.4%	40.0%	
Maximum Green (s)	26.0	26.0	16.0	26.0	26.0	16.0	16.0	30.0	30.0	16.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.52	0.16		0.62	0.25	0.37	0.31	0.03	0.55	0.35	
Control Delay (s/veh)		40.1	3.5		43.2	3.9	53.9	6.3	0.1	40.2	13.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		40.1	3.5		43.2	3.9	53.9	6.3	0.1	40.2	13.5	
Queue Length 50th (ft)		55	0		81	10	50	48	0	85	100	
Queue Length 95th (ft)		84	18		122	32	99	24	0	136	174	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		326	773		392	778	357	1706	845	348	1869	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.33	0.14		0.39	0.24	0.24	0.31	0.03	0.47	0.35	

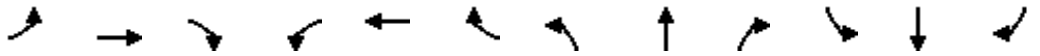
Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	491	22	144	524	52
Future Volume (vph)	72	13	85	94	35	155	78	491	22	144	524	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1755	1546	1787	3455	1599	1685	3443	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1050	1615		1263	1546	1787	3455	1599	1685	3443	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	91	16	108	112	42	185	84	528	24	162	589	58
RTOR Reduction (vph)	0	0	73	0	0	97	0	0	12	0	6	0
Lane Group Flow (vph)	0	107	35	0	154	88	84	528	12	162	641	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.7	25.3		15.7	29.5	9.6	42.5	42.5	13.8	46.7	
Effective Green, g (s)		17.7	29.3		17.7	33.5	11.6	44.5	44.5	15.8	48.7	
Actuated g/C Ratio		0.20	0.33		0.20	0.37	0.13	0.49	0.49	0.18	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		206	597		248	644	230	1708	790	295	1863	
v/s Ratio Prot			0.01			0.02	0.05	0.15		c0.10	c0.19	
v/s Ratio Perm		0.10	0.01		c0.12	0.03			0.01			
v/c Ratio		0.52	0.06		0.62	0.14	0.37	0.31	0.02	0.55	0.34	
Uniform Delay, d1		32.3	20.9		33.1	18.7	35.8	13.6	11.6	33.9	11.6	
Progression Factor		1.00	1.00		1.00	1.00	1.41	0.38	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.0		4.8	0.1	0.9	0.5	0.0	2.1	0.5	
Delay (s)		34.6	20.9		37.8	18.8	51.5	5.6	11.6	35.9	12.2	
Level of Service		C	C		D	B	D	A	B	D	B	
Approach Delay (s/veh)		27.7			27.4			11.9			16.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

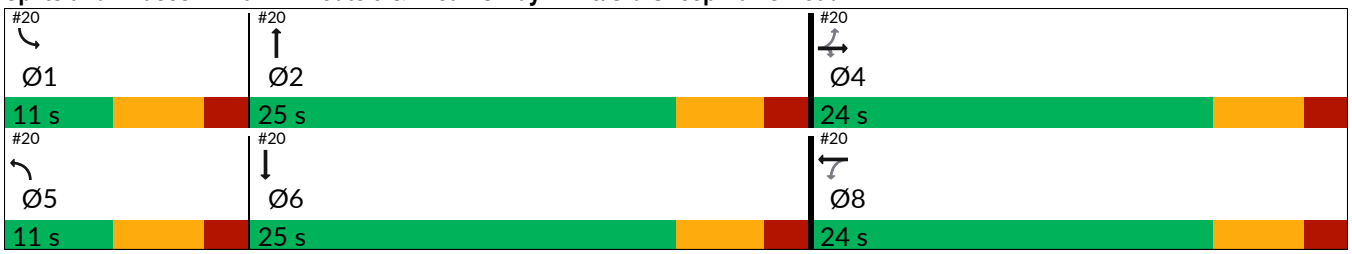
c Critical Lane Group

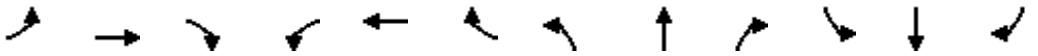
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	706	0	1	733	199
Future Volume (vph)	171	0	11	0	0	0	13	706	0	1	733	199
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850								0.967	
Flt Protected		0.950					0.950			0.950		
Satd. Flow (prot)	0	1865	1669	0	2153	0	1668	3455	0	1805	3375	0
Flt Permitted		0.757					0.950			0.950		
Satd. Flow (perm)	0	1486	1669	0	2153	0	1668	3455	0	1805	3375	0
Satd. Flow (RTOR)			164								66	
Adj. Flow (vph)	190	0	12	0	0	0	14	728	0	1	788	221
Lane Group Flow (vph)	0	190	12	0	0	0	14	728	0	1	1009	0
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0		11.0	25.0		11.0	25.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		18.3%	41.7%		18.3%	41.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		5.0	19.0		5.0	19.0	
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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
v/c Ratio		0.42	0.02				0.05	0.37		0.00	0.52	
Control Delay (s/veh)		16.2	0.1				20.2	9.5		20.0	10.9	
Queue Delay		0.0	0.0				0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.2	0.1				20.2	9.5		20.0	10.9	
Queue Length 50th (ft)		35	0				3	48		0	68	
Queue Length 95th (ft)		100	0				19	163		4	#262	
Internal Link Dist (ft)		54			538			1735			1472	
Turn Bay Length (ft)							160			200		
Base Capacity (vph)		727	900				285	2002		309	1983	
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		0.26	0.01				0.05	0.36		0.00	0.51	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 42.7
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road

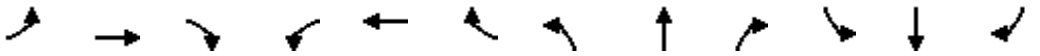




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	706	0	1	733	199
Future Volume (vph)	171	0	11	0	0	0	13	706	0	1	733	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	11	11
Total Lost time (s)		4.0	4.0				4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	1.00		1.00	0.97	
Flt Protected		0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1865	1669				1668	3455		1805	3375	
Flt Permitted		0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1487	1669				1668	3455		1805	3375	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.90	0.97	0.97	0.93	0.93	0.90
Adj. Flow (vph)	190	0	12	0	0	0	14	728	0	1	788	221
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	35	0
Lane Group Flow (vph)	0	190	3	0	0	0	14	728	0	1	974	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		9.1	9.1				0.7	21.2		0.7	21.2	
Effective Green, g (s)		11.1	11.1				2.7	23.2		2.7	23.2	
Actuated g/C Ratio		0.23	0.23				0.06	0.47		0.06	0.47	
Clearance Time (s)		6.0	6.0				6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0				3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		336	378				91	1635		99	1597	
v/s Ratio Prot							c0.01	0.21		0.00	c0.29	
v/s Ratio Perm		c0.13	0.00									
v/c Ratio		0.57	0.01				0.15	0.45		0.01	0.61	
Uniform Delay, d1		16.8	14.7				22.1	8.6		21.9	9.6	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2	0.0				0.8	0.2		0.0	0.7	
Delay (s)		19.0	14.7				22.9	8.8		21.9	10.2	
Level of Service		B	B				C	A		C	B	
Approach Delay (s/veh)		18.7			0.0			9.1			10.3	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

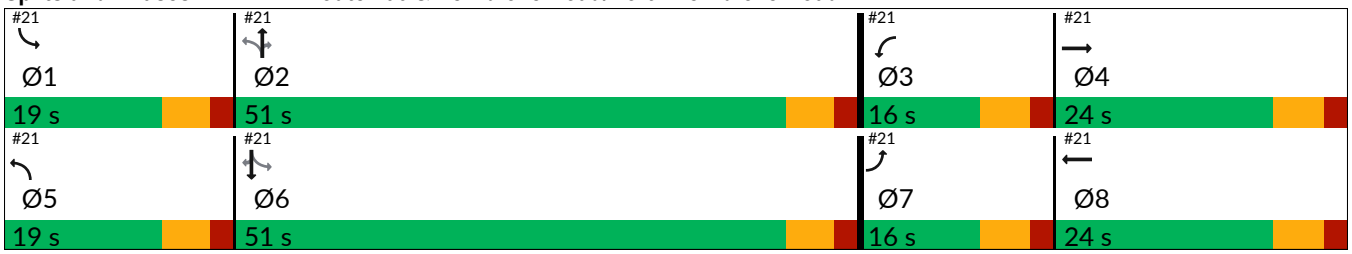


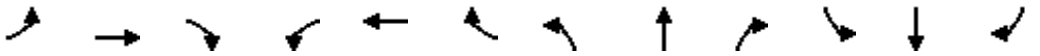
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	23	54	8	25	65	43	661	14	53	616	111
Future Volume (vph)	129	23	54	8	25	65	43	661	14	53	616	111
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.895			0.891				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1700	0	1770	1494	0	1847	1881	1599	1847	1881	1546
Flt Permitted	0.950			0.950			0.196			0.126		
Satd. Flow (perm)	1805	1700	0	1770	1494	0	381	1881	1599	245	1881	1546
Satd. Flow (RTOR)		68			76				149			149
Adj. Flow (vph)	161	29	68	9	29	76	49	751	16	60	692	125
Lane Group Flow (vph)	161	97	0	9	105	0	49	751	16	60	692	125
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.61	0.21		0.05	0.43		0.13	0.77	0.02	0.19	0.67	0.14
Control Delay (s/veh)	50.5	14.2		41.4	21.0		7.9	26.1	0.1	8.5	20.9	2.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.5	14.2		41.4	21.0		7.9	26.1	0.1	8.5	20.9	2.1
Queue Length 50th (ft)	92	13		5	16		10	350	0	12	304	0
Queue Length 95th (ft)	#160	49		20	59		25	#578	0	30	500	21
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	269	531		264	428		513	1100	997	452	1134	991
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.18		0.03	0.25		0.10	0.68	0.02	0.13	0.61	0.13

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 85.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

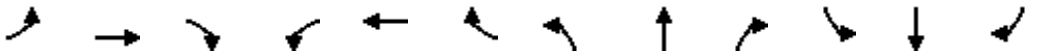




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	23	54	8	25	65	43	661	14	53	616	111
Future Volume (vph)	129	23	54	8	25	65	43	661	14	53	616	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1700		1770	1494		1847	1881	1599	1847	1881	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.20	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	1805	1700		1770	1494		380	1881	1599	245	1881	1546
Peak-hour factor, PHF	0.80	0.80	0.80	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	161	29	68	9	29	76	49	751	16	60	692	125
RTOR Reduction (vph)	0	53	0	0	66	0	0	0	8	0	0	62
Lane Group Flow (vph)	161	44	0	9	39	0	49	751	8	60	692	63
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.4	18.8		1.2	9.6		46.8	43.1	43.1	49.6	44.5	44.5
Effective Green, g (s)	12.4	20.8		3.2	11.6		50.8	45.1	45.1	53.6	46.5	46.5
Actuated g/C Ratio	0.13	0.23		0.03	0.13		0.55	0.49	0.49	0.58	0.50	0.50
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	242	383		61	187		300	920	782	265	948	779
v/s Ratio Prot	c0.09	0.03		0.01	c0.03		0.01	c0.40		c0.02	0.37	
v/s Ratio Perm							0.08		0.00	0.11		0.04
v/c Ratio	0.67	0.12		0.15	0.21		0.16	0.82	0.01	0.23	0.73	0.08
Uniform Delay, d1	37.9	28.4		43.2	36.2		12.6	20.0	12.1	14.1	17.9	11.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.1		1.1	0.5		0.3	5.7	0.0	0.4	2.8	0.0
Delay (s)	44.7	28.5		44.3	36.7		12.9	25.7	12.1	14.5	20.8	11.9
Level of Service	D	C		D	D		B	C	B	B	C	B
Approach Delay (s/veh)		38.6			37.3			24.7			19.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	4	38	1	3	1	30	457	1	0	462	215
Future Volume (vph)	250	4	38	1	3	1	30	457	1	0	462	215
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1589	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.752			0.724			0.203					
Satd. Flow (perm)	1429	1589	0	1376	2072	0	373	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		46			2				66			250
Adj. Flow (vph)	301	5	46	2	6	2	33	502	1	0	537	250
Lane Group Flow (vph)	301	51	0	2	8	0	33	502	1	0	537	250
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.61	0.09		0.00	0.01		0.08	0.54	0.00		0.71	0.32
Control Delay (s/veh)	23.3	6.7		14.0	13.0		6.6	11.3	0.0		22.1	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	23.3	6.7		14.0	13.0		6.6	11.3	0.0		22.1	3.6
Queue Length 50th (ft)	61	1		0	1		5	96	0		107	0
Queue Length 95th (ft)	#160	19		3	5		14	161	0		#314	35
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	490	575		472	712		501	1296	1159		760	791
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.61	0.09		0.00	0.01		0.07	0.39	0.00		0.71	0.32

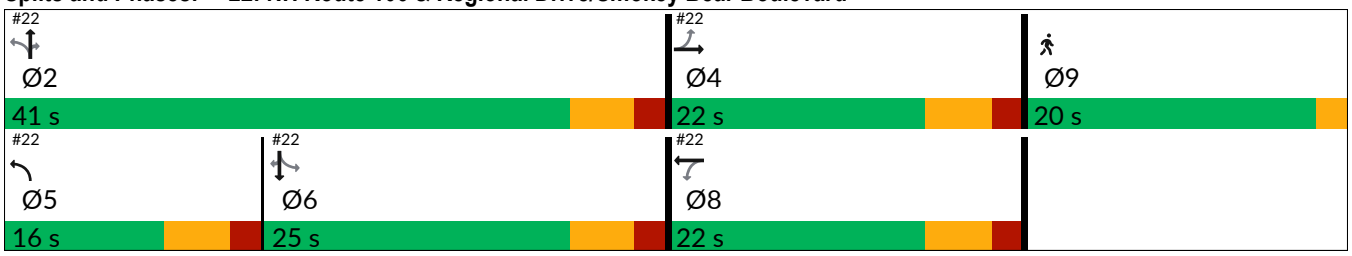
Intersection Summary
Cycle Length: 83

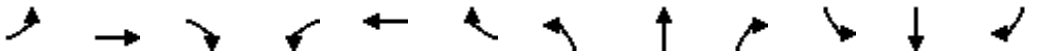
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 53.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

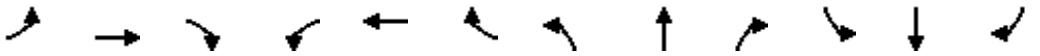




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	4	38	1	3	1	30	457	1	0	462	215
Future Volume (vph)	250	4	38	1	3	1	30	457	1	0	462	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1588		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.75	1.00		0.72	1.00		0.20	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1430	1588		1375	2073		374	1837	1615		1818	1546
Peak-hour factor, PHF	0.83	0.83	0.83	0.50	0.50	0.50	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	301	5	46	2	6	2	33	502	1	0	537	250
RTOR Reduction (vph)	0	31	0	0	1	0	0	0	0	0	0	152
Lane Group Flow (vph)	301	20	0	2	7	0	33	502	1	0	537	98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		28.6	28.6	28.6		20.2	20.2
Effective Green, g (s)	18.2	18.2		18.2	18.2		30.6	30.6	30.6		22.2	22.2
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.54	0.54	0.54		0.39	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	458	508		440	664		307	989	870		710	604
v/s Ratio Prot		0.01			0.00		0.01	c0.27			c0.30	
v/s Ratio Perm	c0.21			0.00			0.05		0.00			0.06
v/c Ratio	0.66	0.04		0.00	0.01		0.11	0.51	0.00		0.76	0.16
Uniform Delay, d1	16.6	13.3		13.1	13.2		8.1	8.3	6.0		15.0	11.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.0		0.0	0.0		0.2	0.4	0.0		4.6	0.1
Delay (s)	20.0	13.3		13.1	13.2		8.3	8.7	6.0		19.6	11.4
Level of Service	C	B		B	B		A	A	A		B	B
Approach Delay (s/veh)		19.0			13.2			8.7			17.0	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

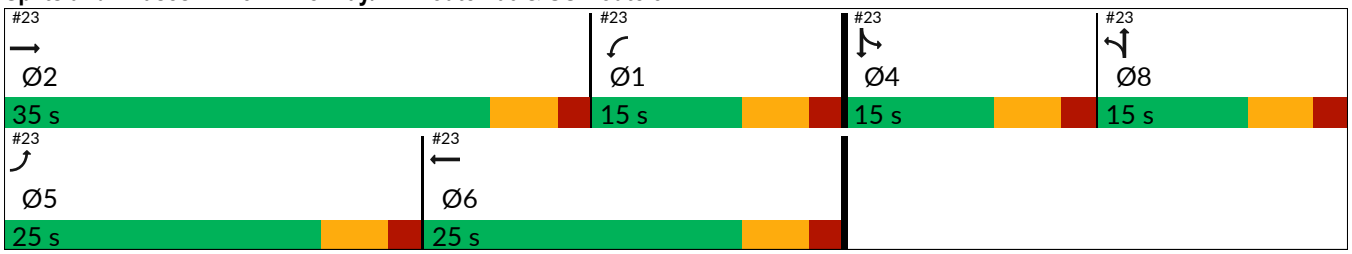


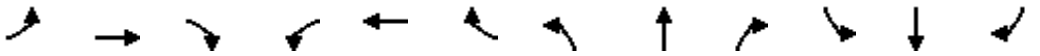
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	443	0	0	416	303	1	3	0	361	1	270
Future Volume (vph)	172	443	0	0	416	303	1	3	0	361	1	270
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt						0.850						0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Satd. Flow (RTOR)						368						368
Adj. Flow (vph)	207	534	0	0	447	326	4	12	0	463	1	346
Lane Group Flow (vph)	207	534	0	0	447	326	4	12	0	463	1	346
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		15.0	15.0	
Total Split (%)	31.3%	43.8%		18.8%	31.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.46	0.25			0.47	0.19	0.01	0.04		0.67	0.00	0.22
Control Delay (s/veh)	22.6	5.6			19.8	0.2	27.0	26.7		30.4	25.0	0.3
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	22.6	5.6			19.8	0.2	27.0	26.7		30.4	25.0	0.3
Queue Length 50th (ft)	51	30			57	0	0	3		64	0	0
Queue Length 95th (ft)	133	78			141	0	1	6		#167	4	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350					200	250			250		200
Base Capacity (vph)	675	2244			1350	1759	693	376		686	372	1599
Starvation Cap Reductn	0	0			0	0	0	0		0	0	0
Spillback Cap Reductn	0	0			0	0	0	0		0	0	0
Storage Cap Reductn	0	0			0	0	0	0		0	0	0
Reduced v/c Ratio	0.31	0.24			0.33	0.19	0.01	0.03		0.67	0.00	0.22

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 56
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

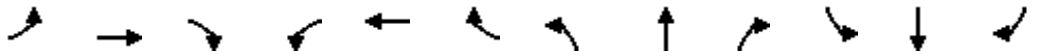




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	443	0	0	416	303	1	3	0	361	1	270
Future Volume (vph)	172	443	0	0	416	303	1	3	0	361	1	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.25	0.25	0.25	0.78	0.78	0.78
Adj. Flow (vph)	207	534	0	0	447	326	4	12	0	463	1	346
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	207	534	0	0	447	326	4	12	0	463	1	346
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.4	32.2			13.8	60.6	1.0	1.0		9.4	9.4	60.6
Effective Green, g (s)	14.4	34.2			15.8	60.6	3.0	3.0		11.4	11.4	60.6
Actuated g/C Ratio	0.24	0.56			0.26	1.00	0.05	0.05		0.19	0.19	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	410	1949			900	1759	167	90		630	342	1599
v/s Ratio Prot	c0.12	0.15			c0.13		0.00	0.01		c0.14	0.00	
v/s Ratio Perm						0.19						c0.22
v/c Ratio	0.50	0.27			0.50	0.19	0.02	0.13		0.73	0.00	0.22
Uniform Delay, d1	20.0	6.8			19.0	0.0	27.4	27.6		23.2	20.0	0.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1			0.4	0.2	0.1	0.7		4.4	0.0	0.3
Delay (s)	21.0	6.9			19.5	0.2	27.5	28.2		27.6	20.0	0.3
Level of Service	C	A			B	A	C	C		C	B	A
Approach Delay (s/veh)		10.8			11.3			28.0			15.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	765	3	1	783	70	4	0	1	71	0	440
Future Volume (vph)	352	765	3	1	783	70	4	0	1	71	0	440
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1787	3333	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.703			0.752	
Satd. Flow (perm)	1787	3333	0	1668	3296	0	0	1336	1830	0	1354	1531
Satd. Flow (RTOR)		1			8				150			512
Adj. Flow (vph)	414	900	4	1	851	76	8	0	2	83	0	512
Lane Group Flow (vph)	414	904	0	1	927	0	0	8	2	0	83	512
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.71	0.36		0.01	0.70			0.05	0.01		0.46	0.79
Control Delay (s/veh)	33.7	4.5		42.0	25.5			37.8	0.0		47.2	14.1
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	33.7	4.5		42.0	25.5			37.8	0.0		47.2	14.1
Queue Length 50th (ft)	207	64		1	222			4	0		45	0
Queue Length 95th (ft)	297	136		6	317			10	0		94	81
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	719	2703		138	1526			189	388		192	657
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	0.58	0.33		0.01	0.61			0.04	0.01		0.43	0.78

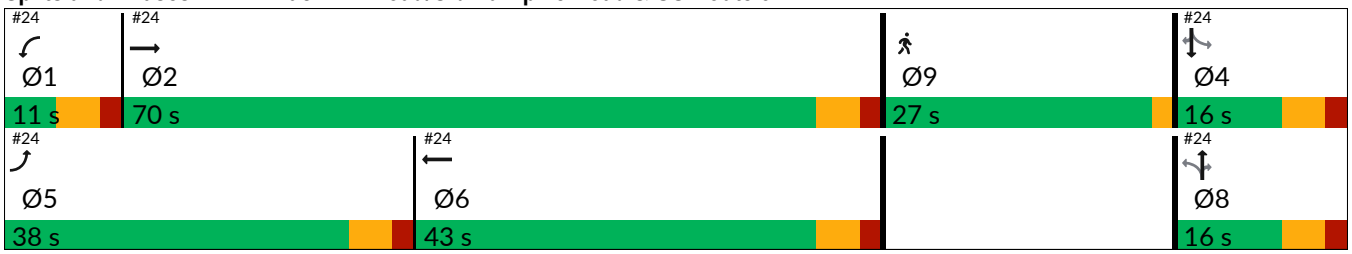
Intersection Summary
Cycle Length: 124

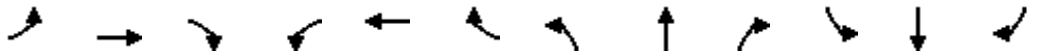
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 86.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

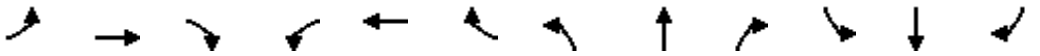




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	765	3	1	783	70	4	0	1	71	0	440
Future Volume (vph)	352	765	3	1	783	70	4	0	1	71	0	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3334		1668	3295			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.75	1.00
Satd. Flow (perm)	1787	3334		1668	3295			1336	1830		1355	1531
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.92	0.92	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	414	900	4	1	851	76	8	0	2	83	0	512
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	2	0	0	448
Lane Group Flow (vph)	414	904	0	1	922	0	0	8	0	0	83	64
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	26.2	62.6		0.9	37.3			9.4	9.4		9.4	9.4
Effective Green, g (s)	28.2	64.6		2.9	39.3			11.4	11.4		11.4	11.4
Actuated g/C Ratio	0.31	0.71		0.03	0.43			0.13	0.13		0.13	0.13
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	554	2369		53	1424			167	229		169	192
v/s Ratio Prot	c0.23	0.27		0.00	c0.28							
v/s Ratio Perm								0.01	0.00		c0.06	0.04
v/c Ratio	0.75	0.38		0.02	0.65			0.05	0.00		0.49	0.33
Uniform Delay, d1	28.2	5.2		42.6	20.3			35.0	34.8		37.0	36.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.5	0.1		0.1	1.0			0.1	0.0		2.2	1.0
Delay (s)	33.6	5.3		42.8	21.4			35.1	34.8		39.3	37.3
Level of Service	C	A		D	C			D	C		D	D
Approach Delay (s/veh)		14.2			21.4			35.0			37.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1087	3	4	1202	57	1	0	1	38	0	21
Future Volume (vph)	11	1087	3	4	1202	57	1	0	1	38	0	21
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4964	0	1668	3431	0	1805	1615	0	1829	1583	0
Flt Permitted	0.950			0.950			0.738			0.755		
Satd. Flow (perm)	1728	4964	0	1668	3431	0	1402	1615	0	1453	1583	0
Satd. Flow (RTOR)					6			768			179	
Adj. Flow (vph)	12	1182	3	4	1321	63	4	0	4	54	0	30
Lane Group Flow (vph)	12	1185	0	4	1384	0	4	4	0	54	30	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	33.0		37.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.4%	25.8%		28.9%			25.8%	25.8%		25.8%	25.8%	
Maximum Green (s)	6.0	27.0		31.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.11	0.89		0.01	0.58		0.02	0.00		0.20	0.07	
Control Delay (s/veh)	59.2	54.6		38.5	1.9		39.0	0.0		43.9	0.3	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.2	54.6		38.5	2.1		39.0	0.0		43.9	0.3	
Queue Length 50th (ft)	10	361		2	20		3	0		39	0	
Queue Length 95th (ft)	31	#492		m3	44		3	0		58	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	108	1337		437	2402		317	959		329	497	
Starvation Cap Reductn	0	0		0	311		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		6	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.89		0.01	0.66		0.01	0.00		0.17	0.06	

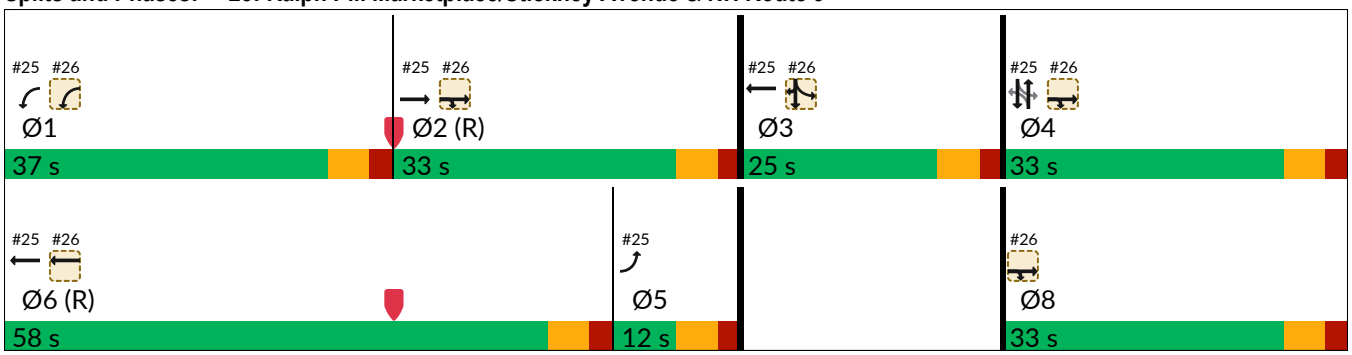
Intersection Summary
Cycle Length: 128

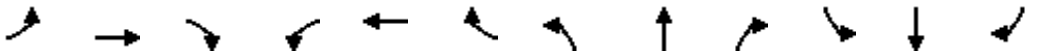
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	25.0	58.0	33.0
Total Split (%)	20%	45%	26%
Maximum Green (s)	19.0	52.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
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.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

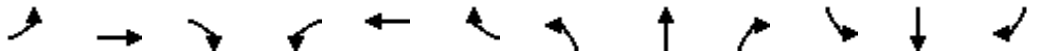




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1087	3	4	1202	57	1	0	1	38	0	21
Future Volume (vph)	11	1087	3	4	1202	57	1	0	1	38	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4963		1668	3432		1805	1615		1829	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.76	1.00	
Satd. Flow (perm)	1728	4963		1668	3432		1401	1615		1454	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.70	0.70	0.70
Adj. Flow (vph)	12	1182	3	4	1321	63	4	0	4	54	0	30
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	24	0
Lane Group Flow (vph)	12	1185	0	4	1382	0	4	1	0	54	6	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	32.5		30.5	79.6		22.0	22.0		22.0	22.0	
Effective Green, g (s)	4.4	34.5		32.5	83.6		24.0	24.0		24.0	24.0	
Actuated g/C Ratio	0.03	0.27		0.25	0.65		0.19	0.19		0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	59	1337		423	2241		262	302		272	296	
v/s Ratio Prot	0.01	c0.24		0.00	c0.40			0.00			0.00	
v/s Ratio Perm							0.00			c0.04		
v/c Ratio	0.20	0.89		0.01	0.62		0.02	0.00		0.20	0.02	
Uniform Delay, d1	60.1	44.9		35.7	12.9		42.4	42.3		43.9	42.4	
Progression Factor	1.00	1.00		1.09	0.14		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	8.9		0.0	0.4		0.0	0.0		0.4	0.0	
Delay (s)	61.8	53.8		39.1	2.2		42.4	42.3		44.2	42.4	
Level of Service	E	D		D	A		D	D		D	D	
Approach Delay (s/veh)		53.9			2.3			42.3			43.6	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	995	132	656	1079	0	0	0	0	223	0	185
Future Volume (vph)	0	995	132	656	1079	0	0	0	0	223	0	185
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			143									179
Adj. Flow (vph)	0	1082	143	705	1160	0	0	0	0	256	0	213
Lane Group Flow (vph)	0	1082	143	705	1160	0	0	0	0	0	256	213
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				37.0	58.0					25.0	25.0	25.0
Total Split (%)				28.9%	45.3%					19.5%	19.5%	19.5%
Maximum Green (s)				31.0	52.0					19.0	19.0	19.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.48	0.16	0.86	0.67						0.87	0.52
Control Delay (s/veh)		3.7	0.8	64.1	14.9						81.0	15.6
Queue Delay		0.4	0.6	50.1	1.1						3.0	0.0
Total Delay (s/veh)		4.1	1.5	114.2	16.0						84.0	15.6
Queue Length 50th (ft)		29	0	280	214						211	25
Queue Length 95th (ft)		m60	m0	#343	310						#345	93
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2462	971	847	1724						293	411
Starvation Cap Reductn		797	569	232	316						0	0
Spillback Cap Reductn		414	0	0	0						10	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.65	0.36	1.15	0.82						0.90	0.52

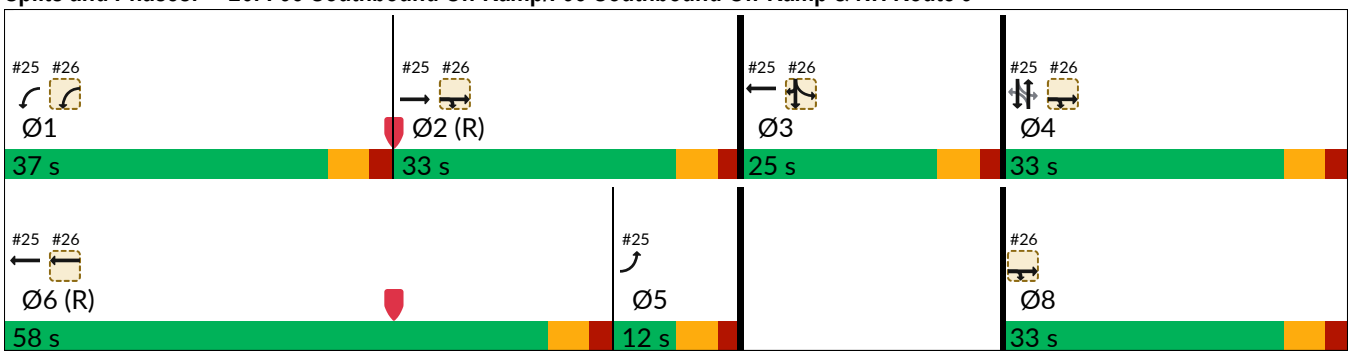
Intersection Summary
Cycle Length: 128

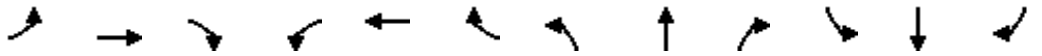
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	33.0	33.0	12.0	33.0
Total Split (%)	26%	26%	9%	26%
Maximum Green (s)	27.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
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.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

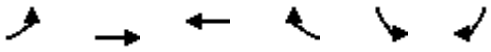




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	995	132	656	1079	0	0	0	0	223	0	185
Future Volume (vph)	0	995	132	656	1079	0	0	0	0	223	0	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4964	1812	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4964	1812	3236	3336						1787	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.90	0.90	0.90	0.87	0.87	0.87
Adj. Flow (vph)	0	1082	143	705	1160	0	0	0	0	256	0	213
RTOR Reduction (vph)	0	0	78	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	1082	65	705	1160	0	0	0	0	0	256	63
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		54.5	54.5	30.5	60.6						19.0	19.0
Effective Green, g (s)		58.5	58.5	32.5	62.6						21.0	21.0
Actuated g/C Ratio		0.46	0.46	0.25	0.49						0.16	0.16
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2268	828	821	1631						293	262
v/s Ratio Prot		c0.22	0.04	c0.22	c0.35						c0.14	0.04
v/s Ratio Perm												
v/c Ratio		0.48	0.08	0.86	0.71						0.87	0.24
Uniform Delay, d1		24.1	19.6	45.6	25.6						52.2	46.6
Progression Factor		0.26	0.40	1.18	0.51						1.00	1.00
Incremental Delay, d2		0.1	0.0	8.0	2.4						23.7	0.5
Delay (s)		6.4	7.9	61.9	15.5						75.9	47.1
Level of Service		A	A	E	B						E	D
Approach Delay (s/veh)		6.6			33.1			0.0			62.8	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

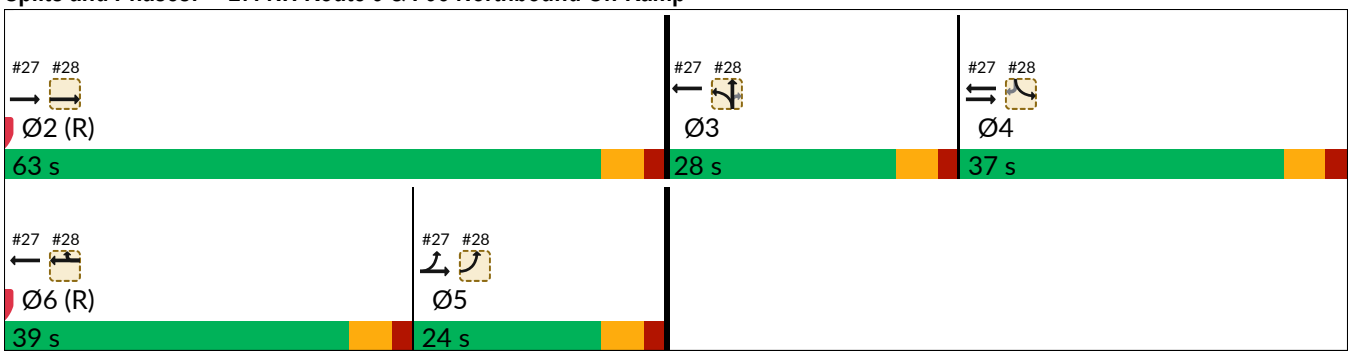


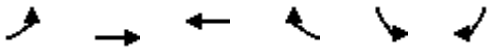
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	114	1104	1735	237	0	0				
Future Volume (vph)	114	1104	1735	237	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				115						
Adj. Flow (vph)	121	1174	1826	249	0	0				
Lane Group Flow (vph)	121	1174	1826	249	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	24.0						63.0	28.0	37.0	39.0
Total Split (%)	18.8%						49%	22%	29%	30%
Maximum Green (s)	18.0						57.0	22.0	31.0	33.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	Min	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.47	0.47	0.49	0.15						
Control Delay (s/veh)	38.7	11.5	3.3	0.0						
Queue Delay	3.6	2.8	9.6	0.0						
Total Delay (s/veh)	42.4	14.3	12.9	0.0						
Queue Length 50th (ft)	59	175	78	0						
Queue Length 95th (ft)	m110	277	m66	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	260	2502	3744	1652						
Starvation Cap Reductn	76	1176	1903	0						
Spillback Cap Reductn	0	122	999	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.66	0.89	0.99	0.15						

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	114	1104	1735	237	0	0
Future Volume (vph)	114	1104	1735	237	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.94	0.94	0.95	0.95	0.90	0.90
Adj. Flow (vph)	121	1174	1826	249	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	121	1174	1826	249	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	18.0	94.0	98.0	128.0		
Effective Green, g (s)	20.0	96.0	100.0	128.0		
Actuated g/C Ratio	0.16	0.75	0.78	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	260	2502	3744	1652		
v/s Ratio Prot	0.07	c0.35	c0.38			
v/s Ratio Perm				0.15		
v/c Ratio	0.47	0.47	0.49	0.15		
Uniform Delay, d1	49.1	6.2	4.9	0.0		
Progression Factor	0.67	1.74	0.65	1.00		
Incremental Delay, d2	1.1	0.1	0.0	0.0		
Delay (s)	34.3	10.9	3.2	0.0		
Level of Service	C	B	A	A		
Approach Delay (s/veh)		13.1	2.8		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

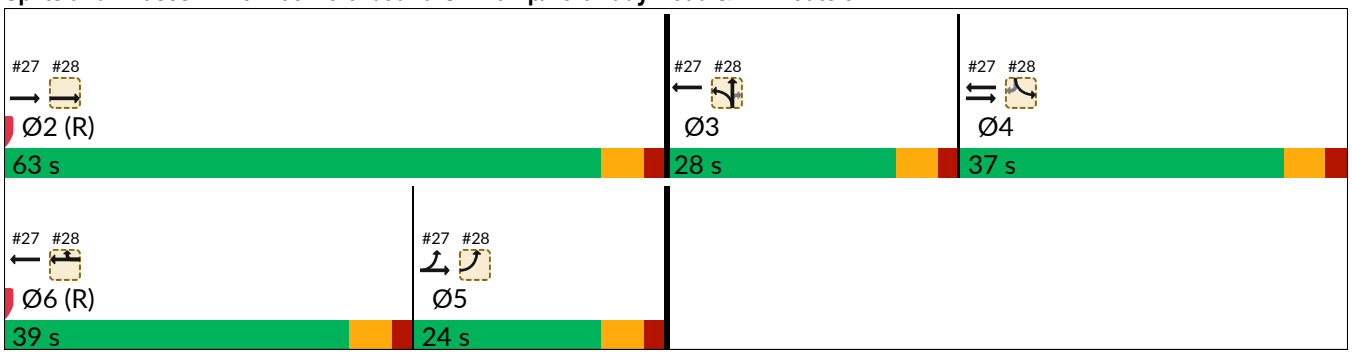
c Critical Lane Group

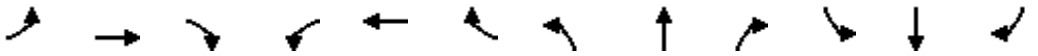
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	667	0	0	1082	519	136	339	582	461	0	754
Future Volume (vph)	437	667	0	0	1082	519	136	339	582	461	0	754
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.931	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1787	3188	1504	3502	0	1669
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1787	3188	1504	3502	0	1669
Satd. Flow (RTOR)						494		128	128			382
Adj. Flow (vph)	451	688	0	0	1163	558	156	390	669	490	0	802
Lane Group Flow (vph)	451	688	0	0	1163	558	156	725	334	490	0	802
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	24.0	63.0			39.0	39.0	28.0	28.0	28.0	37.0		37.0
Total Split (%)	18.8%	49.2%			30.5%	30.5%	21.9%	21.9%	21.9%	28.9%		28.9%
Maximum Green (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		0.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lead/Lag	Lag				Lead	Lead	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	Min	Min	Min	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.89	0.43			1.23	0.69	0.47	1.03	0.87	0.54		1.16
Control Delay (s/veh)	56.7	17.0			154.1	18.9	51.5	84.7	53.3	43.7		109.7
Queue Delay	48.8	0.8			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	105.6	17.8			154.1	18.9	51.5	84.7	53.3	43.7		109.7
Queue Length 50th (ft)	146	142			~619	127	117	~306	192	181		~530
Queue Length 95th (ft)	#275	224			#764	m202	182	#412	#349	237		#778
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	505	1592			944	810	335	701	386	902		693
Starvation Cap Reductn	95	571			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.10	0.67			1.23	0.69	0.47	1.03	0.87	0.54		1.16

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

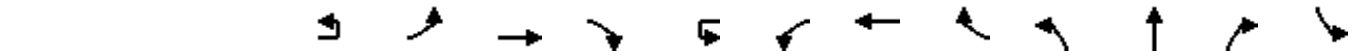




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	667	0	0	1082	519	136	339	582	461	0	754
Future Volume (vph)	437	667	0	0	1082	519	136	339	582	461	0	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1787	3186	1504	3502		1669
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1787	3186	1504	3502		1669
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	451	688	0	0	1163	558	156	390	669	490	0	802
RTOR Reduction (vph)	0	0	0	0	0	359	0	104	104	0	0	289
Lane Group Flow (vph)	451	688	0	0	1163	199	156	621	230	490	0	513
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
Effective Green, g (s)	20.0	59.0			35.0	35.0	24.0	24.0	24.0	33.0		31.0
Actuated g/C Ratio	0.16	0.46			0.27	0.27	0.19	0.19	0.19	0.26		0.24
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	505	1592			944	451	335	597	282	902		404
v/s Ratio Prot	c0.14	0.20			c0.34	0.12	0.09	c0.19		0.14		
v/s Ratio Perm									0.15			c0.31
v/c Ratio	0.89	0.43			1.23	0.44	0.47	1.04	0.82	0.54		1.27
Uniform Delay, d1	53.0	23.2			46.5	38.4	46.3	52.0	49.9	41.0		48.5
Progression Factor	0.69	0.69			1.11	2.62	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	16.4	0.8			110.8	2.1	1.0	47.7	16.4	0.7		139.2
Delay (s)	53.1	16.8			162.6	102.8	47.3	99.7	66.3	41.7		187.7
Level of Service	D	B			F	F	D	F	E	D		F
Approach Delay (s/veh)		31.2			143.2			83.8			132.3	
Approach LOS		C			F			F			F	

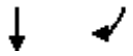
Intersection Summary			
HCM 2000 Control Delay (s/veh)	103.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1201	428	1	27	1263	3	287	0	98	15
Future Volume (vph)	1	81	1201	428	1	27	1263	3	287	0	98	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950				0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	3455	0	0	1805	1669	0
Flt Permitted		0.950				0.950				0.673		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	3455	0	0	1279	1669	0
Satd. Flow (RTOR)				226							114	
Adj. Flow (vph)	1	84	1238	441	1	30	1388	3	334	0	114	22
Lane Group Flow (vph)	0	85	1238	441	0	31	1391	0	0	334	114	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	12.0	21.0		33.0	33.0	33.0	33.0
Total Split (s)	14.0	14.0	76.0	76.0	14.0	14.0	76.0		38.0	38.0	38.0	38.0
Total Split (%)	10.9%	10.9%	59.4%	59.4%	10.9%	10.9%	59.4%		29.7%	29.7%	29.7%	29.7%
Maximum Green (s)	8.0	8.0	70.0	70.0	8.0	8.0	70.0		32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0			8.0		20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0			0		0	0	0	0
v/c Ratio		0.62	0.63	0.46		0.25	0.77			0.87	0.20	
Control Delay (s/veh)		64.4	26.1	12.9		52.9	34.7			66.0	7.2	
Queue Delay		0.0	5.0	0.0		0.0	0.7			0.0	2.9	
Total Delay (s/veh)		64.4	31.2	12.9		52.9	35.4			66.0	10.0	
Queue Length 50th (ft)		64	503	169		25	386			262	0	
Queue Length 95th (ft)		m105	m532	m210		m49	690			#438	41	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150						
Base Capacity (vph)		140	2006	961		135	1943			385	582	
Starvation Cap Reductn		0	0	0		0	248			0	0	
Spillback Cap Reductn		0	691	0		0	0			0	374	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.61	0.94	0.46		0.23	0.82			0.87	0.55	

Intersection Summary
Cycle Length: 128

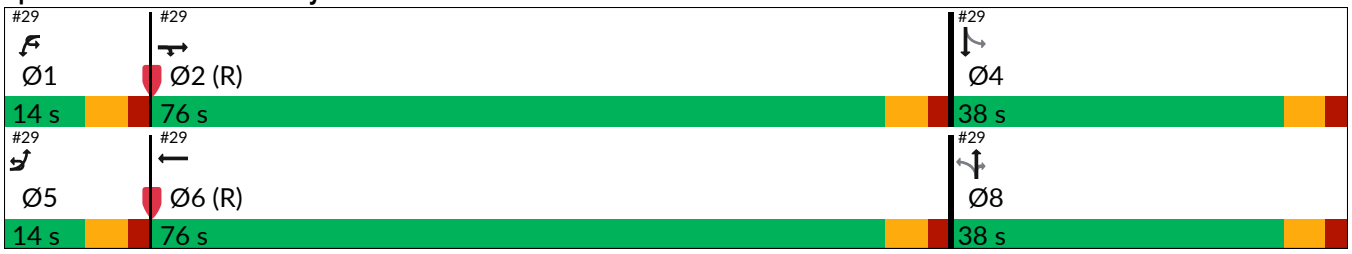


Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Lane Util. Factor	1.00	1.00
Frt	0.897	
Flt Protected	0.989	
Satd. Flow (prot)	1729	0
Flt Permitted	0.823	
Satd. Flow (perm)	1439	0
Satd. Flow (RTOR)	73	
Adj. Flow (vph)	1	73
Lane Group Flow (vph)	96	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	33.0	
Total Split (s)	38.0	
Total Split (%)	29.7%	
Maximum Green (s)	32.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	4.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	20.0	
Pedestrian Calls (#/hr)	0	
v/c Ratio	0.20	
Control Delay (s/veh)	12.9	
Queue Delay	4.0	
Total Delay (s/veh)	16.9	
Queue Length 50th (ft)	14	
Queue Length 95th (ft)	31	
Internal Link Dist (ft)	277	
Turn Bay Length (ft)		
Base Capacity (vph)	484	
Starvation Cap Reductn	0	
Spillback Cap Reductn	317	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.57	

Intersection Summary

Actuated Cycle Length: 128
Offset: 105 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
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.

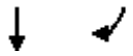
Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1201	428	1	27	1263	3	287	0	98	15
Future Volume (vph)	1	81	1201	428	1	27	1263	3	287	0	98	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95			1.00	1.00	
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	3454			1805	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.67	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	3454			1278	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1238	441	1	30	1388	3	334	0	114	22
RTOR Reduction (vph)	0	0	0	101	0	0	0	0	0	0	80	0
Lane Group Flow (vph)	0	85	1238	340	0	31	1391	0	0	334	34	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Actuated Green, G (s)		8.2	68.7	68.7		4.7	65.2			36.6	36.6	
Effective Green, g (s)		10.2	70.7	70.7		6.7	67.2			38.6	38.6	
Actuated g/C Ratio		0.08	0.55	0.55		0.05	0.53			0.30	0.30	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0			6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)		137	1908	824		90	1813			385	503	
v/s Ratio Prot		c0.05	c0.36	0.23		0.02	c0.40					
v/s Ratio Perm										c0.26	0.02	
v/c Ratio		0.62	0.65	0.41		0.34	0.77			0.87	0.07	
Uniform Delay, d1		57.0	20.0	16.6		58.5	24.2			42.3	31.9	
Progression Factor		0.86	1.31	1.52		0.87	1.32			1.00	1.00	
Incremental Delay, d2		6.5	1.3	1.2		2.0	2.8			18.2	0.1	
Delay (s)		55.4	27.4	26.4		52.8	34.7			60.5	31.9	
Level of Service		E	C	C		D	C			E	C	
Approach Delay (s/veh)			28.5				35.1			53.2		
Approach LOS			C				D			D		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.82	
Satd. Flow (perm)	1440	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	51	0
Lane Group Flow (vph)	45	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	36.6	
Effective Green, g (s)	38.6	
Actuated g/C Ratio	0.30	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	434	
v/s Ratio Prot		
v/s Ratio Perm	0.03	
v/c Ratio	0.10	
Uniform Delay, d1	32.2	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	32.3	
Level of Service	C	
Approach Delay (s/veh)	32.3	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1225	83	1	240	1124	27	157	5	207	14	0
Future Volume (vph)	6	1225	83	1	240	1124	27	157	5	207	14	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.991				0.996			0.854			0.850
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3424	0	0	1728	3441	0	1787	1607	0	1793	1605
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3424	0	0	1728	3441	0	1787	1607	0	1793	1605
Satd. Flow (RTOR)		7				2			235			418
Adj. Flow (vph)	6	1276	86	1	255	1196	29	178	6	235	19	0
Lane Group Flow (vph)	6	1362	0	0	256	1225	0	178	241	0	19	17
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	12.0	57.0		14.0	14.0	59.0		14.0	16.0		12.0	14.0
Total Split (%)	9.4%	44.5%		10.9%	10.9%	46.1%		10.9%	12.5%		9.4%	10.9%
Maximum Green (s)	6.0	51.0		8.0	8.0	53.0		8.0	10.0		6.0	8.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.05	0.95			0.61	0.53		0.48	0.47		0.15	0.03
Control Delay (s/veh)	47.0	64.5			51.1	13.1		50.5	9.5		58.0	0.2
Queue Delay	0.0	43.8			0.0	0.0		3.9	0.0		0.0	0.0
Total Delay (s/veh)	47.0	108.4			51.1	13.1		54.5	9.5		58.0	0.2
Queue Length 50th (ft)	3	634			182	185		135	4		16	0
Queue Length 95th (ft)	m8	#755			#323	446		204	72		35	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	112	1436			421	2316		368	508		127	510
Starvation Cap Reductn	0	212			0	0		0	0		0	0
Spillback Cap Reductn	0	0			0	107		120	0		0	52
Storage Cap Reductn	0	0			0	0		0	0		0	0
Reduced v/c Ratio	0.05	1.11			0.61	0.55		0.72	0.47		0.15	0.04

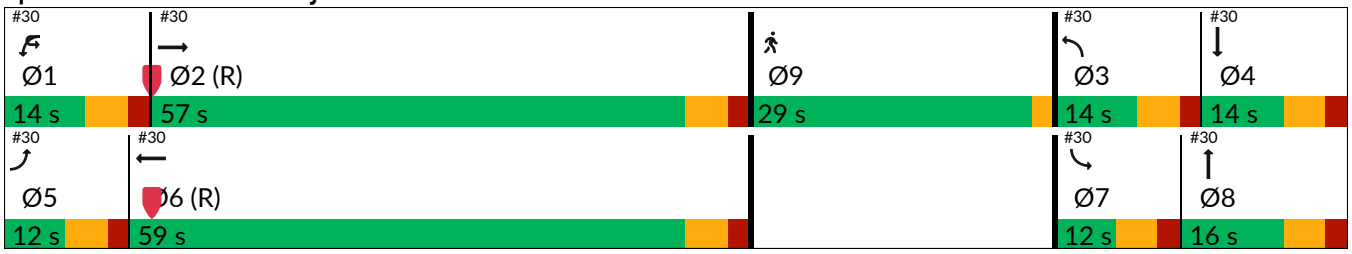
Intersection Summary
Cycle Length: 128

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		23%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 128
Offset: 48 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
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.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



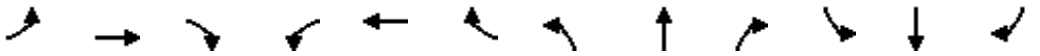
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1225	83	1	240	1124	27	157	5	207	14	0
Future Volume (vph)	6	1225	83	1	240	1124	27	157	5	207	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1728	3422			1728	3443		1787	1606		1793	1605
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1728	3422			1728	3443		1787	1606		1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1276	86	1	255	1196	29	178	6	235	19	0
RTOR Reduction (vph)	0	4	0	0	0	1	0	0	188	0	0	16
Lane Group Flow (vph)	6	1358	0	0	256	1224	0	178	53	0	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.4	48.0			29.2	75.8		24.4	23.5		3.3	2.4
Effective Green, g (s)	3.4	50.0			31.2	77.8		26.4	25.5		5.3	4.4
Actuated g/C Ratio	0.03	0.39			0.24	0.61		0.21	0.20		0.04	0.03
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45	1336			421	2092		368	319		74	55
v/s Ratio Prot	0.00	c0.40			c0.15	0.36		c0.10	c0.03		0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.13	1.02			0.61	0.59		0.48	0.17		0.26	0.01
Uniform Delay, d1	60.9	39.0			43.0	15.3		44.8	42.4		59.4	59.7
Progression Factor	0.82	1.48			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	26.5			2.5	1.2		1.0	0.2		1.8	0.1
Delay (s)	51.2	84.1			45.5	16.5		45.8	42.7		61.3	59.8
Level of Service	D	F			D	B		D	D		E	E
Approach Delay (s/veh)		83.9				21.5			44.0			60.6
Approach LOS		F				C			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

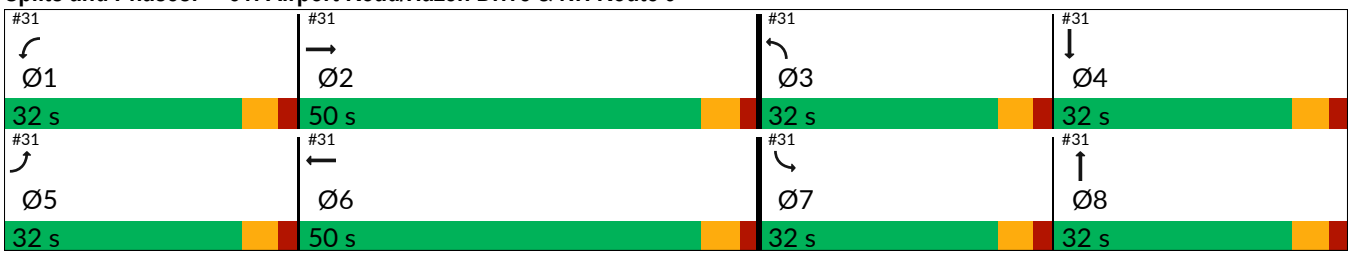


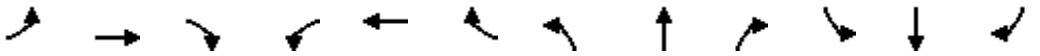
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1090	216	154	1127	55	192	61	225	19	45	70
Future Volume (vph)	51	1090	216	154	1127	55	192	61	225	19	45	70
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			176			157			256			157
Adj. Flow (vph)	54	1147	227	167	1225	60	218	69	256	29	69	108
Lane Group Flow (vph)	54	1147	227	167	1225	60	218	69	256	29	69	108
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.31	0.78	0.14	0.58	0.69	0.04	0.67	0.16	0.16	0.19	0.35	0.07
Control Delay (s/veh)	55.6	35.5	0.2	53.6	27.1	0.0	54.3	37.9	0.2	55.5	55.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.6	35.5	0.2	53.6	27.1	0.0	54.3	37.9	0.2	55.5	55.5	0.1
Queue Length 50th (ft)	38	390	0	115	381	0	150	42	0	20	48	0
Queue Length 95th (ft)	86	#648	0	204	578	0	252	86	0	40	73	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	461	1465	1599	461	1780	1652	446	497	1599	450	474	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.78	0.14	0.36	0.69	0.04	0.49	0.14	0.16	0.06	0.15	0.07

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 111.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1090	216	154	1127	55	192	61	225	19	45	70
Future Volume (vph)	51	1090	216	154	1127	55	192	61	225	19	45	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.65	0.65	0.65
Adj. Flow (vph)	54	1147	227	167	1225	60	218	69	256	29	69	108
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	1147	227	167	1225	60	218	69	256	29	69	108
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.4	46.7	115.1	16.0	55.3	115.1	19.0	23.7	115.1	4.7	9.4	115.1
Effective Green, g (s)	9.4	48.7	115.1	18.0	57.3	115.1	21.0	25.7	115.1	6.7	11.4	115.1
Actuated g/C Ratio	0.08	0.42	1.00	0.16	0.50	1.00	0.18	0.22	1.00	0.06	0.10	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	145	1461	1599	279	1719	1652	315	405	1599	101	181	1561
v/s Ratio Prot	0.03	c0.33		c0.09	c0.35		c0.13	0.04		0.02	c0.04	
v/s Ratio Perm			0.14			0.04			0.16			0.07
v/c Ratio	0.37	0.79	0.14	0.60	0.71	0.04	0.69	0.17	0.16	0.29	0.38	0.07
Uniform Delay, d1	50.1	28.7	0.0	45.2	22.5	0.0	44.0	36.1	0.0	51.9	48.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	2.9	0.2	3.4	1.4	0.0	6.4	0.2	0.2	1.6	1.3	0.1
Delay (s)	51.7	31.5	0.2	48.6	23.9	0.0	50.5	36.3	0.2	53.5	49.9	0.1
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s/veh)		27.3			25.8			25.0			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	61	944	35	33	1063	231	112	114	52	298	70
Future Volume (vph)	1	61	944	35	33	1063	231	112	114	52	298	70
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.995			0.973			0.953			0.944
Flt Protected		0.950			0.950			0.950			0.950	0.985
Satd. Flow (prot)	0	1787	3319	0	1668	3362	0	1685	1690	0	1600	1678
Flt Permitted		0.950			0.950			0.950			0.950	0.985
Satd. Flow (perm)	0	1787	3319	0	1668	3362	0	1685	1690	0	1600	1678
Satd. Flow (RTOR)			2			17			14			18
Adj. Flow (vph)	1	65	1004	37	35	1143	248	162	165	75	320	75
Lane Group Flow (vph)	0	66	1041	0	35	1391	0	162	240	0	246	237
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.34	0.83		0.22	1.21		0.48	0.68		0.70	0.62
Control Delay (s/veh)		48.2	37.4		47.8	134.7		42.2	47.0		50.6	42.9
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		48.2	37.4		47.8	134.7		42.2	47.0		50.6	42.9
Queue Length 50th (ft)		42	354		22	~627		96	141		164	143
Queue Length 95th (ft)		86	#505		55	#801		123	167		#295	241
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		302	1251		282	1149		369	381		350	381
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		0.22	0.83		0.12	1.21		0.44	0.63		0.70	0.62

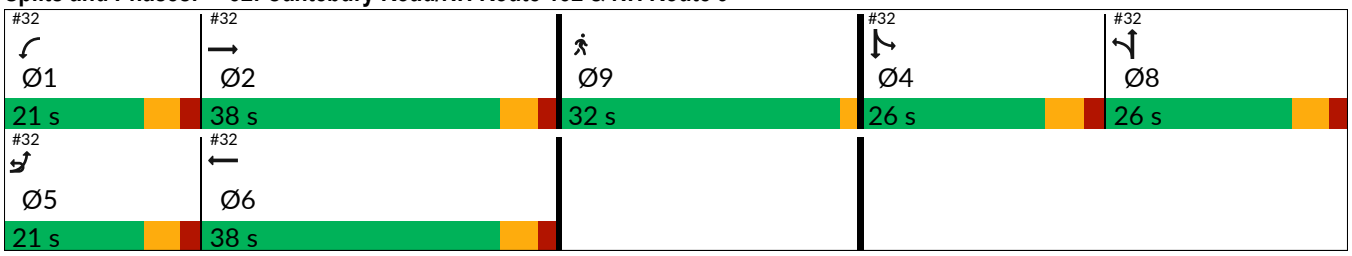
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	88	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 101.3
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



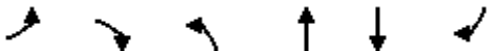
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	61	944	35	33	1063	231	112	114	52	298	70
Future Volume (vph)	1	61	944	35	33	1063	231	112	114	52	298	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.94
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (prot)		1787	3318		1668	3363		1685	1690		1600	1678
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (perm)		1787	3318		1668	3363		1685	1690		1600	1678
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.69	0.69	0.69	0.93	0.93
Adj. Flow (vph)	1	65	1004	37	35	1143	248	162	165	75	320	75
RTOR Reduction (vph)	0	0	1	0	0	11	0	0	11	0	0	14
Lane Group Flow (vph)	0	66	1040	0	35	1380	0	162	229	0	246	223
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		7.7	36.1		5.0	33.4		18.4	18.4		20.2	20.2
Effective Green, g (s)		9.7	38.1		7.0	35.4		20.4	20.4		22.2	22.2
Actuated g/C Ratio		0.09	0.37		0.07	0.34		0.20	0.20		0.21	0.21
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		167	1219		112	1148		331	332		342	359
v/s Ratio Prot		c0.04	c0.31		0.02	c0.41		0.10	c0.14		c0.15	0.13
v/s Ratio Perm												
v/c Ratio		0.40	0.85		0.31	1.20		0.49	0.69		0.72	0.62
Uniform Delay, d1		44.2	30.2		46.1	34.2		37.0	38.7		37.9	36.9
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.5	6.0		1.6	99.4		1.1	5.9		7.1	3.3
Delay (s)		45.8	36.2		47.7	133.5		38.2	44.6		44.9	40.3
Level of Service		D	D		D	F		D	D		D	D
Approach Delay (s/veh)			36.8			131.4			42.0			42.6
Approach LOS			D			F			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	77.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	82
Future Volume (vph)	82
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	88
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

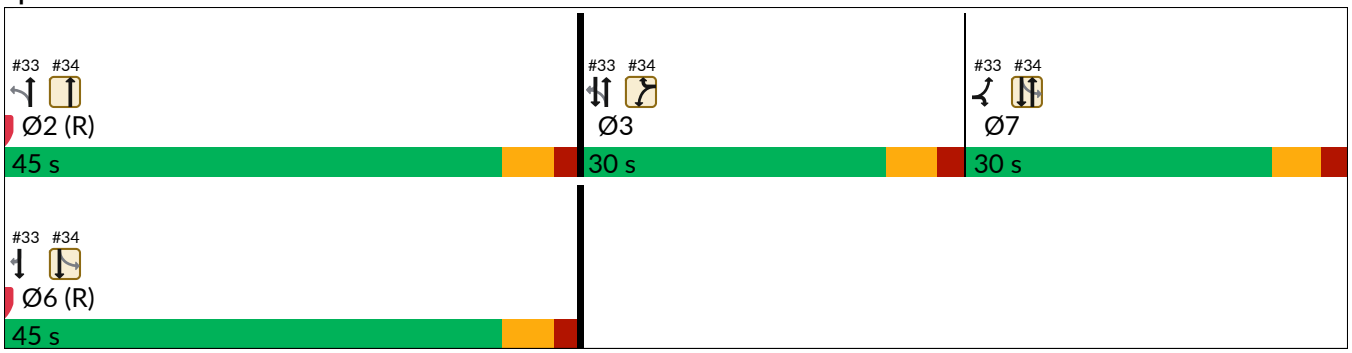


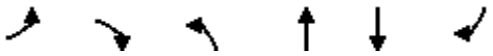
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	140	21	12	417	585	142			
Future Volume (vph)	140	21	12	417	585	142			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1805	1615	0	1817	1900	1561			
Flt Permitted	0.950			0.979					
Satd. Flow (perm)	1805	1615	0	1780	1900	1561			
Satd. Flow (RTOR)		28				146			
Adj. Flow (vph)	189	28	16	542	603	146			
Lane Group Flow (vph)	189	28	0	558	603	146			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.46	0.07		0.45	0.46	0.13			
Control Delay (s/veh)	38.2	11.5		9.0	10.2	3.3			
Queue Delay	0.0	0.0		0.0	0.5	0.0			
Total Delay (s/veh)	38.2	11.5		9.0	10.6	3.3			
Queue Length 50th (ft)	107	0		160	203	14			
Queue Length 95th (ft)	139	16		180	300	37			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	446	420		1248	1333	1138			
Starvation Cap Reductn	0	0		0	335	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.42	0.07		0.45	0.60	0.13			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	140	21	12	417	585	142
Future Volume (vph)	140	21	12	417	585	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1805	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	1805	1615		1781	1900	1561
Peak-hour factor, PHF	0.74	0.74	0.77	0.77	0.97	0.97
Adj. Flow (vph)	189	28	16	542	603	146
RTOR Reduction (vph)	0	22	0	0	0	45
Lane Group Flow (vph)	189	6	0	558	603	101
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	22.1	22.1		70.9	70.9	70.9
Effective Green, g (s)	24.1	24.1		72.9	72.9	72.9
Actuated g/C Ratio	0.23	0.23		0.69	0.69	0.69
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	414	370		1236	1319	1083
v/s Ratio Prot	c0.10	0.00			c0.32	
v/s Ratio Perm				0.31		0.06
v/c Ratio	0.46	0.02		0.45	0.46	0.09
Uniform Delay, d1	34.8	31.3		7.1	7.2	5.2
Progression Factor	1.00	1.00		1.00	1.17	2.99
Incremental Delay, d2	0.8	0.0		0.3	0.2	0.0
Delay (s)	35.6	31.3		7.4	8.6	15.7
Level of Service	D	C		A	A	B
Approach Delay (s/veh)	35.1			7.4	10.0	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

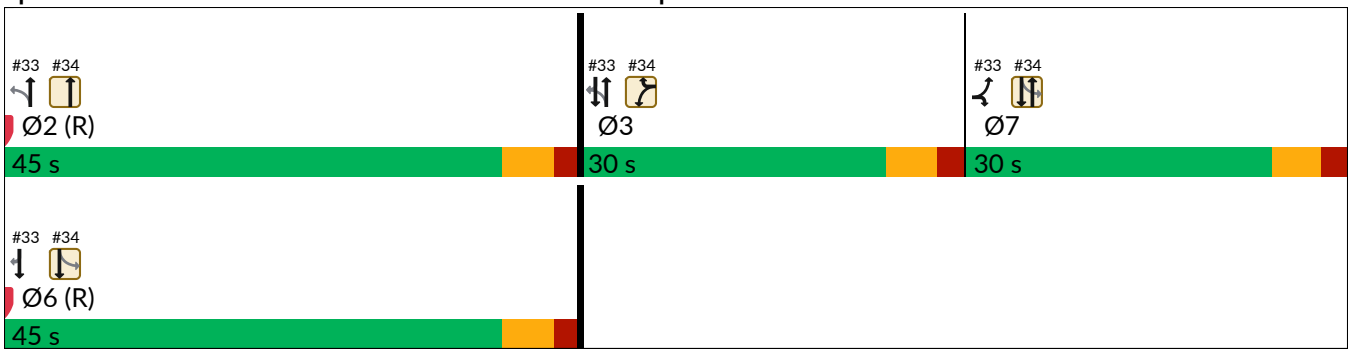
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	290	72	470	88	38	444			
Future Volume (vph)	290	72	470	88	38	444			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.976						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3372	0	1728	1818			
Flt Permitted	0.950				0.359				
Satd. Flow (perm)	1805	1615	3372	0	653	1818			
Satd. Flow (RTOR)		73	45						
Adj. Flow (vph)	309	77	580	109	40	472			
Lane Group Flow (vph)	309	77	689	0	40	472			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.62	0.15	0.31		0.09	0.40			
Control Delay (s/veh)	39.6	8.8	5.6		7.9	10.2			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	39.6	8.8	5.8		7.9	10.2			
Queue Length 50th (ft)	164	2	75		11	168			
Queue Length 95th (ft)	286	39	63		21	181			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	510	509	2294		441	1229			
Starvation Cap Reductn	0	0	754		0	0			
Spillback Cap Reductn	0	0	0		0	22			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.61	0.15	0.45		0.09	0.39			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

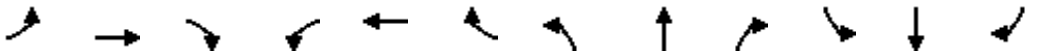


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	290	72	470	88	38	444
Future Volume (vph)	290	72	470	88	38	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3373		1728	1818
Flt Permitted	0.95	1.00	1.00		0.36	1.00
Satd. Flow (perm)	1805	1615	3373		653	1818
Peak-hour factor, PHF	0.94	0.94	0.81	0.81	0.94	0.94
Adj. Flow (vph)	309	77	580	109	40	472
RTOR Reduction (vph)	0	53	16	0	0	0
Lane Group Flow (vph)	309	24	673	0	40	472
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	26.9	26.9	66.1		66.1	66.1
Effective Green, g (s)	28.9	28.9	68.1		68.1	68.1
Actuated g/C Ratio	0.28	0.28	0.65		0.65	0.65
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	496	444	2187		423	1179
v/s Ratio Prot	c0.17	0.01	0.20			c0.26
v/s Ratio Perm					0.06	
v/c Ratio	0.62	0.05	0.31		0.09	0.40
Uniform Delay, d1	33.3	28.0	8.1		6.9	8.8
Progression Factor	1.00	1.00	0.68		1.00	1.00
Incremental Delay, d2	2.4	0.1	0.1		0.1	0.2
Delay (s)	35.7	28.0	5.5		7.0	9.0
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	34.2		5.5			8.8
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

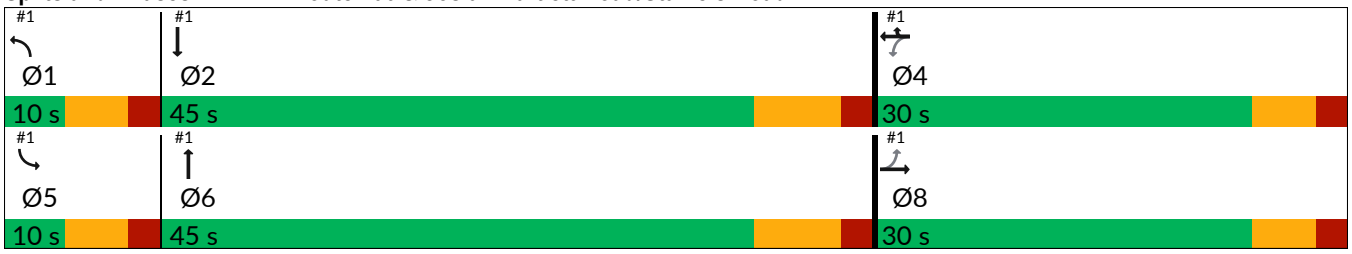
2037 No-Build Weekday Morning Peak-Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	9	122	0	18	0	371	38	31	1214	3
Future Volume (vph)	3	1	9	122	0	18	0	371	38	31	1214	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.904				0.850		0.986				
Flt Protected		0.989			0.950					0.950		
Satd. Flow (prot)	0	1618	0	0	1736	1553	1776	3327	0	1736	3471	0
Flt Permitted		0.929			0.748					0.950		
Satd. Flow (perm)	0	1520	0	0	1367	1553	1776	3327	0	1736	3471	0
Satd. Flow (RTOR)		10				135		17				
Adj. Flow (vph)	3	1	10	136	0	20	0	412	42	34	1349	3
Lane Group Flow (vph)	0	14	0	0	136	20	0	454	0	34	1352	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.42	0.04		0.22		0.27	0.57	
Control Delay (s/veh)		12.6			24.6	0.2		8.4		34.5	8.4	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		12.6			24.6	0.2		8.4		34.5	8.4	
Queue Length 50th (ft)		1			42	0		32		12	141	
Queue Length 95th (ft)		14			93	0		94		41	249	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		728			649	809		2384		127	2482	
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			0.21	0.02		0.19		0.27	0.54	

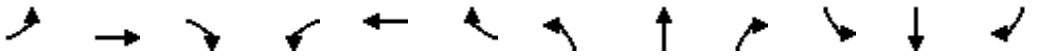
Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 56.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	9	122	0	18	0	371	38	31	1214	3
Future Volume (vph)	3	1	9	122	0	18	0	371	38	31	1214	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.90			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1618			1736	1553		3327		1736	3470	
Flt Permitted		0.93			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1520			1367	1553		3327		1736	3470	
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)	3	1	10	136	0	20	0	412	42	34	1349	3
RTOR Reduction (vph)	0	8	0	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	136	4	0	446	0	34	1352	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		9.4			9.4	9.4		31.8		1.4	39.2	
Effective Green, g (s)		11.4			11.4	11.4		33.8		1.4	41.2	
Actuated g/C Ratio		0.18			0.18	0.18		0.54		0.02	0.66	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		279			250	285		1810		39	2302	
v/s Ratio Prot						0.00		0.13		0.02	c0.39	
v/s Ratio Perm		0.00			c0.10							
v/c Ratio		0.02			0.54	0.01		0.25		0.87	0.59	
Uniform Delay, d1		20.8			23.0	20.7		7.4		30.3	5.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			2.4	0.0		0.1		94.3	0.4	
Delay (s)		20.8			25.4	20.8		7.5		124.6	6.1	
Level of Service		C			C	C		A		F	A	
Approach Delay (s/veh)		20.8			24.8			7.5			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	15.5
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

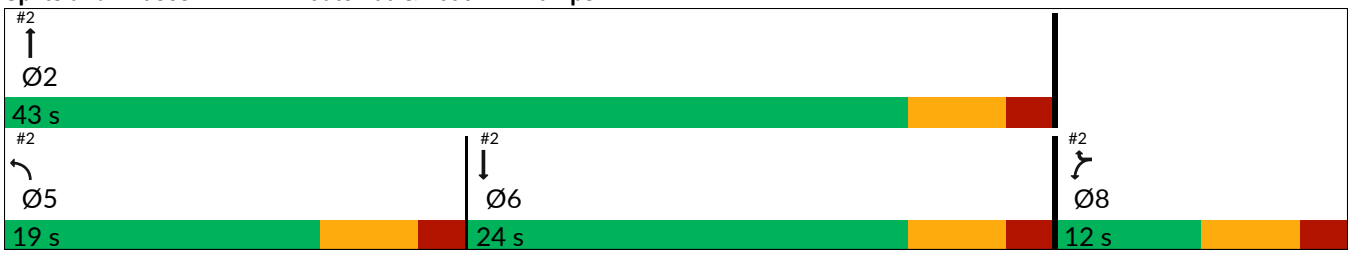


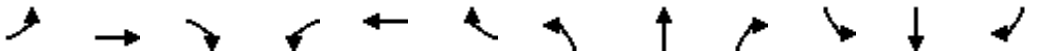
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	15	237	576	0	0	598	1252
Future Volume (vph)	0	0	0	3	0	15	237	576	0	0	598	1252
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Satd. Flow (RTOR)						179						817
Adj. Flow (vph)	0	0	0	3	0	17	263	640	0	0	664	1391
Lane Group Flow (vph)	0	0	0	3	0	17	263	640	0	0	664	1391
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.01		0.04	0.30	0.21			0.42	0.92
Control Delay (s/veh)				16.3		0.1	12.8	1.1			9.3	13.2
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				16.3		0.1	12.8	1.1			9.3	13.2
Queue Length 50th (ft)				1		0	19	0			37	0
Queue Length 95th (ft)				7		0	64	46			132	#133
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				366		458	1235	3007			1860	1516
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		0.04	0.21	0.21			0.36	0.92

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 39.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

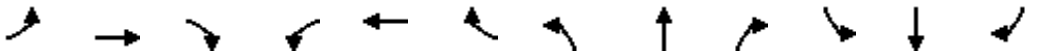




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	15	237	576	0	0	598	1252
Future Volume (vph)	0	0	0	3	0	15	237	576	0	0	598	1252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1743		1509	3134	3231			3388	1516
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1743		1509	3134	3231			3388	1516
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)	0	0	0	3	0	17	263	640	0	0	664	1391
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	1	263	640	0	0	664	1391
Heavy Vehicles (%)	0%	0%	0%	7%	7%	7%	8%	8%	8%	3%	3%	3%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				0.9		0.9	8.9	31.5			16.6	44.4
Effective Green, g (s)				2.9		2.9	10.9	33.5			18.6	44.4
Actuated g/C Ratio				0.07		0.07	0.25	0.75			0.42	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				113		98	769	2437			1419	1516
v/s Ratio Prot				0.00		0.00	0.08	0.20			0.20	
v/s Ratio Perm												c0.92
v/c Ratio				0.03		0.01	0.34	0.26			0.47	0.92
Uniform Delay, d1				19.4		19.4	13.8	1.7			9.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		0.0	0.3	0.1			0.2	10.3
Delay (s)				19.5		19.5	14.1	1.7			9.6	10.3
Level of Service				B		B	B	A			A	B
Approach Delay (s/veh)		0.0			19.5			5.3			10.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

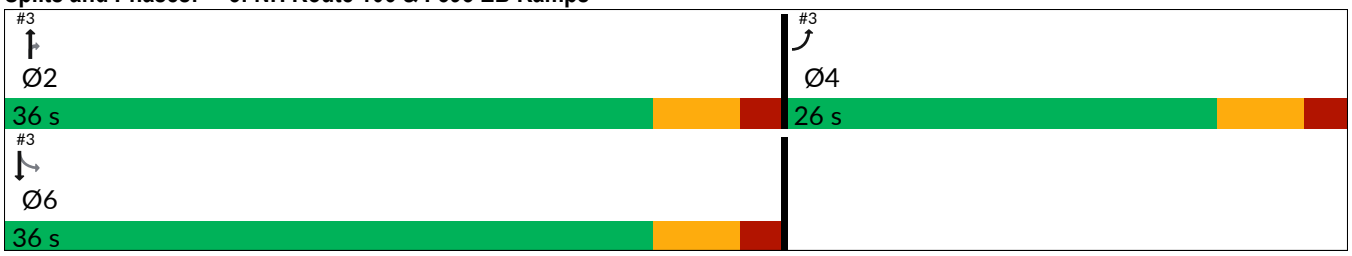
c Critical Lane Group

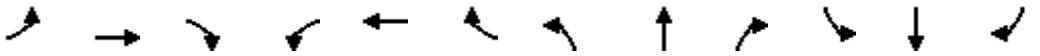


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	0	419	0	0	0	0	454	1	30	571	0
Future Volume (vph)	359	0	419	0	0	0	0	454	1	30	571	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.998	
Satd. Flow (prot)	3303	0	2682	0	0	0	0	3261	1459	0	3414	0
Flt Permitted	0.950										0.914	
Satd. Flow (perm)	3303	0	2682	0	0	0	0	3261	1459	0	3127	0
Satd. Flow (RTOR)			466						53			
Adj. Flow (vph)	399	0	466	0	0	0	0	504	1	33	634	0
Lane Group Flow (vph)	399	0	466	0	0	0	0	504	1	0	667	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.37		0.17					0.34	0.00		0.47	
Control Delay (s/veh)	11.4		0.1					7.4	0.0		8.5	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	11.4		0.1					7.4	0.0		8.5	
Queue Length 50th (ft)	31		0					31	0		43	
Queue Length 95th (ft)	73		0					66	0		87	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	2028		2682					2838	1276		2721	
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	0.20		0.17					0.18	0.00		0.25	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 36.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

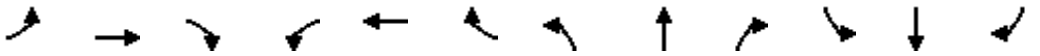




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	0	419	0	0	0	0	454	1	30	571	0
Future Volume (vph)	359	0	419	0	0	0	0	454	1	30	571	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3303		2682					3261	1459		3413	
Flt Permitted	0.95		1.00					1.00	1.00		0.91	
Satd. Flow (perm)	3303		2682					3261	1459		3126	
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)	399	0	466	0	0	0	0	504	1	33	634	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	399	0	466	0	0	0	0	504	0	0	667	0
Heavy Vehicles (%)	6%	6%	6%	0%	0%	0%	7%	7%	7%	2%	2%	2%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	10.0		36.6					14.6	14.6		14.6	
Effective Green, g (s)	12.0		36.6					16.6	16.6		16.6	
Actuated g/C Ratio	0.33		1.00					0.45	0.45		0.45	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1082		2682					1479	661		1417	
v/s Ratio Prot	c0.12							0.15				
v/s Ratio Perm			0.17						0.00		c0.21	
v/c Ratio	0.37		0.17					0.34	0.00		0.47	
Uniform Delay, d1	9.4		0.0					6.5	5.5		6.9	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.2		0.1					0.1	0.0		0.2	
Delay (s)	9.6		0.1					6.6	5.5		7.2	
Level of Service	A		A					A	A		A	
Approach Delay (s/veh)		4.5			0.0			6.6			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	36.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

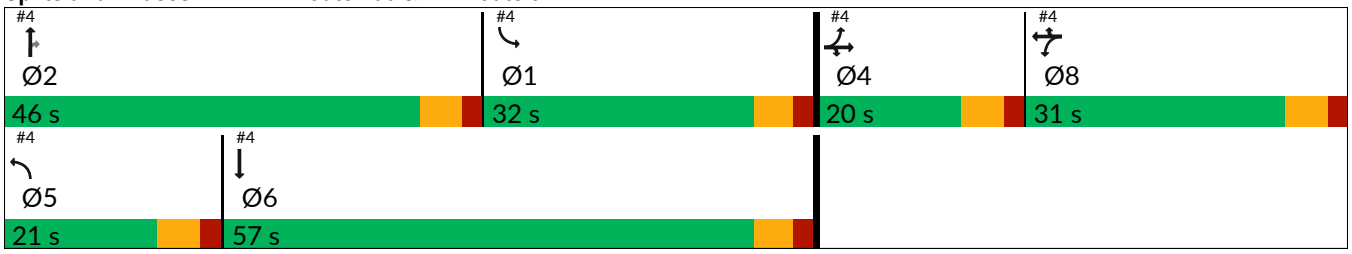
c Critical Lane Group

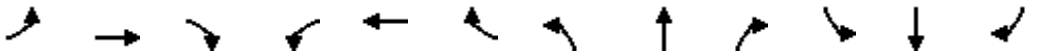


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	103	44	468	211	92	11	239	119	36	700	254
Future Volume (vph)	124	103	44	468	211	92	11	239	119	36	700	254
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.974		0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	1557	3192	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950	0.974		0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	1557	3192	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			178			178			132			228
Adj. Flow (vph)	138	114	49	520	234	102	12	266	132	40	778	282
Lane Group Flow (vph)	138	114	49	260	494	102	12	266	132	40	778	282
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.26	0.40	0.13	0.58	0.54	0.18	0.07	0.32	0.28	0.15	0.63	0.16
Control Delay (s/veh)	34.8	39.4	0.7	33.6	28.8	0.7	41.7	30.5	8.5	32.6	24.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	39.4	0.7	33.6	28.8	0.7	41.7	30.5	8.5	32.6	24.6	0.2
Queue Length 50th (ft)	31	52	0	114	106	0	6	64	0	18	165	0
Queue Length 95th (ft)	78	138	0	289	234	0	29	137	54	50	304	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	682	370	454	555	1140	661	363	1795	861	631	2375	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	49	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.31	0.11	0.47	0.43	0.15	0.03	0.15	0.15	0.06	0.33	0.16

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 80
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	103	44	468	211	92	11	239	119	36	700	254
Future Volume (vph)	124	103	44	468	211	92	11	239	119	36	700	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	1557	3193	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	1557	3193	1531	1616	3231	1446	1694	3388	1777
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)	138	114	49	520	234	102	12	266	132	40	778	282
RTOR Reduction (vph)	0	0	41	0	0	74	0	0	100	0	0	0
Lane Group Flow (vph)	138	114	8	260	494	28	12	266	32	40	778	282
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	11.0	11.0	11.0	20.9	20.9	20.9	1.1	18.3	18.3	9.8	27.0	84.0
Effective Green, g (s)	13.0	13.0	13.0	22.9	22.9	22.9	3.1	20.3	20.3	11.8	29.0	84.0
Actuated g/C Ratio	0.15	0.15	0.15	0.27	0.27	0.27	0.04	0.24	0.24	0.14	0.35	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	498	270	230	424	870	417	59	780	349	237	1169	1777
v/s Ratio Prot	0.04	c0.07	0.01	c0.17	0.15	0.02	0.01	c0.08		0.02	c0.23	
v/s Ratio Perm									0.02			0.16
v/c Ratio	0.28	0.42	0.03	0.61	0.57	0.07	0.20	0.34	0.09	0.17	0.67	0.16
Uniform Delay, d1	31.4	32.1	30.2	26.7	26.3	22.6	39.3	26.3	24.7	31.8	23.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.1	0.1	2.6	0.9	0.1	1.7	0.3	0.1	0.3	1.4	0.2
Delay (s)	31.7	33.2	30.2	29.3	27.1	22.7	41.0	26.6	24.8	32.1	24.8	0.2
Level of Service	C	C	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		32.0			27.3			26.4			18.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	10	12	0	17	6	220	4	27	747	9
Future Vol, veh/h	8	0	10	12	0	17	6	220	4	27	747	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	69	69	69	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	8	8	8	2	2	2
Mvmt Flow	16	0	20	17	0	25	7	244	4	30	830	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1153	1157	835	1148	-	244	840	0	0	249	0	0
Stage 1	895	895	-	258	-	-	-	-	-	-	-	-
Stage 2	258	262	-	890	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.18	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.272	-	-	2.218	-	-
Pot Cap-1 Maneuver	176	198	371	177	0	799	770	-	-	1317	-	-
Stage 1	338	362	-	751	0	-	-	-	-	-	-	-
Stage 2	751	695	-	340	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	165	192	371	163	-	799	770	-	-	1317	-	-
Mov Cap-2 Maneuver	165	192	-	163	-	-	-	-	-	-	-	-
Stage 1	330	354	-	745	-	-	-	-	-	-	-	-
Stage 2	722	689	-	314	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	21.41	17.97	0.25	0.27
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	770	-	-	165	371	163	799	1317	-	-
HCM Lane V/C Ratio	0.009	-	-	0.097	0.054	0.107	0.031	0.023	-	-
HCM Ctrl Dly (s/v)	9.7	-	-	29.1	15.3	29.8	9.6	7.8	-	-
HCM Lane LOS	A	-	-	D	C	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.4	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	41	41	428	730	39
Future Vol, veh/h	24	41	41	428	730	39
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	90	90	90	90
Heavy Vehicles, %	4	4	7	7	7	7
Mvmt Flow	35	60	46	476	811	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1378	811	854	0	-	0
Stage 1	811	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.17	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.263	-	-	-
Pot Cap-1 Maneuver	158	376	764	-	-	-
Stage 1	434	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	149	376	764	-	-	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	23.86	0.88	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	764	-	149	376	-	-
HCM Lane V/C Ratio	0.06	-	0.238	0.16	-	-
HCM Ctrl Dly (s/v)	10	-	36.6	16.4	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	0.6	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	11	9	456	748	23
Future Vol, veh/h	13	11	9	456	748	23
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	90	90	90	90
Heavy Vehicles, %	0	0	8	8	4	4
Mvmt Flow	16	14	10	507	831	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1358	831	857	0	-	0
Stage 1	831	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.18	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.272	-	-	-
Pot Cap-1 Maneuver	166	373	759	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	164	373	759	-	-	-
Mov Cap-2 Maneuver	164	-	-	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	596	-	-	-	-	-

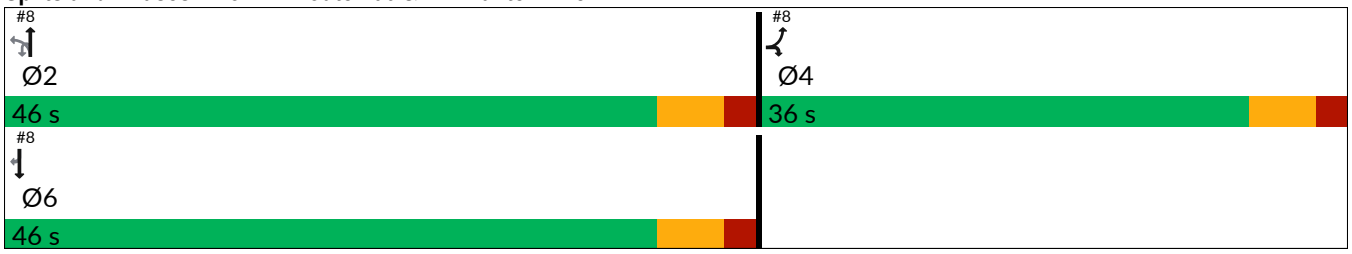
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.85	0.19	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	759	-	164	373	-	-
HCM Lane V/C Ratio	0.013	-	0.101	0.037	-	-
HCM Ctrl Dly (s/v)	9.8	-	29.5	15	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	105	66	1	57	360	632	127
Future Volume (vph)	105	66	1	57	360	632	127
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1711	1531	0	1678	1827	1783	1568
Flt Permitted	0.950			0.314			
Satd. Flow (perm)	1711	1531	0	555	1827	1783	1568
Satd. Flow (RTOR)		73					140
Adj. Flow (vph)	117	73	1	63	400	695	140
Lane Group Flow (vph)	117	73	0	64	400	695	140
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.29	0.17		0.17	0.32	0.56	0.12
Control Delay (s/veh)	19.9	6.9		5.9	5.6	8.3	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.9	6.9		5.9	5.6	8.3	1.3
Queue Length 50th (ft)	26	0		7	49	108	0
Queue Length 95th (ft)	80	29		24	104	228	15
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	1182	1080		468	1542	1505	1346
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	0.10	0.07		0.14	0.26	0.46	0.10

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 48.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	105	66	1	57	360	632	127
Future Volume (vph)	105	66	1	57	360	632	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1531		1678	1827	1783	1568
Flt Permitted	0.95	1.00		0.31	1.00	1.00	1.00
Satd. Flow (perm)	1711	1531		554	1827	1783	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.91	0.91
Adj. Flow (vph)	117	73	1	63	400	695	140
RTOR Reduction (vph)	0	59	0	0	0	0	49
Lane Group Flow (vph)	117	14	0	64	400	695	91
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	7.5	7.5		30.3	30.3	30.3	30.3
Effective Green, g (s)	9.5	9.5		32.3	32.3	32.3	32.3
Actuated g/C Ratio	0.19	0.19		0.65	0.65	0.65	0.65
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	326	292		359	1184	1156	1016
v/s Ratio Prot	c0.07	0.01			0.22	c0.39	
v/s Ratio Perm				0.12			0.06
v/c Ratio	0.36	0.05		0.18	0.34	0.60	0.09
Uniform Delay, d1	17.5	16.5		3.5	3.9	5.0	3.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1		0.2	0.2	0.9	0.0
Delay (s)	18.2	16.5		3.7	4.1	5.9	3.3
Level of Service	B	B		A	A	A	A
Approach Delay (s/veh)	17.5				4.1	5.5	
Approach LOS	B				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	66	110	413	1061	52
Future Vol, veh/h	5	66	110	413	1061	52
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	1	1
Mvmt Flow	6	73	122	459	1179	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1882	1179	1237	0	-	0
Stage 1	1179	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	77	229	553	-	-	-
Stage 1	288	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	60	229	553	-	-	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	224	-	-	-	-	-
Stage 2	485	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	36.59	2.81	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	553	-	191	-	-
HCM Lane V/C Ratio	0.221	-	0.414	-	-
HCM Ctrl Dly (s/v)	13.3	-	36.6	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.8	-	1.9	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	167	178	6	4	6
Future Vol, veh/h	8	167	178	6	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	38	38
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	9	186	198	7	11	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	312	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	4.13	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.219	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1366	-	-	-	673	845
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	908	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1366	-	-	-	669	845
Mov Cap-2 Maneuver	-	-	-	-	669	-
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	908	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.35	0	9.79
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1366	-	-	-	669	845
HCM Lane V/C Ratio	0.007	-	-	-	0.016	0.019
HCM Ctrl Dly (s/v)	7.7	-	-	-	10.5	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0.1

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	152	36	45	139	13	23
Future Vol, veh/h	152	36	45	139	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	69	69
Heavy Vehicles, %	3	3	2	2	0	0
Mvmt Flow	169	40	50	154	19	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	209	0	443	104
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	254	-
Critical Hdwy	-	-	4.13	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.219	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1361	-	562	936
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	793	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1361	-	541	936
Mov Cap-2 Maneuver	-	-	-	-	541	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	793	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.89	10.04
HCM LOS			B

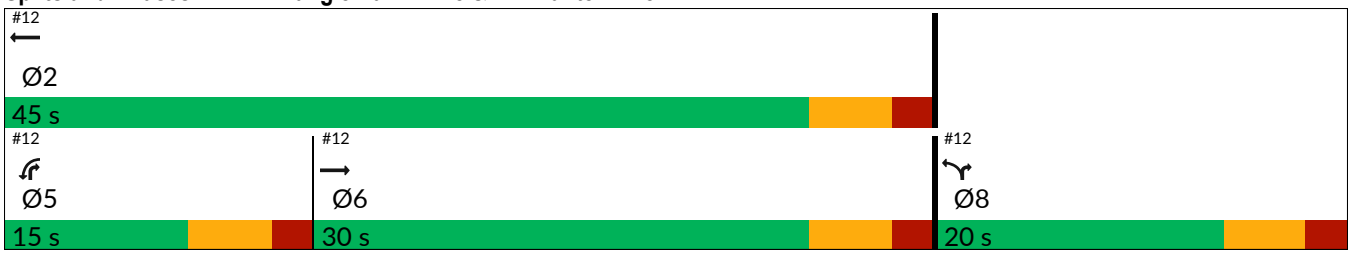
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	541	936	-	-	1361	-
HCM Lane V/C Ratio	0.035	0.036	-	-	0.037	-
HCM Ctrl Dly (s/v)	11.9	9	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	145	70	44	108	46	43
Future Volume (vph)	145	70	44	108	46	43
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.951					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3286	0	1694	1845	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3286	0	1694	1845	1770	1583
Satd. Flow (RTOR)	78					48
Adj. Flow (vph)	161	78	49	120	51	48
Lane Group Flow (vph)	239	0	49	120	51	48
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	30.0		15.0	45.0	20.0	
Total Split (%)	46.2%		23.1%	69.2%	30.8%	
Maximum Green (s)	24.0		9.0	39.0	14.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		None	Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.13		0.12	0.09	0.12	0.07
Control Delay (s/veh)	8.0		13.5	3.8	13.4	2.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.0		13.5	3.8	13.4	2.0
Queue Length 50th (ft)	14		9	10	9	0
Queue Length 95th (ft)	37		30	26	30	9
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2550		552	1817	839	962
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	0.09		0.09	0.07	0.06	0.05

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 35.3
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

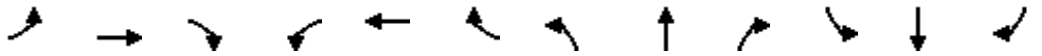
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	145	70	44	108	46	43
Future Volume (vph)	145	70	44	108	46	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3286		1694	1845	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3286		1694	1845	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	161	78	49	120	51	48
RTOR Reduction (vph)	45	0	0	0	0	30
Lane Group Flow (vph)	194	0	49	120	51	18
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	15.3		3.8	25.1	3.8	13.6
Effective Green, g (s)	17.3		5.8	27.1	5.8	15.6
Actuated g/C Ratio	0.42		0.14	0.66	0.14	0.38
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1389		240	1222	251	603
v/s Ratio Prot	c0.06		c0.03	0.07	c0.03	0.01
v/s Ratio Perm						
v/c Ratio	0.14		0.20	0.10	0.20	0.03
Uniform Delay, d1	7.2		15.5	2.5	15.5	7.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0		0.4	0.0	0.4	0.0
Delay (s)	7.3		15.9	2.5	15.9	7.9
Level of Service	A		B	A	B	A
Approach Delay (s/veh)	7.3			6.4	12.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	40.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

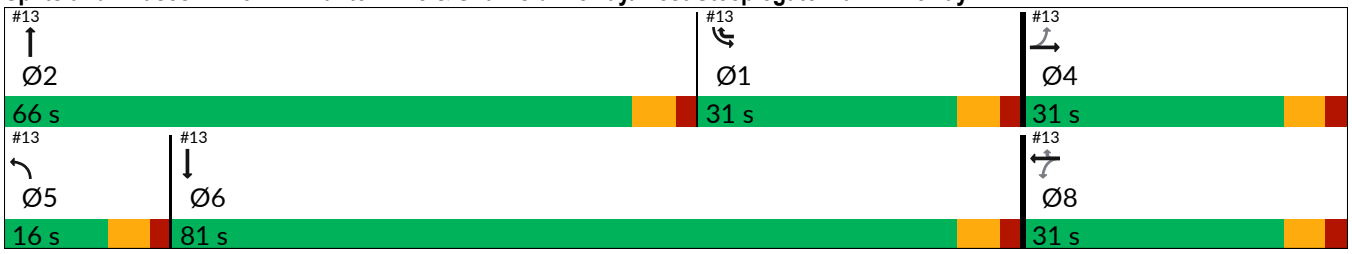
c Critical Lane Group

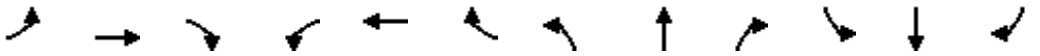


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	0	0	4	17	173	2	7	217	27
Future Volume (vph)	40	0	26	0	0	4	17	173	2	7	217	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.941				0.850		0.998			0.983	
Flt Protected		0.971					0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1963	1669	1787	3448	0	3351	3396	0
Flt Permitted		0.840					0.950			0.950		
Satd. Flow (perm)	0	2853	0	0	1963	1669	1787	3448	0	3351	3396	0
Satd. Flow (RTOR)		128				658		1			19	
Adj. Flow (vph)	51	0	33	0	0	12	19	192	2	8	241	30
Lane Group Flow (vph)	0	84	0	0	0	12	19	194	0	8	271	0
Turn Type	Perm	NA				pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	16.0	66.0		31.0	81.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%	24.2%	12.5%	51.6%		24.2%	63.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	10.0	60.0		25.0	75.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.10				0.01	0.04	0.09		0.01	0.12	
Control Delay (s/veh)		2.3				0.0	10.6	6.6		10.0	5.9	
Queue Delay		0.0				0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		2.3				0.0	10.6	6.6		10.0	5.9	
Queue Length 50th (ft)		0				0	2	7		0	9	
Queue Length 95th (ft)		4				0	15	35		4	43	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		2575				1566	714	3448		3010	3396	
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		0.03				0.01	0.03	0.06		0.00	0.08	

Intersection Summary
Cycle Length: 128
Actuated Cycle Length: 30.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	0	0	4	17	173	2	7	217	27
Future Volume (vph)	40	0	26	0	0	4	17	173	2	7	217	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0				4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95				1.00	1.00	0.95		0.97	0.95	
Frt		0.94				0.85	1.00	1.00		1.00	0.98	
Flt Protected		0.97				1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3297				1669	1787	3450		3351	3398	
Flt Permitted		0.84				1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2853				1669	1787	3450		3351	3398	
Peak-hour factor, PHF	0.78	0.78	0.78	0.33	0.33	0.33	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	0	33	0	0	12	19	192	2	8	241	30
RTOR Reduction (vph)	0	73	0	0	0	9	0	1	0	0	10	0
Lane Group Flow (vph)	0	11	0	0	0	3	19	193	0	8	261	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA				pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		3.2				4.4	1.0	15.9		1.2	16.1	
Effective Green, g (s)		5.2				8.4	3.0	17.9		3.2	18.1	
Actuated g/C Ratio		0.14				0.22	0.08	0.47		0.08	0.47	
Clearance Time (s)		6.0				6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0				3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		387				540	139	1612		279	1605	
v/s Ratio Prot						0.00	0.01	c0.06		0.00	c0.08	
v/s Ratio Perm		c0.00				0.00						
v/c Ratio		0.03				0.00	0.14	0.12		0.03	0.16	
Uniform Delay, d1		14.4				11.7	16.4	5.8		16.1	5.8	
Progression Factor		1.00				1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0				0.0	0.5	0.0		0.0	0.0	
Delay (s)		14.4				11.7	16.9	5.8		16.2	5.8	
Level of Service		B				B	B	A		B	A	
Approach Delay (s/veh)		14.4			11.7			6.8			6.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

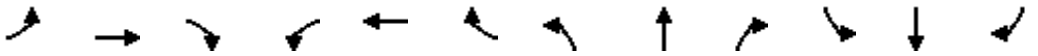
Intersection	
Int Delay, s/veh	1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	14	32	458	95	42	515
Future Vol, veh/h	14	32	458	95	42	515
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	75	75	94	94	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	19	43	487	101	47	572

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	917	294	0	0	588	0
Stage 1	538	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	275	708	-	-	990	-
Stage 1	555	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	708	-	-	990	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	13.88	0	0.66
HCM LOS	B		

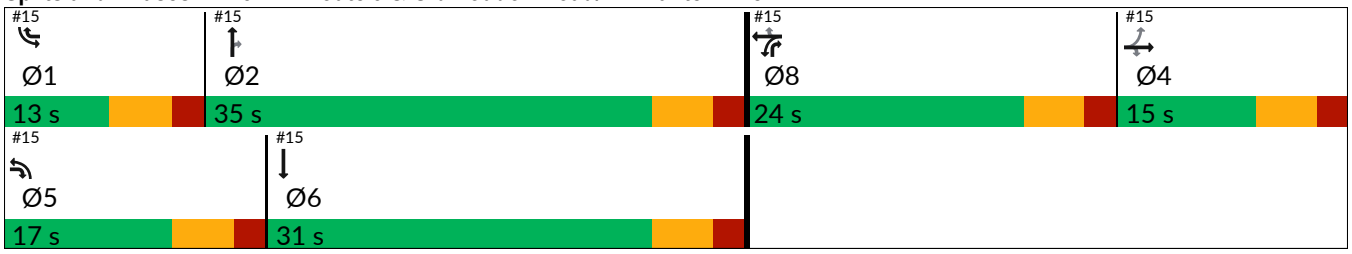
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	466	990	-
HCM Lane V/C Ratio	-	-	0.132	0.047	-
HCM Ctrl Dly (s/v)	-	-	13.9	8.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

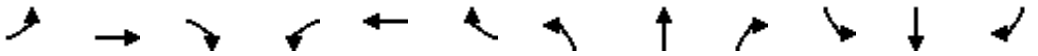


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	30	65	156	27	34	46	271	173	48	336	9
Future Volume (vph)	7	30	65	156	27	34	46	271	173	48	336	9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.990		0.950	0.966		0.950			0.950		
Satd. Flow (prot)	0	1818	1561	1641	1726	1492	1787	3455	1599	3433	3408	0
Flt Permitted		0.904		0.950	0.966		0.950			0.950		
Satd. Flow (perm)	0	1660	1561	1641	1726	1492	1787	3455	1599	3433	3408	0
Satd. Flow (RTOR)			113			113			192		3	
Adj. Flow (vph)	8	33	72	173	30	38	51	301	192	53	373	10
Lane Group Flow (vph)	0	41	72	100	103	38	51	301	192	53	383	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	15.0	15.0	17.0	24.0	24.0	13.0	17.0	35.0	24.0	13.0	31.0	
Total Split (%)	17.2%	17.2%	19.5%	27.6%	27.6%	14.9%	19.5%	40.2%	27.6%	14.9%	35.6%	
Maximum Green (s)	9.0	9.0	11.0	18.0	18.0	7.0	11.0	29.0	18.0	7.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.14	0.14	0.27	0.26	0.05	0.15	0.22	0.15	0.09	0.35	
Control Delay (s/veh)		25.8	2.2	22.8	22.6	0.1	25.0	15.6	1.7	25.3	18.5	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		25.8	2.2	22.8	22.6	0.1	25.0	15.6	1.7	25.3	18.5	
Queue Length 50th (ft)		9	0	23	23	0	11	31	0	6	41	
Queue Length 95th (ft)		45	12	85	86	0	52	89	24	28	120	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		379	622	682	717	765	483	2226	1340	642	1914	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.11	0.12	0.15	0.14	0.05	0.11	0.14	0.14	0.08	0.20	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 52.7
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

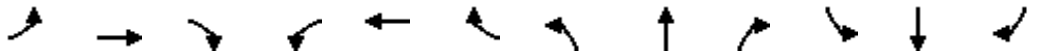




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	30	65	156	27	34	46	271	173	48	336	9
Future Volume (vph)	7	30	65	156	27	34	46	271	173	48	336	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1819	1561	1641	1726	1492	1787	3455	1599	3433	3408	
Flt Permitted		0.90	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1661	1561	1641	1726	1492	1787	3455	1599	3433	3408	
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)	8	33	72	173	30	38	51	301	192	53	373	10
RTOR Reduction (vph)	0	0	57	0	0	27	0	0	85	0	2	0
Lane Group Flow (vph)	0	41	15	100	103	11	51	301	107	53	381	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		2.5	8.4	9.7	9.7	13.2	5.9	18.9	28.6	3.5	16.5	
Effective Green, g (s)		4.5	12.4	11.7	11.7	17.2	7.9	20.9	32.6	5.5	18.5	
Actuated g/C Ratio		0.08	0.21	0.20	0.20	0.29	0.13	0.36	0.56	0.09	0.32	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		127	436	327	344	437	240	1232	998	322	1075	
v/s Ratio Prot			0.00	c0.06	0.06	0.00	c0.03	0.09	0.02	0.02	c0.11	
v/s Ratio Perm		c0.02	0.01			0.01			0.05			
v/c Ratio		0.32	0.03	0.31	0.30	0.03	0.21	0.24	0.11	0.16	0.35	
Uniform Delay, d1		25.6	18.3	20.0	20.0	14.7	22.6	13.3	6.1	24.4	15.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.0	0.5	0.5	0.0	0.4	0.1	0.0	0.2	0.2	
Delay (s)		27.1	18.4	20.5	20.5	14.8	23.0	13.4	6.2	24.7	15.7	
Level of Service		C	B	C	C	B	C	B	A	C	B	
Approach Delay (s/veh)		21.5			19.6			11.7			16.7	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

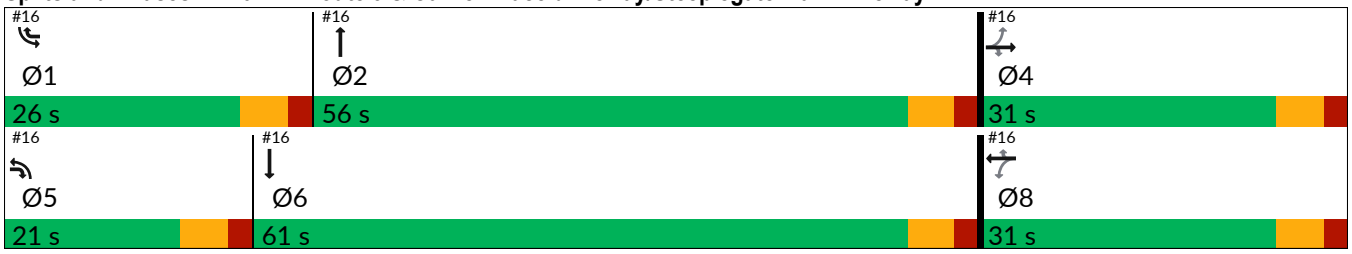
c Critical Lane Group

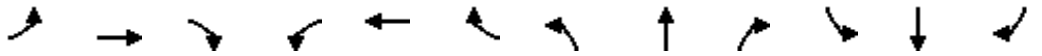


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	35	15	0	4	45	252	15	1	343	43
Future Volume (vph)	36	1	35	15	0	4	45	252	15	1	343	43
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.991			0.983	
Flt Protected		0.953			0.950		0.950			0.950		
Satd. Flow (prot)	0	1677	1495	0	1865	1669	1829	3390	0	1752	3330	0
Flt Permitted		0.878			0.889		0.950			0.950		
Satd. Flow (perm)	0	1545	1495	0	1745	1669	1829	3390	0	1752	3330	0
Satd. Flow (RTOR)			39			29		7			17	
Adj. Flow (vph)	40	1	39	21	0	6	50	280	17	1	381	48
Lane Group Flow (vph)	0	41	39	0	21	6	50	297	0	1	429	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	31.0	31.0	21.0	31.0	31.0	26.0	21.0	56.0		26.0	61.0	
Total Split (%)	27.4%	27.4%	18.6%	27.4%	27.4%	23.0%	18.6%	49.6%		23.0%	54.0%	
Maximum Green (s)	25.0	25.0	15.0	25.0	25.0	20.0	15.0	50.0		20.0	55.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.10	0.07		0.05	0.01	0.11	0.11		0.00	0.21	
Control Delay (s/veh)		14.8	3.0		14.7	0.5	14.8	4.6		17.0	8.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		14.8	3.0		14.7	0.5	14.8	4.6		17.0	8.3	
Queue Length 50th (ft)		5	0		2	0	6	0		0	18	
Queue Length 95th (ft)		32	11		15	0	35	50		4	78	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		1219	934		1376	1276	908	3390		1126	3330	
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		0.03	0.04		0.02	0.00	0.06	0.09		0.00	0.13	

Intersection Summary
Cycle Length: 113
Actuated Cycle Length: 36.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	35	15	0	4	45	252	15	1	343	43
Future Volume (vph)	36	1	35	15	0	4	45	252	15	1	343	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677	1495		1865	1669	1829	3392		1752	3331	
Flt Permitted		0.88	1.00		0.89	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1545	1495		1745	1669	1829	3392		1752	3331	
Peak-hour factor, PHF	0.90	0.90	0.90	0.71	0.71	0.71	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	1	39	21	0	6	50	280	17	1	381	48
RTOR Reduction (vph)	0	0	30	0	0	5	0	3	0	0	8	0
Lane Group Flow (vph)	0	41	9	0	21	1	50	294	0	1	421	0
Heavy Vehicles (%)	8%	8%	8%	0%	0%	0%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		2.5	6.5		2.5	3.3	4.0	24.1		0.8	20.9	
Effective Green, g (s)		4.5	10.5		4.5	7.3	6.0	26.1		2.8	22.9	
Actuated g/C Ratio		0.10	0.23		0.10	0.16	0.13	0.57		0.06	0.50	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		153	477		172	415	241	1950		108	1680	
v/s Ratio Prot			0.00			0.00	c0.03	c0.09		0.00	c0.13	
v/s Ratio Perm		c0.03	0.00		0.01	0.00						
v/c Ratio		0.27	0.02		0.12	0.00	0.21	0.15		0.01	0.25	
Uniform Delay, d1		18.9	13.5		18.6	16.0	17.6	4.5		20.0	6.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.0		0.3	0.0	0.4	0.0		0.0	0.1	
Delay (s)		19.9	13.5		19.0	16.0	18.0	4.5		20.0	6.5	
Level of Service		B	B		B	B	B	A		C	A	
Approach Delay (s/veh)		16.8			18.3			6.5			6.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	45.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	291	1	0	386
Future Vol, veh/h	1	0	291	1	0	386
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	92	92	90	90
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	4	0	316	1	0	429

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	531	159	0	0	317	0
Stage 1	317	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	483	865	-	-	1239	-
Stage 1	717	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	483	865	-	-	1239	-
Mov Cap-2 Maneuver	483	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	807	-	-	-	-	-

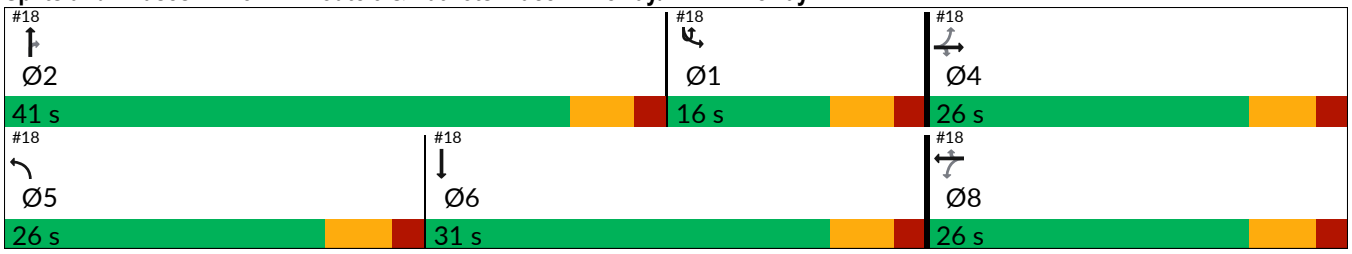
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.52	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	483	1239	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Ctrl Dly (s/v)	-	-	12.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	268	10	1	5	353
Future Volume (vph)	2	1	6	27	1	2	13	268	10	1	5	353
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.992
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3329
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3329
Satd. Flow (RTOR)			197			197			118			7
Adj. Flow (vph)	3	1	9	44	2	3	14	298	11	1	6	392
Lane Group Flow (vph)	0	4	9	0	46	3	14	298	11	0	7	414
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.11	0.01	0.03	0.11	0.01		0.02	0.16
Control Delay (s/veh)		12.3	0.0		12.4	0.0	13.5	5.9	0.0		12.8	5.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		12.3	0.0		12.4	0.0	13.5	5.9	0.0		12.8	5.4
Queue Length 50th (ft)		1	0		5	0	2	0	0		1	0
Queue Length 95th (ft)		5	0		21	0	15	58	0		10	75
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		987	1179		1054	1136	1226	3260	1464		656	2831
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.04	0.00	0.01	0.09	0.01		0.01	0.15

Intersection Summary
Cycle Length: 83
Actuated Cycle Length: 33.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	22
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

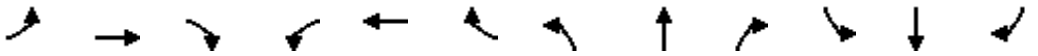
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	268	10	1	5	353
Future Volume (vph)	2	1	6	27	1	2	13	268	10	1	5	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3329
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3329
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	1	9	44	2	3	14	298	11	1	6	392
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	5	0	0	3
Lane Group Flow (vph)	0	4	1	0	46	0	14	298	6	0	7	411
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	0.9	20.3	20.3		1.2	20.6
Effective Green, g (s)		4.7	4.7		4.7	4.7	2.9	22.3	22.3		3.2	22.6
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.07	0.53	0.53		0.08	0.54
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		158	179		169	172	121	1807	809		131	1782
v/s Ratio Prot							0.01	c0.09			0.00	c0.12
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.00			
v/c Ratio		0.03	0.01		0.27	0.00	0.12	0.16	0.01		0.05	0.23
Uniform Delay, d1		16.7	16.7		17.2	16.7	18.4	5.1	4.7		18.1	5.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		0.9	0.0	0.4	0.0	0.0		0.2	0.1
Delay (s)		16.8	16.7		18.1	16.7	18.9	5.2	4.7		18.3	5.3
Level of Service		B	B		B	B	B	A	A		B	A
Approach Delay (s/veh)		16.7			18.0			5.8				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	22
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

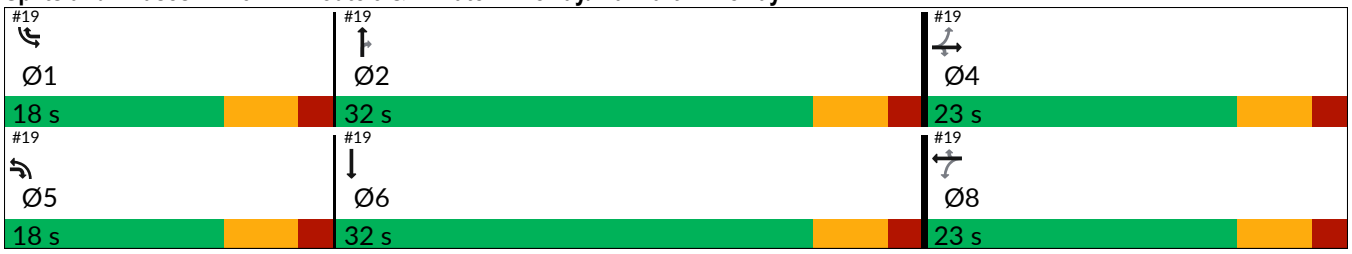
Intersection Summary

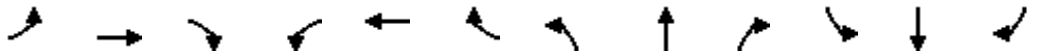


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	148	11	51	292	25
Future Volume (vph)	49	11	66	21	6	40	34	148	11	51	292	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3448	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3448	0
Satd. Flow (RTOR)			77			48			134		14	
Adj. Flow (vph)	57	13	77	25	7	48	38	164	12	57	324	28
Lane Group Flow (vph)	0	70	77	0	32	48	38	164	12	57	352	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	23.0	23.0	18.0	23.0	23.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (%)	31.5%	31.5%	24.7%	31.5%	31.5%	24.7%	24.7%	43.8%	43.8%	24.7%	43.8%	
Maximum Green (s)	17.0	17.0	12.0	17.0	17.0	12.0	12.0	26.0	26.0	12.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.18	0.10		0.09	0.07	0.09	0.08	0.01	0.13	0.18	
Control Delay (s/veh)		14.9	2.2		14.5	2.3	15.5	11.2	0.0	15.0	10.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		14.9	2.2		14.5	2.3	15.5	11.2	0.0	15.0	10.0	
Queue Length 50th (ft)		13	0		6	0	7	15	0	11	32	
Queue Length 95th (ft)		40	12		22	9	28	36	0	36	66	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		800	1019		739	957	745	2684	1272	702	2682	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.09	0.08		0.04	0.05	0.05	0.06	0.01	0.08	0.13	

Intersection Summary
Cycle Length: 73
Actuated Cycle Length: 36.8
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	148	11	51	292	25
Future Volume (vph)	49	11	66	21	6	40	34	148	11	51	292	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3448	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3448	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	13	77	25	7	48	38	164	12	57	324	28
RTOR Reduction (vph)	0	0	56	0	0	34	0	0	7	0	8	0
Lane Group Flow (vph)	0	70	21	0	32	14	38	164	5	57	344	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.2	7.7		4.2	8.0	3.5	16.3	16.3	3.8	16.6	
Effective Green, g (s)		6.2	11.7		6.2	12.0	5.5	18.3	18.3	5.8	18.6	
Actuated g/C Ratio		0.15	0.28		0.15	0.28	0.13	0.43	0.43	0.14	0.44	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		207	599		191	579	232	1494	691	231	1516	
v/s Ratio Prot			0.00			0.00	0.02	0.05		c0.03	c0.10	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.34	0.04		0.17	0.02	0.16	0.11	0.01	0.25	0.23	
Uniform Delay, d1		16.2	11.2		15.8	10.9	16.4	7.1	6.8	16.3	7.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.0	0.0		0.4	0.0	0.3	0.0	0.0	0.6	0.1	
Delay (s)		17.2	11.2		16.2	10.9	16.7	7.2	6.8	16.9	7.5	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		14.0			13.0			8.8			8.8	
Approach LOS		B			B			A			A	

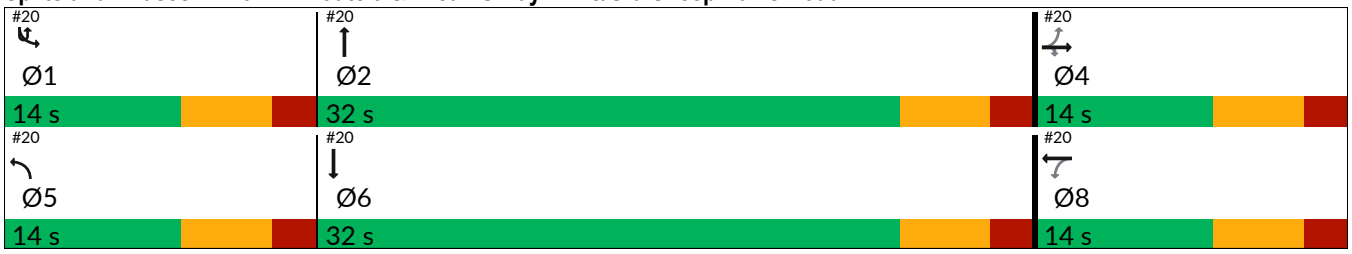
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	266	0	5	5	466
Future Volume (vph)	0	0	1	0	0	0	1	266	0	5	5	466
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850									
Flt Protected							0.950				0.950	
Satd. Flow (prot)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Flt Permitted							0.950				0.950	
Satd. Flow (perm)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Satd. Flow (RTOR)			453									
Adj. Flow (vph)	0	0	4	0	0	0	1	286	0	6	6	518
Lane Group Flow (vph)	0	0	4	0	0	0	1	286	0	0	12	518
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	14.0	14.0	14.0	14.0	14.0		14.0	32.0		14.0	14.0	32.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		23.3%	53.3%		23.3%	23.3%	53.3%
Maximum Green (s)	8.0	8.0	8.0	8.0	8.0		8.0	26.0		8.0	8.0	26.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio			0.01				0.00	0.09			0.03	0.16
Control Delay (s/veh)			0.0				16.0	2.8			15.1	2.6
Queue Delay			0.0				0.0	0.0			0.0	0.0
Total Delay (s/veh)			0.0				16.0	2.8			15.1	2.6
Queue Length 50th (ft)			0				0	0			1	0
Queue Length 95th (ft)			0				4	43			15	72
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)			810				490	2844			530	2877
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			0.00				0.00	0.10			0.02	0.18

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 35.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

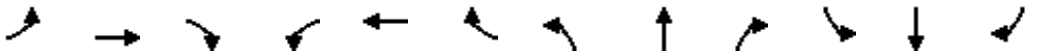
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	266	0	5	5	466
Future Volume (vph)	0	0	1	0	0	0	1	266	0	5	5	466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)			4.0				4.0	4.0			4.0	4.0
Lane Util. Factor			1.00				1.00	0.95			1.00	0.95
Frt			0.85				1.00	1.00			1.00	1.00
Flt Protected			1.00				0.95	1.00			0.95	1.00
Satd. Flow (prot)			1669				1668	3455			1805	3490
Flt Permitted			1.00				0.95	1.00			0.95	1.00
Satd. Flow (perm)			1669				1668	3455			1805	3490
Peak-hour factor, PHF	0.25	0.25	0.25	0.90	0.90	0.90	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	0	0	4	0	0	0	1	286	0	6	6	518
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	1	286	0	0	12	518
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)			0.7				0.7	26.4			0.9	26.6
Effective Green, g (s)			2.7				2.7	28.4			2.9	28.6
Actuated g/C Ratio			0.06				0.06	0.62			0.06	0.62
Clearance Time (s)			6.0				6.0	6.0			6.0	6.0
Vehicle Extension (s)			3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			97				97	2133			113	2169
v/s Ratio Prot							0.00	0.08			c0.01	c0.15
v/s Ratio Perm			c0.00									
v/c Ratio			0.00				0.01	0.13			0.11	0.24
Uniform Delay, d1			20.4				20.4	3.7			20.3	3.9
Progression Factor			1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0				0.0	0.0			0.4	0.1
Delay (s)			20.4				20.4	3.7			20.7	3.9
Level of Service			C				C	A			C	A
Approach Delay (s/veh)		20.4			0.0			3.8				4.3
Approach LOS		C			A			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	23.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

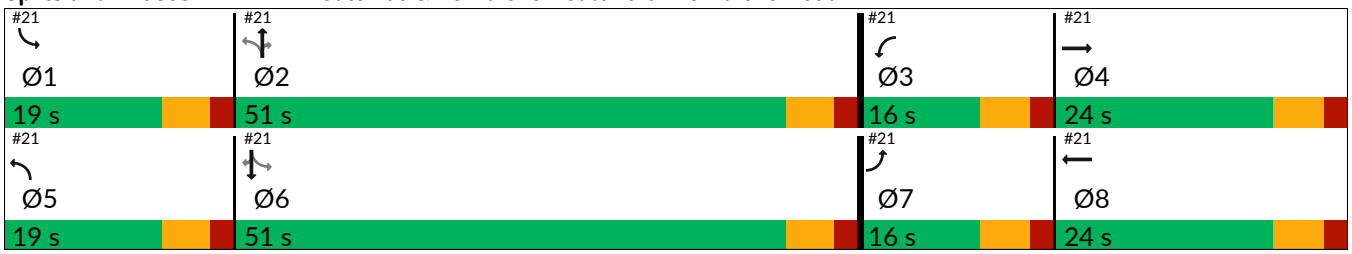


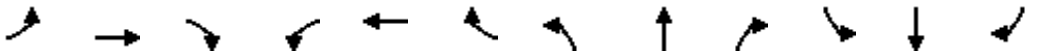
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	23	111	60	82	55	67	455	28	43	931	145
Future Volume (vph)	40	23	111	60	82	55	67	455	28	43	931	145
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1648	0	1770	1576	0	1776	1810	1538	1829	1863	1531
Flt Permitted	0.950			0.950			0.077			0.369		
Satd. Flow (perm)	1787	1648	0	1770	1576	0	144	1810	1538	710	1863	1531
Satd. Flow (RTOR)		123			27				149			149
Adj. Flow (vph)	44	26	123	67	91	61	74	506	31	48	1034	161
Lane Group Flow (vph)	44	149	0	67	152	0	74	506	31	48	1034	161
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.23	0.44		0.33	0.50		0.28	0.49	0.03	0.09	1.05	0.18
Control Delay (s/veh)	45.0	14.9		46.6	36.6		11.4	18.3	0.1	8.8	69.6	4.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	14.9		46.6	36.6		11.4	18.3	0.1	8.8	69.6	4.2
Queue Length 50th (ft)	26	14		40	74		17	220	0	11	~777	4
Queue Length 95th (ft)	63	70		88	143		43	380	0	29	#1150	42
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	241	466		238	379		368	1026	936	646	985	880
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.32		0.28	0.40		0.20	0.49	0.03	0.07	1.05	0.18

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 91.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

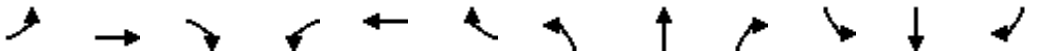




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	23	111	60	82	55	67	455	28	43	931	145
Future Volume (vph)	40	23	111	60	82	55	67	455	28	43	931	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1648		1770	1576		1776	1810	1538	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	1787	1648		1770	1576		144	1810	1538	711	1863	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	26	123	67	91	61	74	506	31	48	1034	161
RTOR Reduction (vph)	0	105	0	0	22	0	0	0	14	0	0	73
Lane Group Flow (vph)	44	44	0	67	130	0	74	506	17	48	1034	88
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.8	12.3		6.8	14.3		56.3	50.1	50.1	51.7	47.8	47.8
Effective Green, g (s)	6.8	14.3		8.8	16.3		60.3	52.1	52.1	55.7	49.8	49.8
Actuated g/C Ratio	0.07	0.15		0.09	0.17		0.62	0.54	0.54	0.57	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	242		160	264		227	971	825	475	955	785
v/s Ratio Prot	0.02	0.03		c0.04	c0.08		c0.03	0.28		0.01	c0.56	
v/s Ratio Perm							0.18		0.01	0.05		0.06
v/c Ratio	0.35	0.18		0.42	0.49		0.33	0.52	0.02	0.10	1.08	0.11
Uniform Delay, d1	43.0	36.3		41.7	36.6		19.7	14.5	10.5	9.8	23.7	12.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.4		1.8	1.4		0.8	0.5	0.0	0.1	54.2	0.1
Delay (s)	44.8	36.6		43.5	38.1		20.5	15.0	10.6	9.9	77.8	12.3
Level of Service	D	D		D	D		C	B	B	A	E	B
Approach Delay (s/veh)		38.5			39.7			15.4			66.7	
Approach LOS		D			D			B			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	146	63	8	18	15	129	427	40	130	626	335
Future Volume (vph)	131	146	63	8	18	15	129	427	40	130	626	335
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.931				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1720	0	1736	1928	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.733			0.512			0.154			0.492		
Satd. Flow (perm)	1365	1720	0	935	1928	0	280	1818	1599	926	1818	1546
Satd. Flow (RTOR)		24			17				66			356
Adj. Flow (vph)	146	162	70	9	20	17	143	474	44	138	666	356
Lane Group Flow (vph)	146	232	0	9	37	0	143	474	44	138	666	356
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.42	0.51		0.04	0.07		0.32	0.44	0.04	0.38	0.93	0.43
Control Delay (s/veh)	22.8	21.3		17.0	11.9		7.4	8.0	1.2	19.6	43.9	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.8	21.3		17.0	11.9		7.4	8.0	1.2	19.6	43.9	4.0
Queue Length 50th (ft)	44	64		3	6		18	73	0	36	~241	0
Queue Length 95th (ft)	91	124		12	25		43	149	7	89	#484	50
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	450	583		308	647		486	1232	1105	365	716	825
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.40		0.03	0.06		0.29	0.38	0.04	0.38	0.93	0.43

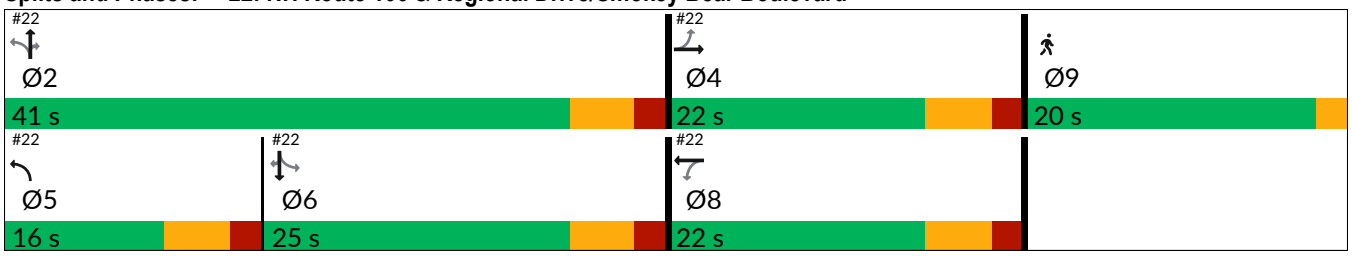
Intersection Summary
Cycle Length: 83

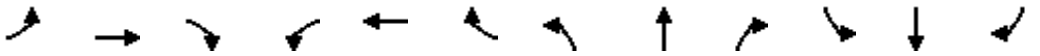
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 56
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

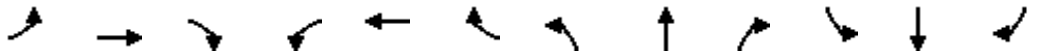




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	146	63	8	18	15	129	427	40	130	626	335
Future Volume (vph)	131	146	63	8	18	15	129	427	40	130	626	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1928		1728	1818	1599	1787	1818	1546
Flt Permitted	0.73	1.00		0.51	1.00		0.15	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1365	1719		935	1928		280	1818	1599	925	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	146	162	70	9	20	17	143	474	44	138	666	356
RTOR Reduction (vph)	0	18	0	0	13	0	0	0	17	0	0	219
Lane Group Flow (vph)	146	214	0	9	24	0	143	474	27	138	666	137
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	12.2	12.2		12.2	12.2		33.0	33.0	33.0	20.0	20.0	20.0
Effective Green, g (s)	14.2	14.2		14.2	14.2		35.0	35.0	35.0	22.0	22.0	22.0
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.61	0.61	0.61	0.38	0.38	0.38
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	338	426		232	478		399	1112	978	355	699	594
v/s Ratio Prot		c0.12			0.01		0.06	c0.26			c0.37	
v/s Ratio Perm	0.11			0.01			0.16		0.02	0.15		0.09
v/c Ratio	0.43	0.50		0.04	0.05		0.36	0.43	0.03	0.39	0.95	0.23
Uniform Delay, d1	18.1	18.5		16.3	16.4		8.9	5.8	4.4	12.7	17.1	11.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9		0.1	0.0		0.6	0.3	0.0	0.7	23.0	0.2
Delay (s)	19.0	19.4		16.4	16.4		9.4	6.1	4.4	13.4	40.1	12.1
Level of Service	B	B		B	B		A	A	A	B	D	B
Approach Delay (s/veh)		19.2			16.4			6.7			28.3	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

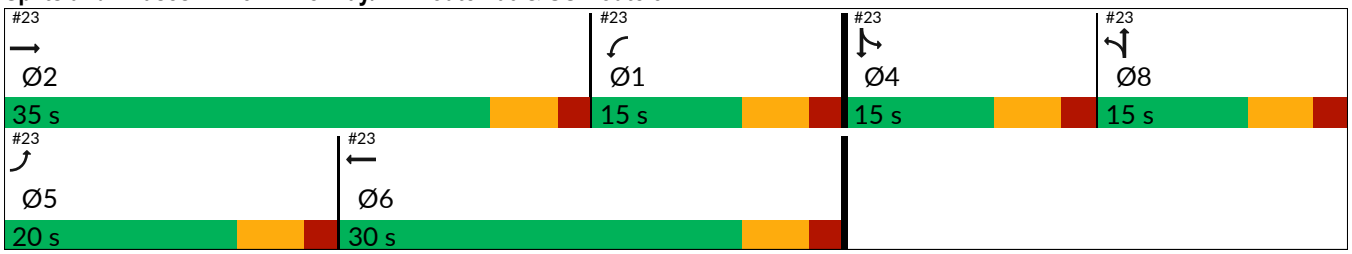


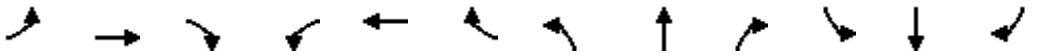
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	255	66	0	712	288	17	6	5	141	20	204
Future Volume (vph)	196	255	66	0	712	288	17	6	5	141	20	204
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Satd. Flow (RTOR)			368			368			368			368
Adj. Flow (vph)	218	283	73	0	791	320	19	7	6	157	22	227
Lane Group Flow (vph)	218	283	73	0	791	320	19	7	6	157	22	227
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	20.0	35.0		15.0	30.0		15.0	15.0		15.0	15.0	
Total Split (%)	25.0%	43.8%		18.8%	37.5%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	14.0	29.0		9.0	24.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.55	0.12	0.04		0.61	0.18	0.04	0.03	0.00	0.29	0.07	0.15
Control Delay (s/veh)	30.8	5.4	0.0		20.4	0.2	30.1	30.3	0.0	28.6	28.4	0.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.8	5.4	0.0		20.4	0.2	30.1	30.3	0.0	28.6	28.4	0.2
Queue Length 50th (ft)	74	14	0		122	0	3	2	0	28	7	0
Queue Length 95th (ft)	#186	48	0		235	0	14	16	0	67	31	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150			200	250		150	250		200
Base Capacity (vph)	468	2276	1660		1613	1759	625	339	1660	625	339	1509
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.12	0.04		0.49	0.18	0.03	0.02	0.00	0.25	0.06	0.15

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 61.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

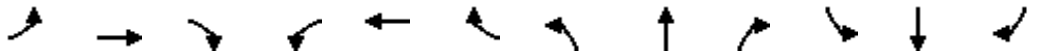




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	255	66	0	712	288	17	6	5	141	20	204
Future Volume (vph)	196	255	66	0	712	288	17	6	5	141	20	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
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)	218	283	73	0	791	320	19	7	6	157	22	227
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	218	283	73	0	791	320	19	7	6	157	22	227
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.7	40.0	66.3		21.3	66.3	2.1	2.1	66.3	6.2	6.2	66.3
Effective Green, g (s)	14.7	42.0	66.3		23.3	66.3	4.1	4.1	66.3	8.2	8.2	66.3
Actuated g/C Ratio	0.22	0.63	1.00		0.35	1.00	0.06	0.06	1.00	0.12	0.12	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	361	2065	1660		1214	1759	195	106	1660	391	212	1509
v/s Ratio Prot	c0.13	0.09			c0.23		0.01	0.00		c0.05	0.01	
v/s Ratio Perm			0.04			c0.18			0.00			0.15
v/c Ratio	0.60	0.14	0.04		0.65	0.18	0.10	0.07	0.00	0.40	0.10	0.15
Uniform Delay, d1	23.2	4.9	0.0		18.1	0.0	29.4	29.3	0.0	26.8	25.8	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.0	0.0		1.3	0.2	0.2	0.3	0.0	0.7	0.2	0.2
Delay (s)	26.0	4.9	0.0		19.4	0.2	29.6	29.6	0.0	27.5	26.0	0.2
Level of Service	C	A	A		B	A	C	C	A	C	C	A
Approach Delay (s/veh)		12.3			13.8			24.0			12.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	622	920	3	0	970	24	1	0	1	31	0	331
Future Volume (vph)	622	920	3	0	970	24	1	0	1	31	0	331
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	1770	3303	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.735			0.757	
Satd. Flow (perm)	1770	3303	0	1689	3196	0	0	1396	1830	0	1299	1459
Satd. Flow (RTOR)					2				150			368
Adj. Flow (vph)	691	1022	3	0	1078	27	1	0	1	34	0	368
Lane Group Flow (vph)	691	1025	0	0	1105	0	0	1	1	0	34	368
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.09	0.38			0.84			0.01	0.00		0.25	0.76
Control Delay (s/veh)	95.0	3.1			32.9			38.0	0.0		43.5	15.7
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	95.0	3.1			32.9			38.0	0.0		43.5	15.7
Queue Length 50th (ft)	~480	65			320			1	0		20	0
Queue Length 95th (ft)	#721	99			#434			6	0		51	#97
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	632	2673			1311			175	361		163	505
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	1.09	0.38			0.84			0.01	0.00		0.21	0.73

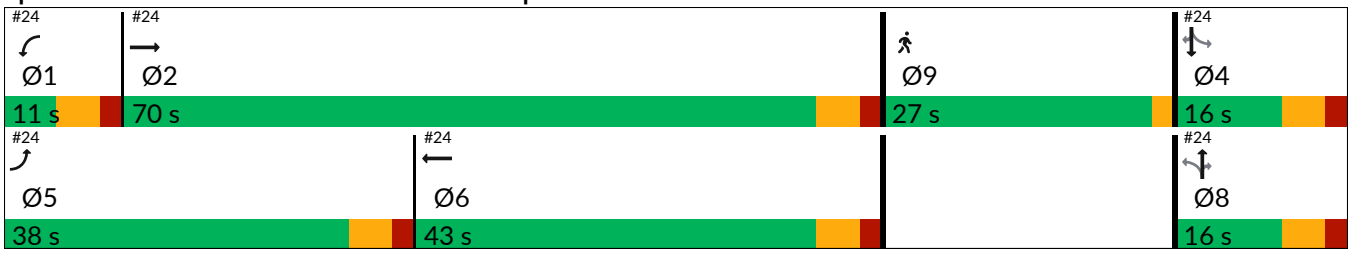
Intersection Summary
Cycle Length: 124

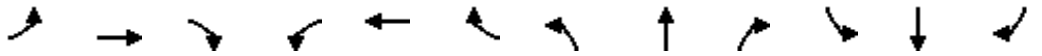
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

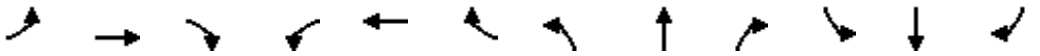




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	622	920	3	0	970	24	1	0	1	31	0	331
Future Volume (vph)	622	920	3	0	970	24	1	0	1	31	0	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3302			3197			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.73	1.00		0.76	1.00
Satd. Flow (perm)	1770	3302			3197			1396	1830		1300	1459
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)	691	1022	3	0	1078	27	1	0	1	34	0	368
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	1	0	0	329
Lane Group Flow (vph)	691	1025	0	0	1104	0	0	1	0	0	34	39
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	32.0	75.0			37.0			8.1	8.1		8.1	8.1
Effective Green, g (s)	34.0	77.0			39.0			10.1	10.1		10.1	10.1
Actuated g/C Ratio	0.36	0.81			0.41			0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	632	2673			1311			148	194		138	154
v/s Ratio Prot	c0.39	0.31			c0.35							
v/s Ratio Perm								0.00	0.00		0.03	c0.03
v/c Ratio	1.09	0.38			0.84			0.01	0.00		0.25	0.25
Uniform Delay, d1	30.6	2.5			25.3			38.0	38.0		39.0	39.0
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	63.9	0.1			5.1			0.0	0.0		0.9	0.9
Delay (s)	94.5	2.6			30.4			38.0	38.0		39.9	39.9
Level of Service	F	A			C			D	D		D	D
Approach Delay (s/veh)		39.6			30.4			38.0			39.9	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	832	8	8	1255	51	1	0	9	18	0	18
Future Volume (vph)	15	832	8	8	1255	51	1	0	9	18	0	18
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	4911	0	1652	3401	0	1805	1615	0	1727	1495	0
Flt Permitted	0.950			0.950			0.744			0.751		
Satd. Flow (perm)	1711	4911	0	1652	3401	0	1414	1615	0	1365	1495	0
Satd. Flow (RTOR)		1			5			730			186	
Adj. Flow (vph)	16	895	9	9	1394	57	1	0	10	20	0	20
Lane Group Flow (vph)	16	904	0	9	1451	0	1	10	0	20	20	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	34.0		26.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.8%	27.6%		21.1%			26.8%	26.8%		26.8%	26.8%	
Maximum Green (s)	6.0	28.0		20.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.14	0.53		0.04	0.58		0.00	0.01		0.10	0.05	
Control Delay (s/veh)	57.5	34.5		46.3	2.6		41.0	0.0		43.7	0.3	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.5	34.5		46.3	2.9		41.0	0.0		43.7	0.3	
Queue Length 50th (ft)	12	209		5	27		1	0		15	0	
Queue Length 95th (ft)	37	293		m8	m53		6	0		38	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	111	1712		300	2485		333	938		321	494	
Starvation Cap Reductn	0	0		0	391		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	0.14	0.53		0.03	0.69		0.00	0.01		0.06	0.04	

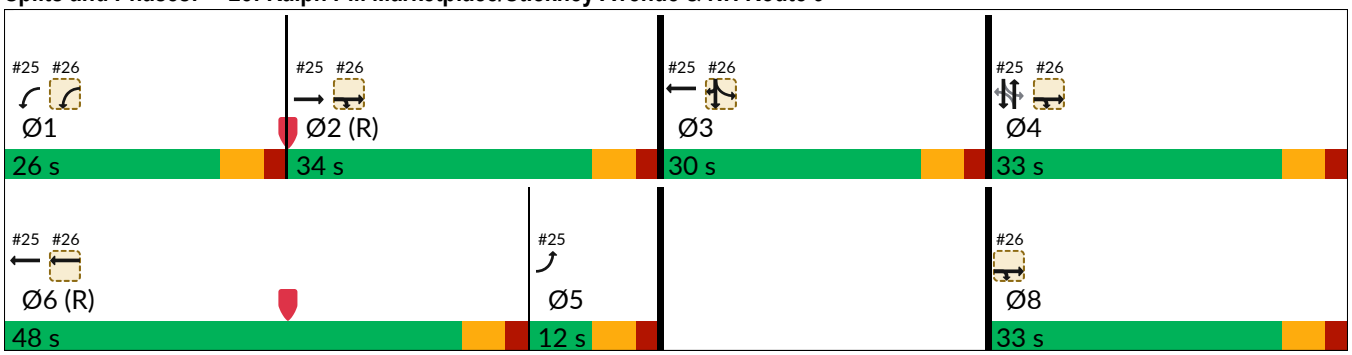
Intersection Summary
Cycle Length: 123

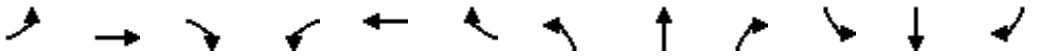
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	30.0	48.0	33.0
Total Split (%)	24%	39%	27%
Maximum Green (s)	24.0	42.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

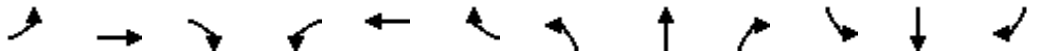




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	832	8	8	1255	51	1	0	9	18	0	18
Future Volume (vph)	15	832	8	8	1255	51	1	0	9	18	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	4908		1652	3401		1805	1615		1727	1495	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	1711	4908		1652	3401		1414	1615		1365	1495	
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	895	9	9	1394	57	1	0	10	20	0	20
RTOR Reduction (vph)	0	1	0	0	2	0	0	8	0	0	17	0
Lane Group Flow (vph)	16	903	0	9	1449	0	1	2	0	20	3	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	40.8		17.1	79.8		16.8	16.8		16.8	16.8	
Effective Green, g (s)	4.4	42.8		19.1	83.8		18.8	18.8		18.8	18.8	
Actuated g/C Ratio	0.04	0.35		0.16	0.68		0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	61	1707		256	2317		216	246		208	228	
v/s Ratio Prot	0.01	c0.18		0.01	c0.43			0.00			0.00	
v/s Ratio Perm							0.00			c0.01		
v/c Ratio	0.26	0.53		0.04	0.63		0.00	0.01		0.10	0.01	
Uniform Delay, d1	57.7	32.0		44.1	10.9		44.2	44.2		44.8	44.2	
Progression Factor	1.00	1.00		1.10	0.29		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	1.2		0.0	0.4		0.0	0.0		0.2	0.0	
Delay (s)	60.0	33.2		48.6	3.5		44.2	44.2		45.0	44.3	
Level of Service	E	C		D	A		D	D		D	D	
Approach Delay (s/veh)		33.7			3.8			44.2			44.6	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	726	133	277	831	0	0	0	0	230	0	483
Future Volume (vph)	0	726	133	277	831	0	0	0	0	230	0	483
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Satd. Flow (RTOR)			143									311
Adj. Flow (vph)	0	781	143	308	923	0	0	0	0	256	0	537
Lane Group Flow (vph)	0	781	143	308	923	0	0	0	0	0	256	537
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				26.0	48.0					30.0	30.0	30.0
Total Split (%)				21.1%	39.0%					24.4%	24.4%	24.4%
Maximum Green (s)				20.0	42.0					24.0	24.0	24.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.32	0.15	0.63	0.57						0.68	0.92
Control Delay (s/veh)		1.4	0.3	56.0	15.8						54.8	42.8
Queue Delay		0.1	0.2	1.8	1.6						0.0	0.0
Total Delay (s/veh)		1.4	0.5	57.8	17.4						54.8	42.8
Queue Length 50th (ft)		7	0	105	160						192	200
Queue Length 95th (ft)		9	0	123	374						288	#426
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2872	1107	576	1627						378	582
Starvation Cap Reductn		724	537	139	496						0	0
Spillback Cap Reductn		50	0	0	8						0	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.36	0.25	0.70	0.82						0.68	0.92

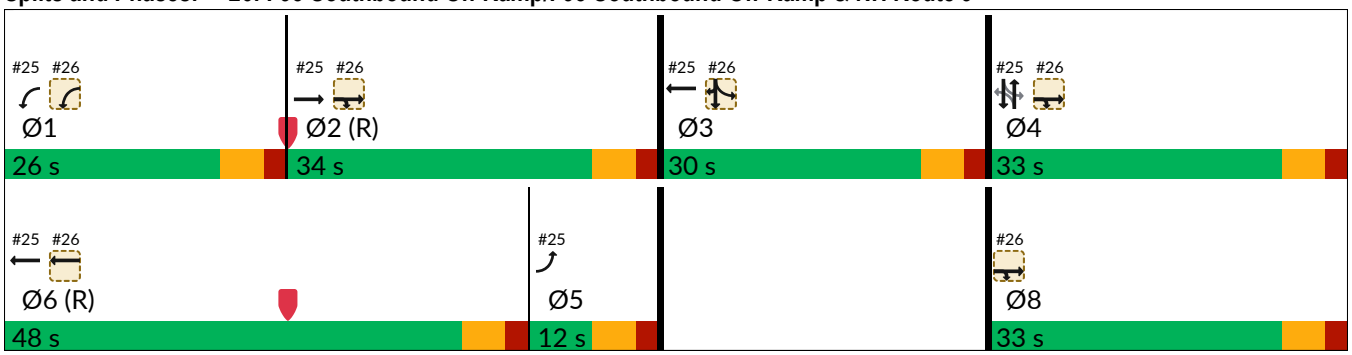
Intersection Summary
Cycle Length: 123

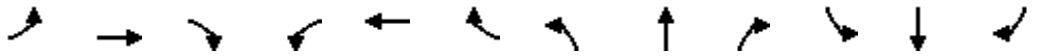
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	34.0	33.0	12.0	33.0
Total Split (%)	28%	27%	10%	27%
Maximum Green (s)	28.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

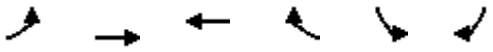




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	726	133	277	831	0	0	0	0	230	0	483
Future Volume (vph)	0	726	133	277	831	0	0	0	0	230	0	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3173	3271						1770	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3173	3271						1770	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	781	143	308	923	0	0	0	0	256	0	537
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	0	0	0	245
Lane Group Flow (vph)	0	781	72	308	923	0	0	0	0	0	256	292
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		57.6	57.6	17.1	55.5						24.3	24.3
Effective Green, g (s)		61.6	61.6	19.1	57.5						26.3	26.3
Actuated g/C Ratio		0.50	0.50	0.16	0.47						0.21	0.21
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2461	898	492	1529						378	338
v/s Ratio Prot		c0.16	0.04	0.10	c0.28						0.14	c0.18
v/s Ratio Perm												
v/c Ratio		0.32	0.08	0.63	0.60						0.68	0.87
Uniform Delay, d1		18.2	16.0	48.6	24.3						44.4	46.6
Progression Factor		0.11	0.01	1.04	0.61						1.00	1.00
Incremental Delay, d2		0.1	0.0	2.4	1.7						4.8	20.0
Delay (s)		2.1	0.2	53.2	16.4						49.2	66.6
Level of Service		A	A	D	B						D	E
Approach Delay (s/veh)		1.8			25.6			0.0			61.0	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

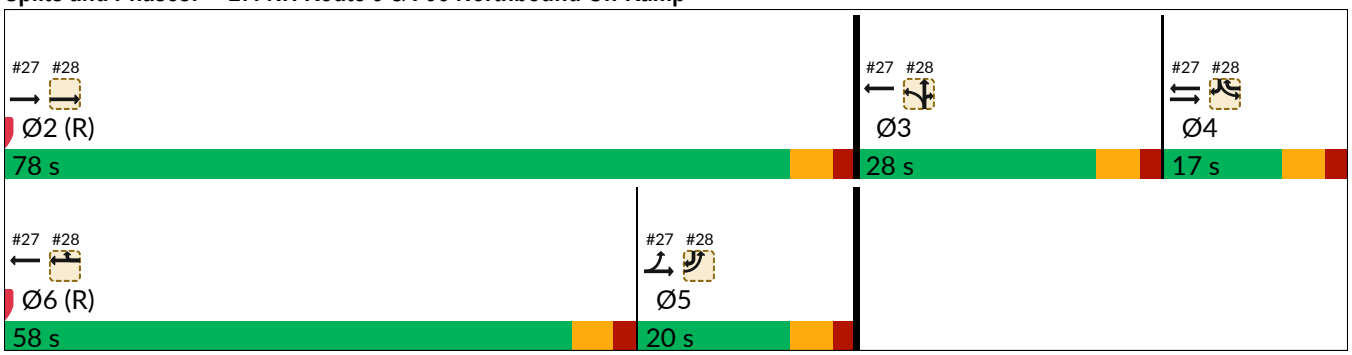


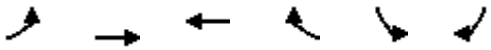
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	153	803	1108	68	0	0				
Future Volume (vph)	153	803	1108	68	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1652	3303	4700	1620	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1652	3303	4700	1620	0	0				
Satd. Flow (RTOR)				54						
Adj. Flow (vph)	170	892	1231	76	0	0				
Lane Group Flow (vph)	170	892	1231	76	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	20.0						78.0	28.0	17.0	58.0
Total Split (%)	16.3%						63%	23%	14%	47%
Maximum Green (s)	14.0						72.0	22.0	11.0	52.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.78	0.37	0.33	0.05						
Control Delay (s/veh)	61.5	6.8	1.6	0.0						
Queue Delay	8.5	0.5	0.2	0.0						
Total Delay (s/veh)	70.0	7.2	1.8	0.0						
Queue Length 50th (ft)	139	111	49	0						
Queue Length 95th (ft)	m#244	128	35	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	219	2458	3848	1620						
Starvation Cap Reductn	27	1013	1587	0						
Spillback Cap Reductn	0	64	357	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.89	0.62	0.54	0.05						

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

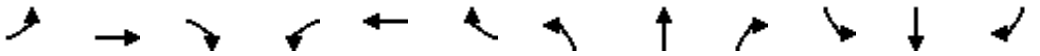




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	153	803	1108	68	0	0
Future Volume (vph)	153	803	1108	68	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	2.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1652	3303	4700	1620		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1652	3303	4700	1620		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	170	892	1231	76	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	170	892	1231	76	0	0
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	14.4	87.8	96.6	123.0		
Effective Green, g (s)	16.4	89.8	98.6	123.0		
Actuated g/C Ratio	0.13	0.73	0.80	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	220	2411	3767	1620		
v/s Ratio Prot	c0.10	c0.27	c0.26			
v/s Ratio Perm				0.05		
v/c Ratio	0.77	0.37	0.33	0.05		
Uniform Delay, d1	51.5	6.1	3.3	0.0		
Progression Factor	0.74	1.04	0.42	1.00		
Incremental Delay, d2	14.7	0.1	0.0	0.0		
Delay (s)	52.7	6.5	1.4	0.0		
Level of Service	D	A	A	A		
Approach Delay (s/veh)		13.9	1.3		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

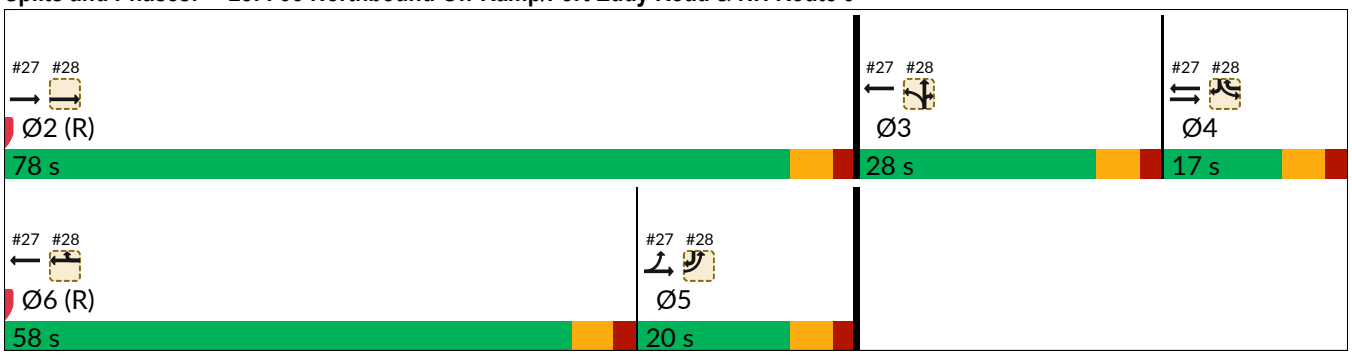


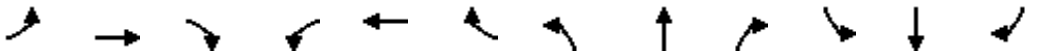
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	690	0	0	777	99	220	144	532	103	0	179
Future Volume (vph)	113	690	0	0	777	99	220	144	532	103	0	179
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.903	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3204	3421	0	0	3455	1652	1752	3032	1474	3367	0	1605
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	3421	0	0	3455	1652	1752	3032	1474	3367	0	1605
Satd. Flow (RTOR)						108		215	215			122
Adj. Flow (vph)	126	767	0	0	845	108	244	160	591	114	0	199
Lane Group Flow (vph)	126	767	0	0	845	108	244	456	295	114	0	199
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Detector Phase	5	2			6	4 6	3	3	3	4		4 5
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Minimum Split (s)	12.0	23.0			32.0		12.0	12.0	12.0	12.0		
Total Split (s)	20.0	78.0			58.0		28.0	28.0	28.0	17.0		
Total Split (%)	16.3%	63.4%			47.2%		22.8%	22.8%	22.8%	13.8%		
Maximum Green (s)	14.0	72.0			52.0		22.0	22.0	22.0	11.0		
Yellow Time (s)	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		
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0	-2.0		
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Recall Mode	None	C-Min			C-Min		None	None	None	None		
Walk Time (s)		7.0			7.0							
Flash Don't Walk (s)		10.0			19.0							
Pedestrian Calls (#/hr)		0			0							
v/c Ratio	0.30	0.38			0.58	0.11	0.68	0.58	0.63	0.31		0.41
Control Delay (s/veh)	32.7	7.2			29.6	4.0	56.6	26.3	19.6	53.2		11.4
Queue Delay	0.0	0.3			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	32.7	7.5			29.6	4.0	56.6	26.3	19.6	53.2		11.4
Queue Length 50th (ft)	47	112			250	1	188	97	61	45		33
Queue Length 95th (ft)	52	176			355	12	#288	158	174	76		78
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	426	2058			1516	1006	358	791	472	370		483
Starvation Cap Reductn	0	663			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.30	0.55			0.56	0.11	0.68	0.58	0.63	0.31		0.41

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

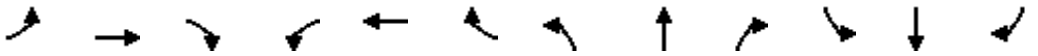




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	690	0	0	777	99	220	144	532	103	0	179
Future Volume (vph)	113	690	0	0	777	99	220	144	532	103	0	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3204	3421			3455	1652	1752	3030	1474	3367		1605
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3204	3421			3455	1652	1752	3030	1474	3367		1605
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	126	767	0	0	845	108	244	160	591	114	0	199
RTOR Reduction (vph)	0	0	0	0	0	47	0	171	171	0	0	92
Lane Group Flow (vph)	126	767	0	0	845	61	244	285	124	114	0	107
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Actuated Green, G (s)	14.4	70.2			49.8	67.4	23.2	23.2	23.2	11.6		26.0
Effective Green, g (s)	16.4	72.2			51.8	69.4	25.2	25.2	25.2	13.6		30.0
Actuated g/C Ratio	0.13	0.59			0.42	0.56	0.20	0.20	0.20	0.11		0.24
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	427	2008			1455	932	358	620	301	372		391
v/s Ratio Prot	0.04	c0.22			c0.24	0.04	c0.14	0.09	0.08	c0.03		0.07
v/s Ratio Perm												
v/c Ratio	0.30	0.38			0.58	0.07	0.68	0.46	0.41	0.31		0.27
Uniform Delay, d1	48.1	13.5			27.3	12.1	45.2	42.9	42.5	50.4		37.7
Progression Factor	0.64	0.50			1.03	1.73	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.5			1.7	0.0	5.3	0.5	0.9	0.5		0.4
Delay (s)	31.1	7.2			29.8	21.0	50.5	43.5	43.4	50.8		38.0
Level of Service	C	A			C	C	D	D	D	D		D
Approach Delay (s/veh)		10.6			28.8			45.2			42.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

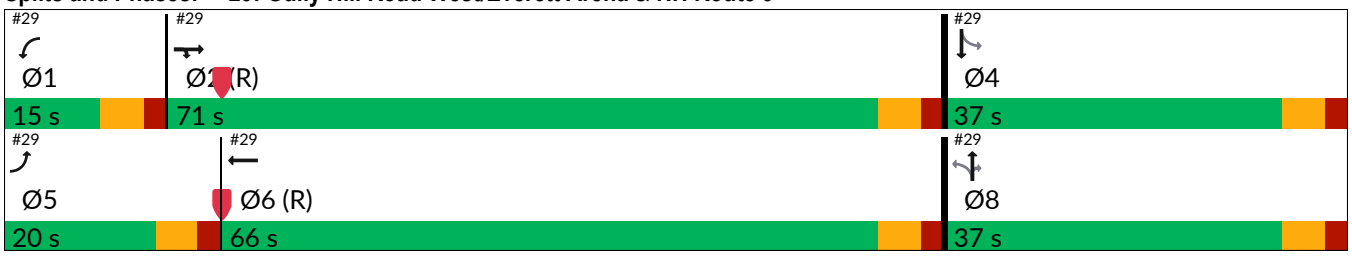


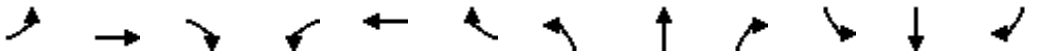
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1175	147	29	833	0	38	0	9	0	1	5
Future Volume (vph)	3	1175	147	29	833	0	38	0	9	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1728	3455	1492	1728	3455	0	0	1752	1620	0	1792	0
Flt Permitted	0.950			0.950				0.748				
Satd. Flow (perm)	1728	3455	1492	1728	3455	0	0	1380	1620	0	1792	0
Satd. Flow (RTOR)			80						80		12	
Adj. Flow (vph)	3	1306	163	31	877	0	44	0	10	0	2	12
Lane Group Flow (vph)	3	1306	163	31	877	0	0	44	10	0	14	0
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0	
Total Split (s)	20.0	71.0	71.0	15.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	16.3%	57.7%	57.7%	12.2%	53.7%		30.1%	30.1%	30.1%	30.1%	30.1%	
Maximum Green (s)	14.0	65.0	65.0	9.0	60.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
v/c Ratio	0.03	0.48	0.14	0.23	0.30			0.34	0.04		0.08	
Control Delay (s/veh)	58.3	5.6	3.0	64.6	2.2			58.6	0.3		26.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	58.3	5.6	3.0	64.6	2.2			58.6	0.3		26.3	
Queue Length 50th (ft)	2	189	12	24	55			34	0		1	
Queue Length 95th (ft)	m6	138	14	63	47			69	0		6	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150								
Base Capacity (vph)	224	2747	1203	158	2928			370	493		489	
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	0.01	0.48	0.14	0.20	0.30			0.12	0.02		0.03	

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 55 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1175	147	29	833	0	38	0	9	0	1	5
Future Volume (vph)	3	1175	147	29	833	0	38	0	9	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	3455			1752	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	3455			1380	1620		1792	
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	3	1306	163	31	877	0	44	0	10	0	2	12
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	9	0	11	0
Lane Group Flow (vph)	3	1306	144	31	877	0	0	44	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.3	91.4	91.4	5.3	95.4			8.3	8.3		8.3	
Effective Green, g (s)	3.3	93.4	93.4	7.3	97.4			10.3	10.3		10.3	
Actuated g/C Ratio	0.03	0.76	0.76	0.06	0.79			0.08	0.08		0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2623	1132	102	2735			115	135		150	
v/s Ratio Prot	0.00	c0.38	0.10	c0.02	c0.25						0.00	
v/s Ratio Perm								c0.03	0.00			
v/c Ratio	0.07	0.50	0.13	0.30	0.32			0.38	0.01		0.02	
Uniform Delay, d1	58.3	5.7	3.9	55.4	3.6			53.3	51.7		51.7	
Progression Factor	1.08	0.78	0.94	1.16	0.61			1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.6	0.2	1.6	0.3			2.1	0.0		0.1	
Delay (s)	63.3	5.1	3.9	65.9	2.5			55.5	51.7		51.8	
Level of Service	E	A	A	E	A			E	D		D	
Approach Delay (s/veh)		5.1			4.6			54.8			51.8	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1162	18	1	46	830	1	32	0	43	1	0
Future Volume (vph)	3	1162	18	1	46	830	1	32	0	43	1	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.998							0.850			
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Satd. Flow (RTOR)		1							543			
Adj. Flow (vph)	3	1291	20	1	51	922	1	34	0	46	4	0
Lane Group Flow (vph)	3	1311	0	0	52	923	0	34	46	0	4	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	15.0	50.0		15.0	15.0	50.0		14.0	15.0		14.0	15.0
Total Split (%)	12.2%	40.7%		12.2%	12.2%	40.7%		11.4%	12.2%		11.4%	12.2%
Maximum Green (s)	9.0	44.0		9.0	9.0	44.0		8.0	9.0		8.0	9.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.03	0.50			0.33	0.32		0.21	0.07		0.03	
Control Delay (s/veh)	69.3	4.7			57.4	3.8		52.4	0.2		54.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	
Total Delay (s/veh)	69.3	4.7			57.4	3.8		52.4	0.2		54.0	
Queue Length 50th (ft)	3	1			40	54		27	0		3	
Queue Length 95th (ft)	m5	104			79	201		57	0		5	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	154	2634			168	2927		170	630		151	
Starvation Cap Reductn	0	40			0	0		0	0		0	
Spillback Cap Reductn	0	0			0	0		0	0		0	
Storage Cap Reductn	0	0			0	0		0	0		0	
Reduced v/c Ratio	0.02	0.51			0.31	0.32		0.20	0.07		0.03	

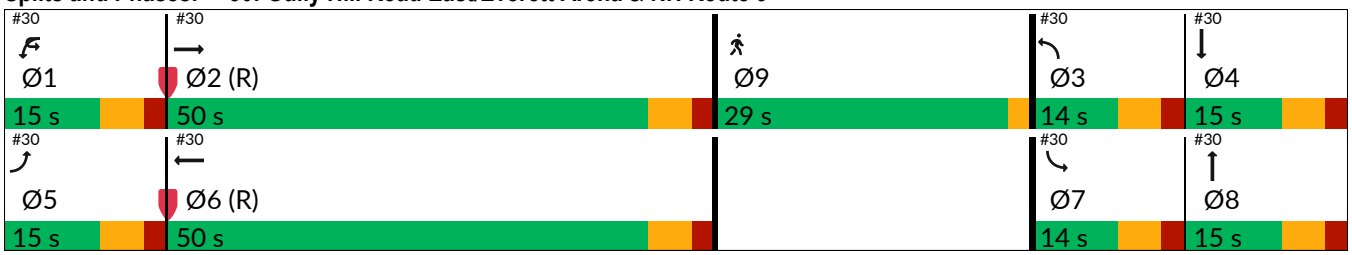
Intersection Summary
Cycle Length: 123

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		24%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 123
Offset: 61 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



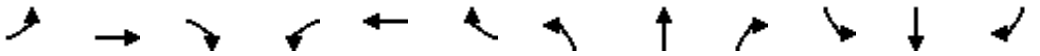
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1162	18	1	46	830	1	32	0	43	1	0
Future Volume (vph)	3	1162	18	1	46	830	1	32	0	43	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	
Frt	1.00	1.00			1.00	1.00		1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (prot)	1728	3447			1728	3455		1703	1524		1865	
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (perm)	1728	3447			1728	3455		1703	1524		1865	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	3	1291	20	1	51	922	1	34	0	46	4	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	3	1311	0	0	52	923	0	34	3	0	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.3	82.7			8.0	89.4		7.1	7.0		1.3	
Effective Green, g (s)	3.3	84.7			10.0	91.4		9.1	9.0		3.3	
Actuated g/C Ratio	0.03	0.69			0.08	0.74		0.07	0.07		0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2373			140	2567		125	111		50	
v/s Ratio Prot	0.00	c0.38			c0.03	0.27		c0.02	c0.00		0.00	
v/s Ratio Perm												
v/c Ratio	0.07	0.55			0.37	0.36		0.27	0.03		0.08	
Uniform Delay, d1	58.3	9.6			53.5	5.5		53.8	52.9		58.4	
Progression Factor	1.28	0.50			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.8			1.7	0.4		1.2	0.1		0.7	
Delay (s)	75.1	5.6			55.2	5.9		55.0	53.1		59.1	
Level of Service	E	A			E	A		D	D		E	
Approach Delay (s/veh)		5.8				8.6			53.9			59.1
Approach LOS		A				A			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

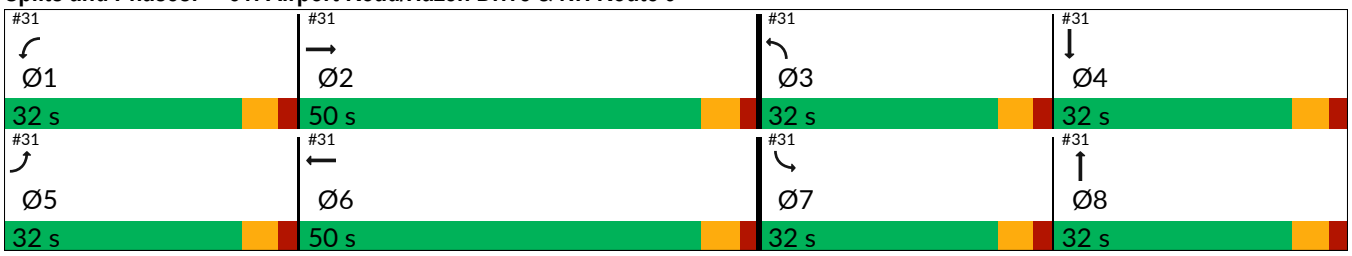


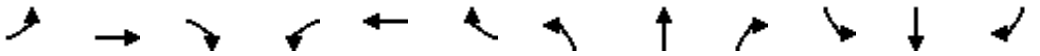
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	603	237	167	681	138	115	136	115	23	132	79
Future Volume (vph)	298	603	237	167	681	138	115	136	115	23	132	79
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			263			157			157			157
Adj. Flow (vph)	331	670	263	180	732	148	128	151	128	26	147	88
Lane Group Flow (vph)	331	670	263	180	732	148	128	151	128	26	147	88
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.74	0.51	0.16	0.59	0.71	0.09	0.52	0.32	0.08	0.18	0.54	0.06
Control Delay (s/veh)	52.0	30.2	0.2	52.5	39.4	0.1	54.1	38.3	0.1	56.1	53.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.0	30.2	0.2	52.5	39.4	0.1	54.1	38.3	0.1	56.1	53.4	0.1
Queue Length 50th (ft)	214	188	0	118	242	0	86	93	0	18	99	0
Queue Length 95th (ft)	#479	327	0	227	364	0	176	180	0	55	198	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	466	1482	1599	466	1480	1652	441	500	1568	437	460	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.45	0.16	0.39	0.49	0.09	0.29	0.30	0.08	0.06	0.32	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 110.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

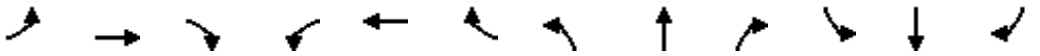




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	603	237	167	681	138	115	136	115	23	132	79
Future Volume (vph)	298	603	237	167	681	138	115	136	115	23	132	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	331	670	263	180	732	148	128	151	128	26	147	88
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	331	670	263	180	732	148	128	151	128	26	147	88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	25.7	39.6	112.6	17.0	30.9	112.6	14.2	27.4	112.6	4.6	17.8	112.6
Effective Green, g (s)	27.7	41.6	112.6	19.0	32.9	112.6	16.2	29.4	112.6	6.6	19.8	112.6
Actuated g/C Ratio	0.25	0.37	1.00	0.17	0.29	1.00	0.14	0.26	1.00	0.06	0.18	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	439	1276	1599	301	1009	1652	243	465	1568	98	310	1501
v/s Ratio Prot	c0.19	0.19		0.10	c0.21		c0.08	0.08		0.02	c0.08	
v/s Ratio Perm			0.16			0.09			0.08			0.06
v/c Ratio	0.75	0.53	0.16	0.60	0.73	0.09	0.53	0.32	0.08	0.27	0.47	0.06
Uniform Delay, d1	39.3	27.8	0.0	43.3	35.8	0.0	44.6	33.6	0.0	50.7	41.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	0.4	0.2	3.2	2.6	0.1	2.1	0.4	0.1	1.5	1.1	0.1
Delay (s)	46.5	28.2	0.2	46.5	38.4	0.1	46.7	34.0	0.1	52.1	42.9	0.1
Level of Service	D	C	A	D	D	A	D	C	A	D	D	A
Approach Delay (s/veh)		27.2			34.4			27.3			29.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	112.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	480	24	8	559	199	94	110	9	182	208	131
Future Volume (vph)	52	480	24	8	559	199	94	110	9	182	208	131
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.993			0.961			0.989			0.945	
Flt Protected	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (prot)	1787	3313	0	1652	3288	0	1652	1719	0	1585	1684	0
Flt Permitted	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (perm)	1787	3313	0	1652	3288	0	1652	1719	0	1585	1684	0
Satd. Flow (RTOR)		3			33			2			17	
Adj. Flow (vph)	58	533	27	9	608	216	104	122	10	202	231	146
Lane Group Flow (vph)	58	560	0	9	824	0	104	132	0	182	397	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.29	0.37		0.06	0.68		0.41	0.50		0.49	0.98	
Control Delay (s/veh)	44.9	18.6		44.4	29.7		42.7	44.2		39.3	77.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.9	18.6		44.4	29.7		42.7	44.2		39.3	77.3	
Queue Length 50th (ft)	34	105		5	223		60	76		105	~255	
Queue Length 95th (ft)	76	202		22	332		115	139		195	#513	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125			130			350		
Base Capacity (vph)	322	1524		298	1209		386	403		370	406	
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	0.18	0.37		0.03	0.68		0.27	0.33		0.49	0.98	

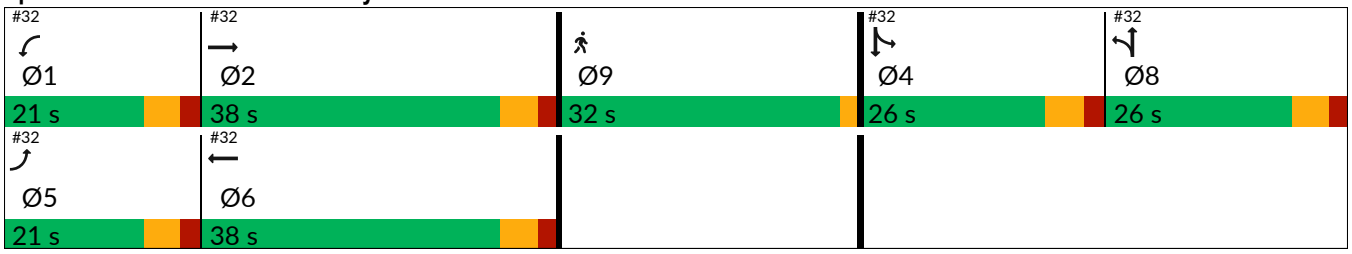
Intersection Summary
Cycle Length: 143

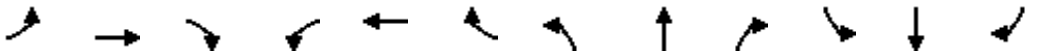
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9

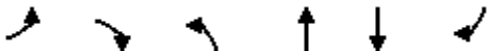




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	480	24	8	559	199	94	110	9	182	208	131
Future Volume (vph)	52	480	24	8	559	199	94	110	9	182	208	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3312		1652	3287		1652	1719		1585	1684	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3312		1652	3287		1652	1719		1585	1684	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	533	27	9	608	216	104	122	10	202	231	146
RTOR Reduction (vph)	0	2	0	0	21	0	0	2	0	0	13	0
Lane Group Flow (vph)	58	558	0	9	803	0	104	130	0	182	384	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	7.2	41.7		1.3	35.8		12.6	12.6		20.2	20.2	
Effective Green, g (s)	9.2	43.7		3.3	37.8		14.6	14.6		22.2	22.2	
Actuated g/C Ratio	0.09	0.44		0.03	0.38		0.15	0.15		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	1450		54	1244		241	251		352	374	
v/s Ratio Prot	c0.03	0.17		0.01	c0.24		0.06	c0.08		0.11	c0.23	
v/s Ratio Perm												
v/c Ratio	0.35	0.39		0.17	0.65		0.43	0.52		0.52	1.03	
Uniform Delay, d1	42.5	19.0		46.9	25.5		38.8	39.4		34.1	38.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.2		1.5	1.2		1.2	1.8		1.3	53.4	
Delay (s)	43.8	19.1		48.4	26.7		40.1	41.2		35.4	92.2	
Level of Service	D	B		D	C		D	D		D	F	
Approach Delay (s/veh)		21.5			26.9			40.7			74.3	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

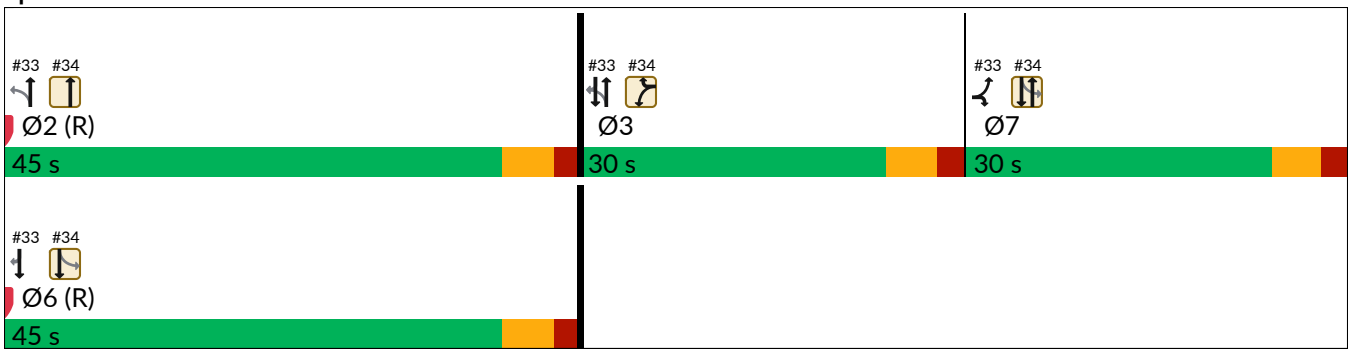


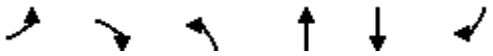
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	116	13	29	326	469	582			
Future Volume (vph)	116	13	29	326	469	582			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	1719	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.938					
Satd. Flow (perm)	1719	1538	0	1673	1881	1546			
Satd. Flow (RTOR)		14				647			
Adj. Flow (vph)	129	14	32	362	521	647			
Lane Group Flow (vph)	129	14	0	394	521	647			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.29	0.03		0.35	0.42	0.52			
Control Delay (s/veh)	34.1	14.5		8.5	9.0	2.9			
Queue Delay	0.0	0.0		0.0	1.6	0.7			
Total Delay (s/veh)	34.1	14.5		8.5	10.6	3.7			
Queue Length 50th (ft)	74	0		103	169	48			
Queue Length 95th (ft)	129	17		154	234	46			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	442	406		1110	1248	1243			
Starvation Cap Reductn	0	0		0	522	293			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.29	0.03		0.35	0.72	0.68			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	116	13	29	326	469	582
Future Volume (vph)	116	13	29	326	469	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1719	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.94	1.00	1.00
Satd. Flow (perm)	1719	1538		1672	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	14	32	362	521	647
RTOR Reduction (vph)	0	10	0	0	0	216
Lane Group Flow (vph)	129	4	0	394	521	431
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	25.1	25.1		67.9	67.9	67.9
Effective Green, g (s)	27.1	27.1		69.9	69.9	69.9
Actuated g/C Ratio	0.26	0.26		0.67	0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	443	396		1113	1252	1029
v/s Ratio Prot	c0.08	0.00			0.28	
v/s Ratio Perm				0.24		c0.28
v/c Ratio	0.29	0.01		0.35	0.42	0.42
Uniform Delay, d1	31.2	29.0		7.7	8.1	8.1
Progression Factor	1.00	1.00		1.00	1.03	3.31
Incremental Delay, d2	0.4	0.0		0.2	0.2	0.2
Delay (s)	31.6	29.0		7.9	8.5	27.1
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	31.4			7.9	18.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

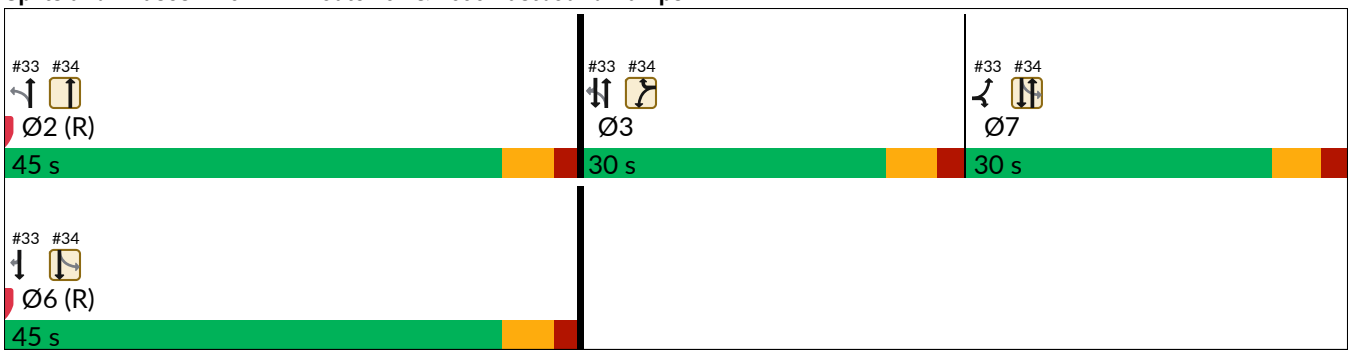
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	295	153	406	55	37	771			
Future Volume (vph)	295	153	406	55	37	771			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.982						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3264	0	1728	1818			
Flt Permitted	0.950				0.449				
Satd. Flow (perm)	1770	1583	3264	0	816	1818			
Satd. Flow (RTOR)		151	31						
Adj. Flow (vph)	328	170	451	61	41	857			
Lane Group Flow (vph)	328	170	512	0	41	857			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.73	0.33	0.23		0.08	0.70			
Control Delay (s/veh)	46.8	9.0	4.7		6.4	14.8			
Queue Delay	0.0	0.0	0.0		0.0	0.0			
Total Delay (s/veh)	46.8	9.0	4.7		6.4	14.8			
Queue Length 50th (ft)	207	10	42		8	318			
Queue Length 95th (ft)	#332	64	57		21	462			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	450	515	2250		559	1247			
Starvation Cap Reductn	0	0	0		0	0			
Spillback Cap Reductn	0	0	0		0	1			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.73	0.33	0.23		0.07	0.69			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

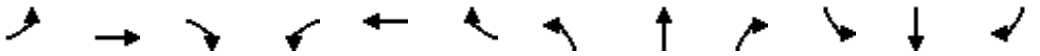


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	295	153	406	55	37	771
Future Volume (vph)	295	153	406	55	37	771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3264		1728	1818
Flt Permitted	0.95	1.00	1.00		0.45	1.00
Satd. Flow (perm)	1770	1583	3264		817	1818
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	328	170	451	61	41	857
RTOR Reduction (vph)	0	113	10	0	0	0
Lane Group Flow (vph)	328	57	502	0	41	857
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	24.7	24.7	68.3		68.3	68.3
Effective Green, g (s)	26.7	26.7	70.3		70.3	70.3
Actuated g/C Ratio	0.25	0.25	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	450	402	2185		547	1217
v/s Ratio Prot	c0.19	0.04	0.15			c0.47
v/s Ratio Perm					0.05	
v/c Ratio	0.73	0.14	0.23		0.07	0.70
Uniform Delay, d1	35.8	30.3	6.8		6.0	10.8
Progression Factor	1.00	1.00	0.70		1.00	1.00
Incremental Delay, d2	5.8	0.2	0.1		0.1	1.9
Delay (s)	41.7	30.5	4.8		6.1	12.7
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	37.8		4.8			12.4
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

2037 No-Build Weekday Evening Peak-Hour

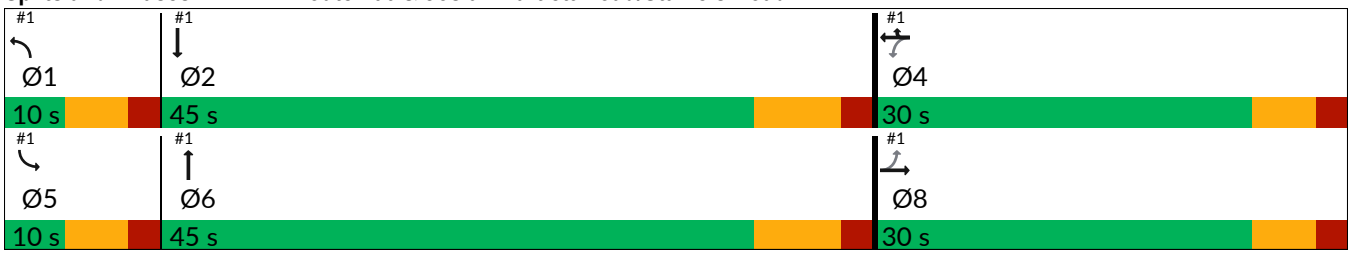


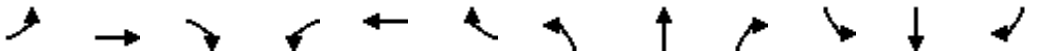
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	5	76	1	69	1	1221	144	34	627	7
Future Volume (vph)	0	2	5	76	1	69	1	1221	144	34	627	7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.899				0.850		0.984			0.998	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	1642	0	0	1811	1583	1787	3517	0	1770	3532	0
Flt Permitted					0.723		0.950			0.950		
Satd. Flow (perm)	0	1642	0	0	1374	1583	1787	3517	0	1770	3532	0
Satd. Flow (RTOR)		6				135		20			2	
Adj. Flow (vph)	0	2	6	84	1	77	1	1299	153	37	674	8
Lane Group Flow (vph)	0	8	0	0	85	77	1	1452	0	37	682	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.34	0.19	0.01	0.62		0.31	0.27	
Control Delay (s/veh)		16.9			29.4	2.3	33.0	11.6		40.3	5.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.9			29.4	2.3	33.0	11.6		40.3	5.8	
Queue Length 50th (ft)		1			33	0	0	224		16	47	
Queue Length 95th (ft)		12			72	9	5	346		#47	126	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		717			597	764	119	2329		118	2531	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.14	0.10	0.01	0.62		0.31	0.27	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 63.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

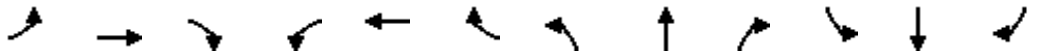
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	5	76	1	69	1	1221	144	34	627	7
Future Volume (vph)	0	2	5	76	1	69	1	1221	144	34	627	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.90			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1642			1811	1583	1787	3518		1770	3533	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1374	1583	1787	3518		1770	3533	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	2	6	84	1	77	1	1299	153	37	674	8
RTOR Reduction (vph)	0	5	0	0	0	66	0	8	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	85	11	1	1444	0	37	681	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.6			7.6	7.6	0.7	40.0		2.1	41.4	
Effective Green, g (s)		9.6			9.6	9.6	0.7	42.0		2.1	43.4	
Actuated g/C Ratio		0.14			0.14	0.14	0.01	0.61		0.03	0.63	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		227			190	219	18	2135		53	2215	
v/s Ratio Prot		0.00				0.01	0.00	c0.41		c0.02	0.19	
v/s Ratio Perm					c0.06							
v/c Ratio		0.01			0.45	0.05	0.06	0.68		0.70	0.31	
Uniform Delay, d1		25.7			27.4	25.8	33.9	9.1		33.2	6.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.7	0.1	1.3	0.9		33.1	0.1	
Delay (s)		25.7			29.0	25.9	35.2	9.9		66.3	6.0	
Level of Service		C			C	C	D	A		E	A	
Approach Delay (s/veh)		25.7			27.6			9.9			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	15.5
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

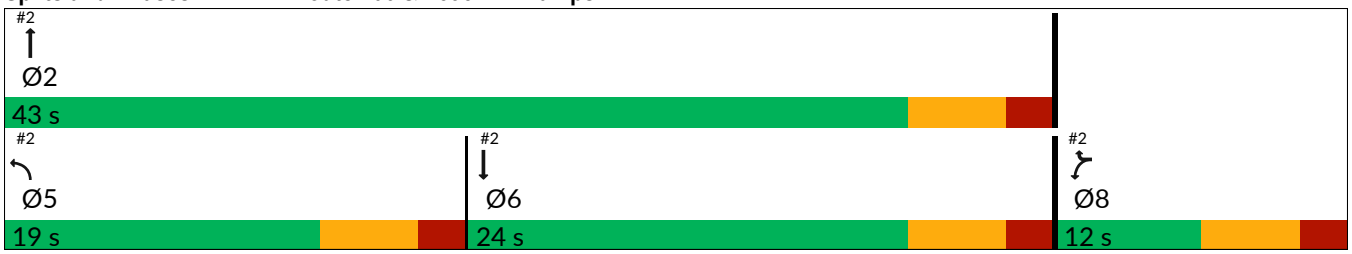


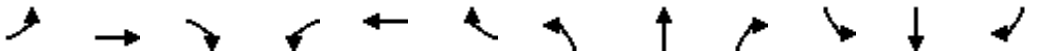
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	8	0	17	666	1656	0	0	447	479
Future Volume (vph)	0	0	0	8	0	17	666	1656	0	0	447	479
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Satd. Flow (RTOR)						179						499
Adj. Flow (vph)	0	0	0	9	0	19	701	1743	0	0	466	499
Lane Group Flow (vph)	0	0	0	9	0	19	701	1743	0	0	466	499
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.03		0.04	0.59	0.57			0.38	0.33
Control Delay (s/veh)				19.6		0.2	16.6	3.5			11.9	0.6
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.6		0.2	16.6	3.5			11.9	0.6
Queue Length 50th (ft)				2		0	56	0			34	0
Queue Length 95th (ft)				13		0	#166	186			91	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				376		468	1294	3084			1744	1531
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		0.04	0.54	0.57			0.27	0.33

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 42.1
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

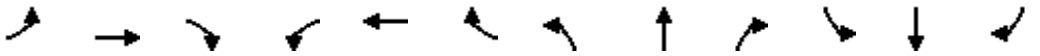




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	8	0	17	666	1656	0	0	447	479
Future Volume (vph)	0	0	0	8	0	17	666	1656	0	0	447	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1847		1599	3385	3490			3421	1531
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1847		1599	3385	3490			3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	9	0	19	701	1743	0	0	466	499
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	9	0	2	701	1743	0	0	466	499
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.8		1.8	12.6	32.0			13.4	45.8
Effective Green, g (s)				3.8		3.8	14.6	34.0			15.4	45.8
Actuated g/C Ratio				0.08		0.08	0.32	0.74			0.34	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				153		132	1079	2590			1150	1531
v/s Ratio Prot				0.00		0.00	0.21	c0.50			0.14	
v/s Ratio Perm												c0.33
v/c Ratio				0.06		0.01	0.65	0.67			0.41	0.33
Uniform Delay, d1				19.4		19.3	13.4	3.0			11.7	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		0.0	1.4	0.7			0.2	0.6
Delay (s)				19.5		19.3	14.8	3.7			11.9	0.6
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			19.4			6.9			6.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

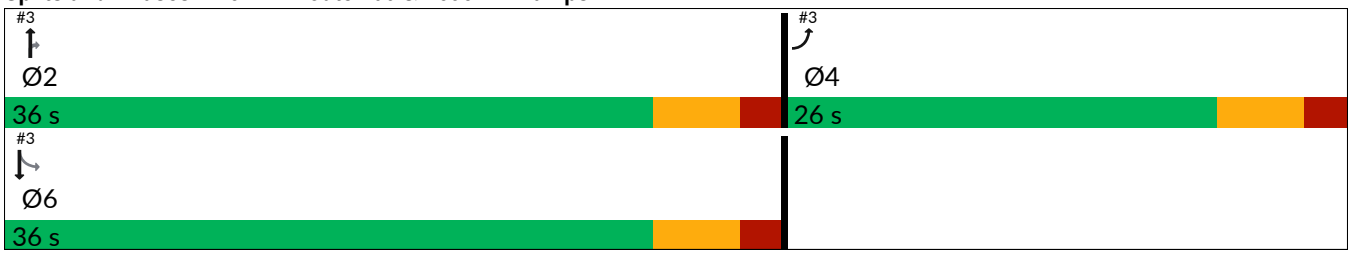


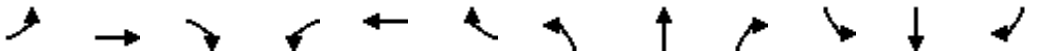
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	953	0	809	0	0	0	0	1369	9	9	446	0
Future Volume (vph)	953	0	809	0	0	0	0	1369	9	9	446	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.916	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3197	0
Satd. Flow (RTOR)			817						53			
Adj. Flow (vph)	963	0	817	0	0	0	0	1504	10	10	496	0
Lane Group Flow (vph)	963	0	817	0	0	0	0	1504	10	0	506	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.80		0.29					0.84	0.01		0.31	
Control Delay (s/veh)	23.9		0.3					18.4	0.0		9.1	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	23.9		0.3					18.4	0.0		9.1	
Queue Length 50th (ft)	163		0					235	0		52	
Queue Length 95th (ft)	230		0					#332	0		80	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1263		2814					1831	844		1694	
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		0.29					0.82	0.01		0.30	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 60.5
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

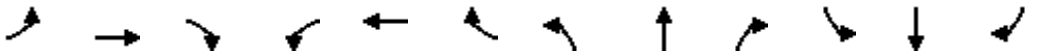




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	953	0	809	0	0	0	0	1369	9	9	446	0
Future Volume (vph)	953	0	809	0	0	0	0	1369	9	9	446	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3486	
Flt Permitted	0.95		1.00					1.00	1.00		0.92	
Satd. Flow (perm)	3467		2814					3455	1546		3198	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	963	0	817	0	0	0	0	1504	10	10	496	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	5	0	0	0
Lane Group Flow (vph)	963	0	817	0	0	0	0	1504	5	0	506	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	19.1		60.5					29.4	29.4		29.4	
Effective Green, g (s)	21.1		60.5					31.4	31.4		31.4	
Actuated g/C Ratio	0.35		1.00					0.52	0.52		0.52	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1209		2814					1793	802		1659	
v/s Ratio Prot	c0.28							c0.44				
v/s Ratio Perm			0.29						0.00		0.16	
v/c Ratio	0.80		0.29					0.84	0.01		0.31	
Uniform Delay, d1	17.8		0.0					12.4	7.0		8.3	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	3.7		0.3					3.6	0.0		0.1	
Delay (s)	21.5		0.3					16.0	7.0		8.4	
Level of Service	C		A					B	A		A	
Approach Delay (s/veh)		11.7			0.0			16.0			8.4	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

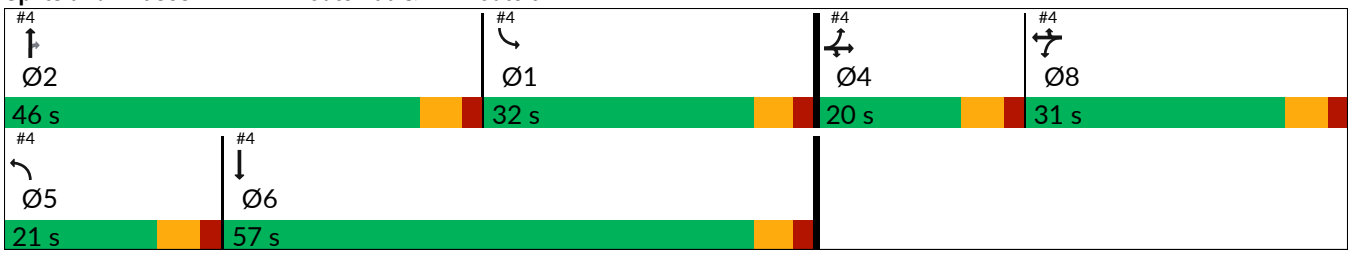


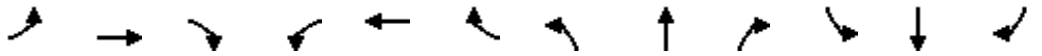
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	333	58	270	244	54	58	813	497	98	690	468
Future Volume (vph)	511	333	58	270	244	54	58	813	497	98	690	468
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.985		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1557	3228	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.985		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1557	3228	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			546			395
Adj. Flow (vph)	562	366	64	300	271	60	64	893	546	108	758	514
Lane Group Flow (vph)	562	366	64	186	385	60	64	893	546	108	758	514
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	1.09	1.31	0.16	0.60	0.60	0.13	0.34	0.72	0.60	0.47	0.53	0.28
Control Delay (s/veh)	110.9	201.6	0.9	48.7	43.6	0.6	52.1	33.9	5.5	51.4	26.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (s/veh)	110.9	201.6	0.9	48.7	43.6	0.6	52.1	33.9	5.5	51.4	26.8	0.4
Queue Length 50th (ft)	~240	~344	0	135	139	0	43	272	0	72	209	0
Queue Length 95th (ft)	#400	#593	0	229	203	0	91	401	81	135	309	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	514	279	388	403	836	528	281	1393	949	464	1757	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	260	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.31	0.16	0.46	0.46	0.11	0.23	0.64	0.58	0.23	0.51	0.28

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 105.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	333	58	270	244	54	58	813	497	98	690	468
Future Volume (vph)	511	333	58	270	244	54	58	813	497	98	690	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1557	3229	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1557	3229	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	562	366	64	300	271	60	64	893	546	108	758	514
RTOR Reduction (vph)	0	0	54	0	0	48	0	0	352	0	0	0
Lane Group Flow (vph)	562	366	10	186	385	12	64	893	194	108	758	514
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.2	14.2	14.2	19.1	19.1	19.1	7.9	36.1	36.1	13.6	41.8	107.0
Effective Green, g (s)	16.2	16.2	16.2	21.1	21.1	21.1	9.9	38.1	38.1	15.6	43.8	107.0
Actuated g/C Ratio	0.15	0.15	0.15	0.20	0.20	0.20	0.09	0.36	0.36	0.15	0.41	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	507	275	234	307	636	301	159	1230	550	251	1414	1812
v/s Ratio Prot	0.17	c0.20	0.01	c0.12	0.12	0.01	0.04	c0.26		0.06	c0.22	
v/s Ratio Perm									0.13			0.28
v/c Ratio	1.11	1.33	0.04	0.61	0.61	0.04	0.40	0.73	0.35	0.43	0.54	0.28
Uniform Delay, d1	45.4	45.4	38.8	39.2	39.2	34.7	45.8	29.9	25.4	41.6	23.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.1	171.7	0.1	3.4	1.6	0.1	1.7	2.2	0.4	1.2	0.4	0.4
Delay (s)	118.5	217.1	38.8	42.5	40.8	34.8	47.4	32.1	25.8	42.8	24.3	0.4
Level of Service	F	F	D	D	D	C	D	C	C	D	C	A
Approach Delay (s/veh)		149.7			40.7			30.4			16.8	
Approach LOS		F			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	46.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1	15	73	1	159	11	857	20	98	800	5
Future Vol, veh/h	4	1	15	73	1	159	11	857	20	98	800	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	32	32	32	85	85	85	90	90	90	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	3	3	3
Mvmt Flow	13	3	47	86	1	187	12	952	22	100	816	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1996	2018	819	1995	1998	952	821	0	0	974	0	0
Stage 1	1019	1019	-	977	977	-	-	-	-	-	-	-
Stage 2	977	999	-	1018	1021	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.13	-	-
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	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	45	59	379	~ 46	61	317	812	-	-	704	-	-
Stage 1	288	317	-	304	332	-	-	-	-	-	-	-
Stage 2	304	324	-	289	316	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	15	50	379	~ 32	51	317	812	-	-	704	-	-
Mov Cap-2 Maneuver	15	50	-	~ 32	51	-	-	-	-	-	-	-
Stage 1	247	272	-	300	327	-	-	-	-	-	-	-
Stage 2	123	319	-	215	271	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	126.53	$ 344.69	0.12	1.19
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	812	-	-	18	379	32	317	704	-	-
HCM Lane V/C Ratio	0.015	-	-	0.871	0.124	2.688	0.59	0.142	-	-
HCM Ctrl Dly (s/v)	9.5	-	-	$ 458.6	15.8	$ 1027	31.4	11	-	-
HCM Lane LOS	A	-	-	F	C	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2.3	0.4	10	3.5	0.5	-	-

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

Intersection	
Int Delay, s/veh	9.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	144	148	1136	753	135
Future Vol, veh/h	37	144	148	1136	753	135
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	90	90	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	39	150	164	1262	793	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2384	793	935	0	-	0
Stage 1	793	-	-	-	-	-
Stage 2	1591	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 38	390	737	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 29	390	737	-	-	-
Mov Cap-2 Maneuver	~ 29	-	-	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	185	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	112.7	1.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	737	-	29	390	-	-
HCM Lane V/C Ratio	0.223	-	1.309	0.384	-	-
HCM Ctrl Dly (s/v)	11.3	-	$ 474	19.9	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.9	-	4.4	1.8	-	-

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

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	19	22	1251	851	46
Future Vol, veh/h	33	19	22	1251	851	46
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	90	90	92	92
Heavy Vehicles, %	0	0	1	1	3	3
Mvmt Flow	38	22	24	1390	925	50

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2364	925	975	0	-	0
Stage 1	925	-	-	-	-	-
Stage 2	1439	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	39	329	711	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	221	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	38	329	711	-	-	-
Mov Cap-2 Maneuver	38	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	221	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	198.07	0.18	0
HCM LOS	F		

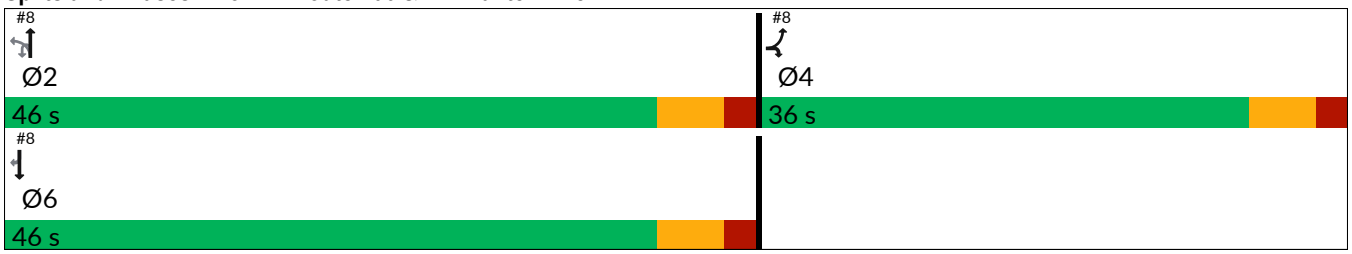
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	711	-	38	329	-	-
HCM Lane V/C Ratio	0.034	-	0.988	0.066	-	-
HCM Ctrl Dly (s/v)	10.2	-	$ 302.5	16.7	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	3.7	0.2	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	314	91	1	184	959	652	218
Future Volume (vph)	314	91	1	184	959	652	218
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1711	1863	1783	1568
Flt Permitted	0.950			0.266			
Satd. Flow (perm)	1745	1561	0	479	1863	1783	1568
Satd. Flow (RTOR)		92					237
Adj. Flow (vph)	317	92	1	204	1066	709	237
Lane Group Flow (vph)	317	92	0	205	1066	709	237
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.65	0.18		0.71	0.95	0.66	0.23
Control Delay (s/veh)	28.6	5.4		29.1	33.1	14.0	1.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.6	5.4		29.1	33.1	14.0	1.9
Queue Length 50th (ft)	118	0		54	379	180	0
Queue Length 95th (ft)	194	29		#206	#812	386	30
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	795	761		290	1128	1080	1043
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	0.40	0.12		0.71	0.95	0.66	0.23

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 70.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	314	91	1	184	959	652	218
Future Volume (vph)	314	91	1	184	959	652	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1711	1863	1783	1568
Flt Permitted	0.95	1.00		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		479	1863	1783	1568
Peak-hour factor, PHF	0.99	0.99	0.90	0.90	0.90	0.92	0.92
Adj. Flow (vph)	317	92	1	204	1066	709	237
RTOR Reduction (vph)	0	66	0	0	0	0	93
Lane Group Flow (vph)	317	26	0	205	1066	709	144
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	17.7	17.7		40.7	40.7	40.7	40.7
Effective Green, g (s)	19.7	19.7		42.7	42.7	42.7	42.7
Actuated g/C Ratio	0.28	0.28		0.61	0.61	0.61	0.61
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	488	436		290	1129	1081	951
v/s Ratio Prot	c0.18	0.02			c0.57	0.40	
v/s Ratio Perm				0.43			0.09
v/c Ratio	0.65	0.06		0.71	0.94	0.66	0.15
Uniform Delay, d1	22.3	18.6		9.5	12.8	9.0	6.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.1		7.6	15.2	1.4	0.1
Delay (s)	25.3	18.6		17.2	27.9	10.5	6.1
Level of Service	C	B		B	C	B	A
Approach Delay (s/veh)	23.8				26.2	9.4	
Approach LOS	C				C	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	25.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	186	187	1126	807	37
Future Vol, veh/h	17	186	187	1126	807	37
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	207	205	1237	877	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2526	877	917	0	-	0
Stage 1	877	-	-	-	-	-
Stage 2	1648	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	31	349	748	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	22	349	748	-	-	-
Mov Cap-2 Maneuver	22	-	-	-	-	-
Stage 1	296	-	-	-	-	-
Stage 2	173	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	283.53	1.66	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	748	-	157	-	-
HCM Lane V/C Ratio	0.275	-	1.439	-	-
HCM Ctrl Dly (s/v)	11.6	-	283.5	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.1	-	14.5	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	382	381	21	23	22
Future Vol, veh/h	24	382	381	21	23	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	94	94	72	72
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	26	415	405	22	32	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	428	0	-	0	676	416
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	260	-
Critical Hdwy	4.115	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2095	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1136	-	-	-	406	641
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1136	-	-	-	397	641
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	766	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.49	0	12.93
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1136	-	-	-	397	641
HCM Lane V/C Ratio	0.023	-	-	-	0.08	0.048
HCM Ctrl Dly (s/v)	8.2	-	-	-	14.9	10.9
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.1

Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	279	85	120	283	130	127
Future Vol, veh/h	279	85	120	283	130	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	310	94	132	311	135	132

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	404	0	932	202
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	575	-
Critical Hdwy	-	-	4.115	-	6.615	6.915
Critical Hdwy Stg 1	-	-	-	-	5.815	-
Critical Hdwy Stg 2	-	-	-	-	5.415	-
Follow-up Hdwy	-	-	2.2095	-	3.5095	3.3095
Pot Cap-1 Maneuver	-	-	1159	-	282	808
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	564	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1159	-	250	808
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	564	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.53	22.95
HCM LOS			C

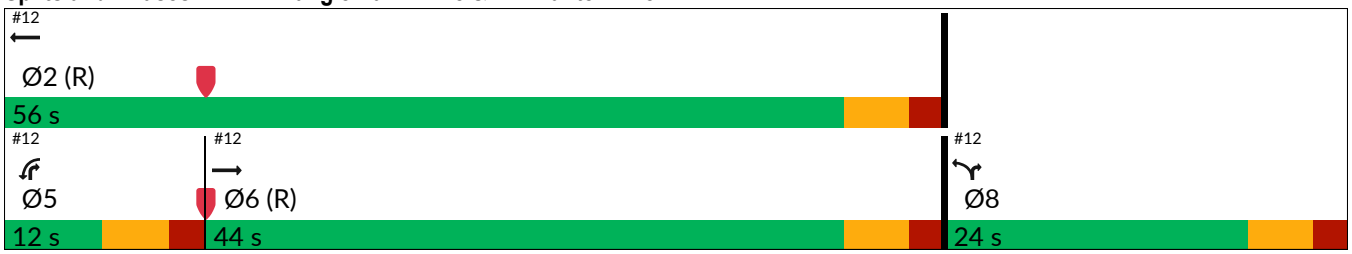
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	250	808	-	-	1159	-
HCM Lane V/C Ratio	0.542	0.164	-	-	0.114	-
HCM Ctrl Dly (s/v)	35.3	10.3	-	-	8.5	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	2.9	0.6	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	296	127	54	359	118	68
Future Volume (vph)	296	127	54	359	118	68
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.955					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3300	0	1728	1881	1787	1599
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3300	0	1728	1881	1787	1599
Satd. Flow (RTOR)	120					76
Adj. Flow (vph)	329	141	60	399	131	76
Lane Group Flow (vph)	470	0	60	399	131	76
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	44.0		12.0	56.0	24.0	
Total Split (%)	55.0%		15.0%	70.0%	30.0%	
Maximum Green (s)	38.0		6.0	50.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		None	C-Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.24		0.27	0.29	0.45	0.13
Control Delay (s/veh)	6.1		34.0	4.6	34.3	4.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.1		34.0	4.6	34.3	4.4
Queue Length 50th (ft)	25		28	53	60	0
Queue Length 95th (ft)	53		60	107	105	23
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2007		222	1383	446	592
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	0.23		0.27	0.29	0.29	0.13

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

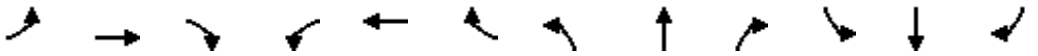
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	296	127	54	359	118	68
Future Volume (vph)	296	127	54	359	118	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3300		1728	1881	1787	1599
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3300		1728	1881	1787	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	329	141	60	399	131	76
RTOR Reduction (vph)	51	0	0	0	0	51
Lane Group Flow (vph)	419	0	60	399	131	25
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	43.8		7.1	56.9	11.1	24.2
Effective Green, g (s)	45.8		9.1	58.9	13.1	26.2
Actuated g/C Ratio	0.57		0.11	0.74	0.16	0.33
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1889		196	1384	292	523
v/s Ratio Prot	0.13		0.03	c0.21	c0.07	0.02
v/s Ratio Perm						
v/c Ratio	0.22		0.31	0.29	0.45	0.05
Uniform Delay, d1	8.4		32.6	3.5	30.2	18.4
Progression Factor	0.80		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3		0.9	0.5	1.1	0.0
Delay (s)	7.0		33.4	4.1	31.3	18.4
Level of Service	A		C	A	C	B
Approach Delay (s/veh)	7.0			7.9	26.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

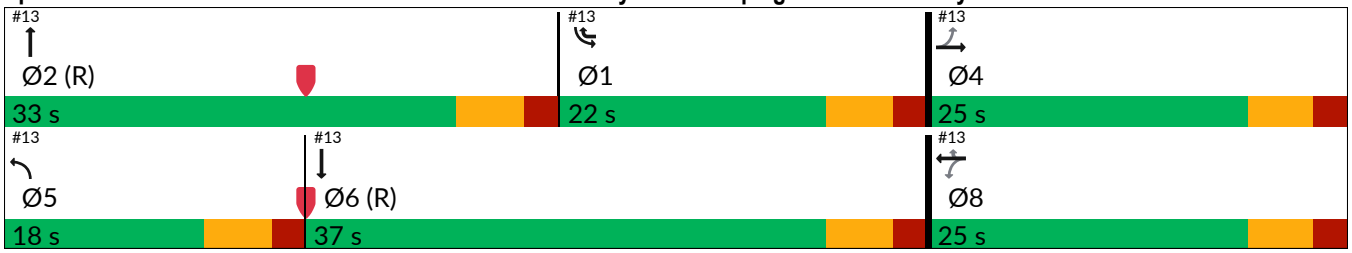


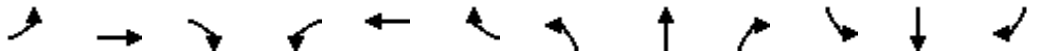
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	2	41	7	6	33	43	444	23	43	450	48
Future Volume (vph)	94	2	41	7	6	33	43	444	23	43	450	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.955				0.850		0.993			0.986	
Flt Protected		0.967			0.973		0.950			0.950		
Satd. Flow (prot)	0	3334	0	0	1910	1669	1787	3431	0	3351	3407	0
Flt Permitted		0.782			0.793		0.950			0.950		
Satd. Flow (perm)	0	2696	0	0	1557	1669	1787	3431	0	3351	3407	0
Satd. Flow (RTOR)		44				123		7			17	
Adj. Flow (vph)	101	2	44	11	9	51	46	472	24	48	500	53
Lane Group Flow (vph)	0	147	0	0	20	51	46	496	0	48	553	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	25.0	25.0		25.0	25.0	22.0	18.0	33.0		22.0	37.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%	27.5%	22.5%	41.3%		27.5%	46.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	16.0	12.0	27.0		16.0	31.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.38			0.10	0.08	0.22	0.25		0.09	0.25	
Control Delay (s/veh)		24.3			30.3	0.2	36.3	7.1		27.9	7.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.3			30.3	0.2	36.3	7.1		27.9	7.3	
Queue Length 50th (ft)		24			9	0	22	46		10	60	
Queue Length 95th (ft)		50			19	0	48	73		24	105	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		740			408	668	312	2021		753	2251	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.20			0.05	0.08	0.15	0.25		0.06	0.25	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	2	41	7	6	33	43	444	23	43	450	48
Future Volume (vph)	94	2	41	7	6	33	43	444	23	43	450	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95		0.97	0.95	
Frt		0.96			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3333			1911	1669	1787	3430		3351	3405	
Flt Permitted		0.78			0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2697			1557	1669	1787	3430		3351	3405	
Peak-hour factor, PHF	0.93	0.93	0.93	0.65	0.65	0.65	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	101	2	44	11	9	51	46	472	24	48	500	53
RTOR Reduction (vph)	0	38	0	0	0	36	0	3	0	0	6	0
Lane Group Flow (vph)	0	109	0	0	20	15	46	493	0	48	547	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		8.5			8.5	19.3	5.2	42.7		10.8	48.3	
Effective Green, g (s)		10.5			10.5	23.3	7.2	44.7		12.8	50.3	
Actuated g/C Ratio		0.13			0.13	0.29	0.09	0.56		0.16	0.63	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		353			204	569	160	1916		536	2140	
v/s Ratio Prot						0.00	0.03	c0.14		0.01	c0.16	
v/s Ratio Perm		c0.04			0.01	0.00						
v/c Ratio		0.31			0.10	0.03	0.29	0.26		0.09	0.26	
Uniform Delay, d1		31.5			30.6	20.2	34.0	9.1		28.6	6.6	
Progression Factor		1.00			1.00	1.00	1.09	0.72		1.00	1.00	
Incremental Delay, d2		0.5			0.2	0.0	1.0	0.3		0.1	0.3	
Delay (s)		32.0			30.8	20.3	37.9	6.8		28.7	6.9	
Level of Service		C			C	C	D	A		C	A	
Approach Delay (s/veh)		32.0			23.2			9.5			8.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

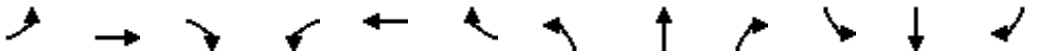
Intersection	
Int Delay, s/veh	0.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	67	1007	131	19	1020
Future Vol, veh/h	0	67	1007	131	19	1020
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	85	85	90	90	93	93
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	79	1119	146	20	1097

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1781	632	0	0	1264	0
Stage 1	1192	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	75	428	-	-	551	-
Stage 1	255	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	72	428	-	-	551	-
Mov Cap-2 Maneuver	72	-	-	-	-	-
Stage 1	245	-	-	-	-	-
Stage 2	523	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	15.3	0	0.22
HCM LOS	C		

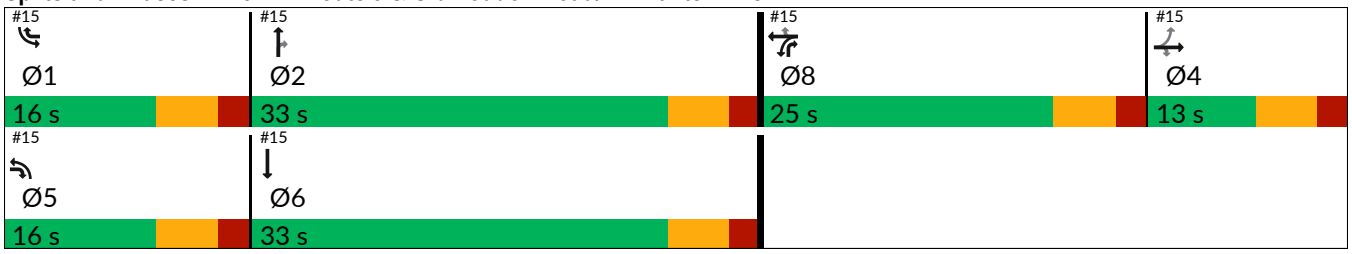
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	428	551	-
HCM Lane V/C Ratio	-	-	0.184	0.037	-
HCM Ctrl Dly (s/v)	-	-	15.3	11.8	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

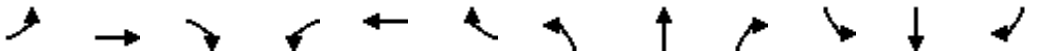


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	45	88	355	90	126	109	579	386	110	596	16
Future Volume (vph)	15	45	88	355	90	126	109	579	386	110	596	16
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.987		0.950	0.971		0.950			0.950		
Satd. Flow (prot)	0	1813	1561	1641	1735	1492	1787	3455	1599	3467	3441	0
Flt Permitted		0.829		0.950	0.971		0.950			0.950		
Satd. Flow (perm)	0	1523	1561	1641	1735	1492	1787	3455	1599	3467	3441	0
Satd. Flow (RTOR)			113			140			429		3	
Adj. Flow (vph)	17	50	98	394	100	140	121	643	429	118	641	17
Lane Group Flow (vph)	0	67	98	244	250	140	121	643	429	118	658	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	16.0	25.0	25.0	16.0	16.0	33.0	25.0	16.0	33.0	
Total Split (%)	14.9%	14.9%	18.4%	28.7%	28.7%	18.4%	18.4%	37.9%	28.7%	18.4%	37.9%	
Maximum Green (s)	7.0	7.0	10.0	19.0	19.0	10.0	10.0	27.0	19.0	10.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.36	0.19	0.60	0.58	0.20	0.45	0.59	0.37	0.25	0.54	
Control Delay (s/veh)		41.2	5.0	34.3	33.3	2.8	39.0	25.1	1.7	34.2	24.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		41.2	5.0	34.3	33.3	2.8	39.0	25.1	1.7	34.2	24.3	
Queue Length 50th (ft)		33	0	116	118	0	58	145	0	29	155	
Queue Length 95th (ft)		76	29	209	211	23	117	206	32	55	211	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		195	546	493	521	733	306	1433	1214	595	1429	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.34	0.18	0.49	0.48	0.19	0.40	0.45	0.35	0.20	0.46	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 74.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

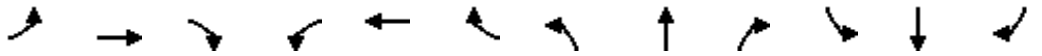




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	45	88	355	90	126	109	579	386	110	596	16
Future Volume (vph)	15	45	88	355	90	126	109	579	386	110	596	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1814	1561	1641	1735	1492	1787	3455	1599	3467	3442	
Flt Permitted		0.83	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1523	1561	1641	1735	1492	1787	3455	1599	3467	3442	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	17	50	98	394	100	140	121	643	429	118	641	17
RTOR Reduction (vph)	0	0	77	0	0	88	0	0	186	0	2	0
Lane Group Flow (vph)	0	67	21	244	250	52	121	643	243	118	656	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.1	12.2	16.4	16.4	24.6	7.1	23.2	39.6	8.2	24.3	
Effective Green, g (s)		7.1	16.2	18.4	18.4	28.6	9.1	25.2	43.6	10.2	26.3	
Actuated g/C Ratio		0.09	0.21	0.24	0.24	0.37	0.12	0.33	0.57	0.13	0.34	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		140	410	392	415	554	211	1132	989	459	1177	
v/s Ratio Prot			0.01	c0.15	0.14	0.01	c0.07	0.19	0.06	0.03	c0.19	
v/s Ratio Perm		c0.04	0.01			0.02			0.09			
v/c Ratio		0.48	0.05	0.62	0.60	0.09	0.57	0.57	0.25	0.26	0.56	
Uniform Delay, d1		33.1	24.2	26.1	26.0	15.7	32.1	21.4	8.4	29.9	20.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.6	0.1	3.1	2.5	0.1	3.7	0.7	0.1	0.3	0.6	
Delay (s)		35.7	24.3	29.2	28.5	15.8	35.8	22.0	8.5	30.2	21.1	
Level of Service		D	C	C	C	B	D	C	A	C	C	
Approach Delay (s/veh)		28.9			26.0			18.6			22.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	5	79	19	5	18	75	622	23	17	627	65
Future Volume (vph)	87	5	79	19	5	18	75	622	23	17	627	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.995			0.986	
Flt Protected		0.955			0.961		0.950			0.950		
Satd. Flow (prot)	0	1814	1615	0	1887	1669	1847	3438	0	1787	3407	0
Flt Permitted		0.719			0.745		0.950			0.950		
Satd. Flow (perm)	0	1366	1615	0	1463	1669	1847	3438	0	1787	3407	0
Satd. Flow (RTOR)			62			41		5			14	
Adj. Flow (vph)	97	6	88	21	5	20	80	662	24	19	697	72
Lane Group Flow (vph)	0	103	88	0	26	20	80	686	0	19	769	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	30.0		25.0	30.0	
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	37.5%		31.3%	37.5%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	19.0	24.0		19.0	24.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46	0.16		0.11	0.04	0.32	0.29		0.10	0.36	
Control Delay (s/veh)		35.8	6.8		27.4	2.2	33.9	8.5		29.3	15.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		35.8	6.8		27.4	2.2	33.9	8.5		29.3	15.7	
Queue Length 50th (ft)		47	8		11	0	37	85		10	173	
Queue Length 95th (ft)		88	31		30	6	74	146		m18	242	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		358	756		384	768	484	2331		469	2115	
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		0.29	0.12		0.07	0.03	0.17	0.29		0.04	0.36	

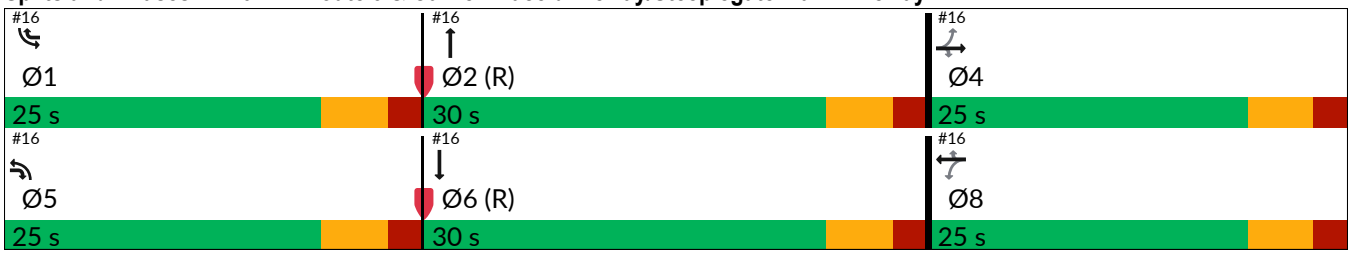
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	5	79	19	5	18	75	622	23	17	627	65
Future Volume (vph)	87	5	79	19	5	18	75	622	23	17	627	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1815	1615		1887	1669	1847	3437		1787	3407	
Flt Permitted		0.72	1.00		0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1367	1615		1464	1669	1847	3437		1787	3407	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	97	6	88	21	5	20	80	662	24	19	697	72
RTOR Reduction (vph)	0	0	45	0	0	15	0	2	0	0	6	0
Lane Group Flow (vph)	0	103	43	0	26	5	80	684	0	19	763	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		10.0	17.7		10.0	14.2	7.7	47.8		4.2	44.3	
Effective Green, g (s)		12.0	21.7		12.0	18.2	9.7	49.8		6.2	46.3	
Actuated g/C Ratio		0.15	0.27		0.15	0.23	0.12	0.62		0.08	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		205	518		219	463	223	2139		138	1971	
v/s Ratio Prot			0.01			0.00	c0.04	c0.20		0.01	c0.22	
v/s Ratio Perm		c0.08	0.02		0.02	0.00						
v/c Ratio		0.50	0.08		0.12	0.01	0.36	0.32		0.14	0.39	
Uniform Delay, d1		31.3	21.7		29.4	23.9	32.3	7.1		34.4	9.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.88	1.41	
Incremental Delay, d2		1.9	0.1		0.2	0.0	1.0	0.4		0.4	0.6	
Delay (s)		33.2	21.8		29.7	23.9	33.3	7.5		30.8	13.5	
Level of Service		C	C		C	C	C	A		C	B	
Approach Delay (s/veh)		27.9			27.2			10.2			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

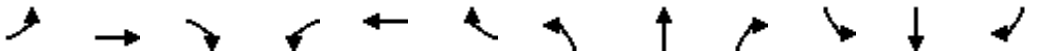
Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	723	4	1	703
Future Vol, veh/h	6	1	723	4	1	703
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	97	97	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	10	2	745	4	1	781

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1140	375	0	0	749	0
Stage 1	747	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	198	629	-	-	862	-
Stage 1	434	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	197	629	-	-	862	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	433	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	22.42	0	0.01
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	219	862	-
HCM Lane V/C Ratio	-	-	0.055	0.001	-
HCM Ctrl Dly (s/v)	-	-	22.4	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	605	46	16	552	38
Future Volume (vph)	53	7	79	73	5	21	73	605	46	16	552	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.990	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3421	0
Flt Permitted		0.638			0.688		0.950			0.950		
Satd. Flow (perm)	0	1200	1599	0	1294	1599	1805	3490	1561	1787	3421	0
Satd. Flow (RTOR)			205			205			123		9	
Adj. Flow (vph)	62	8	93	109	7	31	74	617	47	18	613	42
Lane Group Flow (vph)	0	70	93	0	116	31	74	617	47	18	655	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	23.0	31.0	31.0	23.0	31.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	28.8%	38.8%	38.8%	28.8%	38.8%	
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	25.0	25.0	17.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.21		0.50	0.07	0.31	0.25	0.04	0.08	0.31	
Control Delay (s/veh)		31.3	1.0		36.1	0.3	43.9	9.2	1.6	44.6	14.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.3	1.0		36.1	0.3	43.9	9.2	1.6	44.6	14.5	
Queue Length 50th (ft)		31	0		53	0	39	37	0	10	71	
Queue Length 95th (ft)		59	0		68	0	84	157	0	m28	206	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		330	588		355	588	428	2460	1136	424	2085	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.21	0.16		0.33	0.05	0.17	0.25	0.04	0.04	0.31	

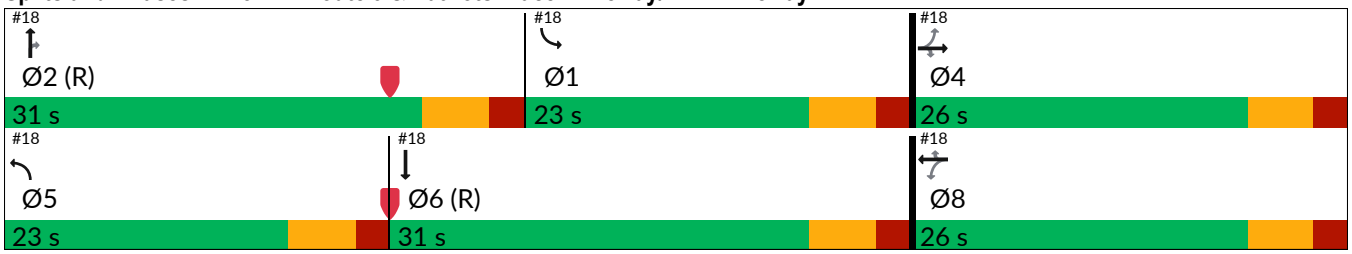
Intersection Summary

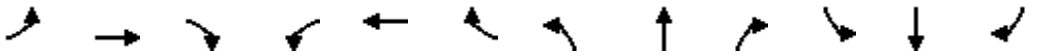
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

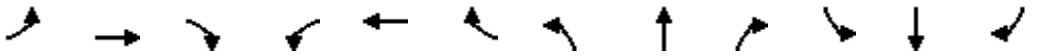




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	605	46	16	552	38
Future Volume (vph)	53	7	79	73	5	21	73	605	46	16	552	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3422	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1201	1599		1295	1599	1805	3490	1561	1787	3422	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.90	0.90	0.90
Adj. Flow (vph)	62	8	93	109	7	31	74	617	47	18	613	42
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	18	0	4	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	617	29	18	651	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.0	11.0		11.0	11.0	7.5	47.6	47.6	3.4	43.5	
Effective Green, g (s)		13.0	13.0		13.0	13.0	9.5	49.6	49.6	5.4	45.5	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.12	0.62	0.62	0.07	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	259		210	259	214	2163	967	120	1946	
v/s Ratio Prot							c0.04	0.18		0.01	c0.19	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.36	0.06		0.55	0.02	0.35	0.29	0.03	0.15	0.33	
Uniform Delay, d1		29.8	28.3		30.8	28.1	32.4	7.0	5.9	35.1	9.2	
Progression Factor		1.00	1.00		1.00	1.00	1.33	1.11	1.00	1.56	1.28	
Incremental Delay, d2		1.1	0.1		3.1	0.0	0.9	0.3	0.1	0.6	0.5	
Delay (s)		30.9	28.4		33.9	28.2	43.9	8.1	5.9	55.3	12.2	
Level of Service		C	C		C	C	D	A	A	E	B	
Approach Delay (s/veh)		29.5			32.7			11.6			13.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



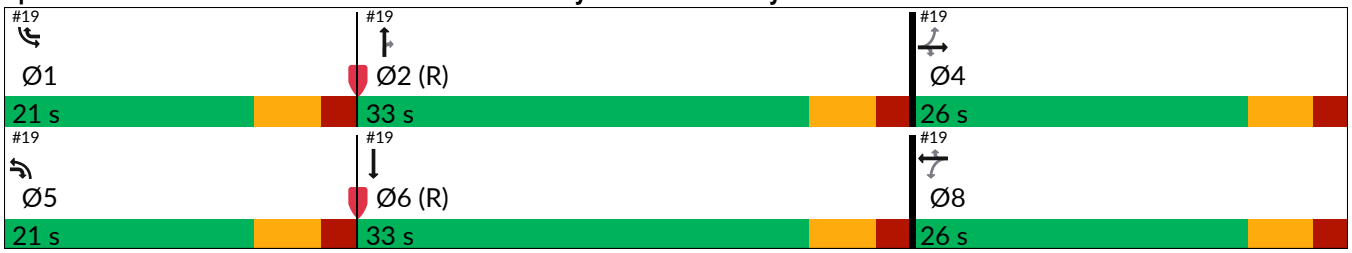
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	511	20	122	495	49
Future Volume (vph)	86	17	36	75	22	179	58	511	20	122	495	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.987	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3444	0
Flt Permitted		0.655			0.655		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1191	1546	1787	3455	1599	1685	3444	0
Satd. Flow (RTOR)			42			138			123		14	
Adj. Flow (vph)	100	20	42	89	26	213	64	568	22	136	550	54
Lane Group Flow (vph)	0	120	42	0	115	213	64	568	22	136	604	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	21.0	26.0	26.0	21.0	21.0	33.0	33.0	21.0	33.0	
Total Split (%)	32.5%	32.5%	26.3%	32.5%	32.5%	26.3%	26.3%	41.3%	41.3%	26.3%	41.3%	
Maximum Green (s)	20.0	20.0	15.0	20.0	20.0	15.0	15.0	27.0	27.0	15.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.08		0.53	0.32	0.28	0.31	0.02	0.47	0.29	
Control Delay (s/veh)		37.5	4.7		38.0	6.3	42.9	9.3	1.1	34.6	10.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		37.5	4.7		38.0	6.3	42.9	9.3	1.1	34.6	10.9	
Queue Length 50th (ft)		55	0		53	23	35	72	0	62	80	
Queue Length 95th (ft)		93	15		89	44	61	154	6	108	143	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		342	689		327	721	379	1831	905	363	2112	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.35	0.06		0.35	0.30	0.17	0.31	0.02	0.37	0.29	

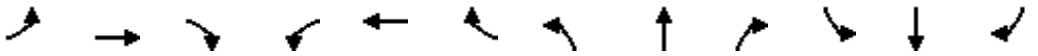
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	511	20	122	495	49
Future Volume (vph)	86	17	36	75	22	179	58	511	20	122	495	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3443	
Flt Permitted		0.65	1.00		0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1192	1546	1787	3455	1599	1685	3443	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	20	42	89	26	213	64	568	22	136	550	54
RTOR Reduction (vph)	0	0	30	0	0	92	0	0	11	0	6	0
Lane Group Flow (vph)	0	120	12	0	115	121	64	568	11	136	598	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.1	18.3		11.1	22.8	7.2	39.2	39.2	11.7	43.7	
Effective Green, g (s)		13.1	22.3		13.1	26.8	9.2	41.2	41.2	13.7	45.7	
Actuated g/C Ratio		0.16	0.28		0.16	0.34	0.12	0.52	0.52	0.17	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	530		195	595	205	1779	823	288	1966	
v/s Ratio Prot			0.00			0.03	0.04	0.16		c0.08	c0.17	
v/s Ratio Perm		0.10	0.00		c0.10	0.04			0.01			
v/c Ratio		0.59	0.02		0.59	0.20	0.31	0.32	0.01	0.47	0.30	
Uniform Delay, d1		31.0	20.9		31.0	19.0	32.5	11.3	9.5	29.9	8.9	
Progression Factor		1.00	1.00		1.00	1.00	1.29	0.67	1.00	1.00	1.00	
Incremental Delay, d2		4.6	0.0		4.5	0.2	0.9	0.5	0.0	1.2	0.4	
Delay (s)		35.5	21.0		35.5	19.2	42.9	8.0	9.5	31.1	9.3	
Level of Service		D	C		D	B	D	A	A	C	A	
Approach Delay (s/veh)		31.7			24.9			11.4			13.3	
Approach LOS		C			C			B			B	

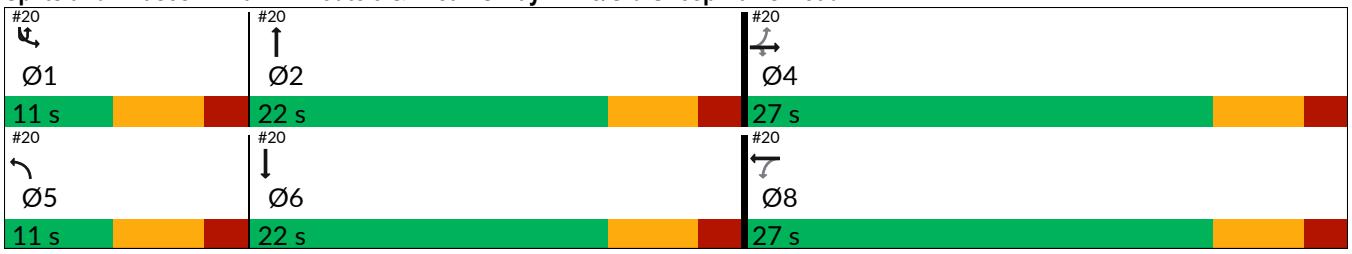
Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	139	0	14	0	0	1	10	759	1	3	1	626
Future Volume (vph)	139	0	14	0	0	1	10	759	1	3	1	626
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.865							0.973
Flt Protected		0.950					0.950				0.950	
Satd. Flow (prot)	0	2046	1669	0	1863	0	1668	3455	0	0	1787	3362
Flt Permitted		0.755					0.950				0.950	
Satd. Flow (perm)	0	1626	1669	0	1863	0	1668	3455	0	0	1787	3362
Satd. Flow (RTOR)			164		273							46
Adj. Flow (vph)	154	0	16	0	0	4	11	807	1	3	1	666
Lane Group Flow (vph)	0	154	16	0	4	0	11	808	0	0	4	815
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		11.0	22.0		11.0	11.0	22.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		18.3%	36.7%		18.3%	18.3%	36.7%
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0		5.0	16.0		5.0	5.0	16.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio		0.33	0.03		0.01		0.04	0.41			0.01	0.42
Control Delay (s/veh)		14.4	0.1		0.0		17.1	9.1			17.0	8.8
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)		14.4	0.1		0.0		17.1	9.1			17.0	8.8
Queue Length 50th (ft)		24	0		0		2	48			1	46
Queue Length 95th (ft)		76	0		0		14	166			8	162
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)		976	1068		1228		305	1967			326	1934
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.16	0.01		0.00		0.04	0.41			0.01	0.42

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 39.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	149
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

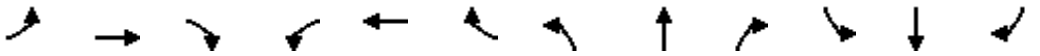
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	139	0	14	0	0	1	10	759	1	3	1	626
Future Volume (vph)	139	0	14	0	0	1	10	759	1	3	1	626
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	16	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frt		1.00	0.85		0.87		1.00	1.00			1.00	0.97
Flt Protected		0.95	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)		2046	1669		1863		1668	3454			1787	3360
Flt Permitted		0.76	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1626	1669		1863		1668	3454			1787	3360
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	154	0	16	0	0	4	11	807	1	3	1	666
RTOR Reduction (vph)	0	0	13	0	3	0	0	0	0	0	0	24
Lane Group Flow (vph)	0	154	3	0	1	0	11	808	0	0	4	791
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)		7.6	7.6		7.6		0.7	19.4			0.7	19.4
Effective Green, g (s)		9.6	9.6		9.6		2.7	21.4			2.7	21.4
Actuated g/C Ratio		0.21	0.21		0.21		0.06	0.47			0.06	0.47
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		341	350		391		98	1617			105	1573
v/s Ratio Prot					0.00		c0.01	0.23			0.00	c0.24
v/s Ratio Perm		c0.09	0.00									
v/c Ratio		0.45	0.01		0.00		0.11	0.50			0.04	0.50
Uniform Delay, d1		15.8	14.3		14.3		20.4	8.4			20.3	8.4
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		1.0	0.0		0.0		0.5	0.2			0.1	0.3
Delay (s)		16.7	14.3		14.3		20.9	8.7			20.4	8.7
Level of Service		B	B		B		C	A			C	A
Approach Delay (s/veh)		16.5			14.3			8.8				8.8
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	149
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

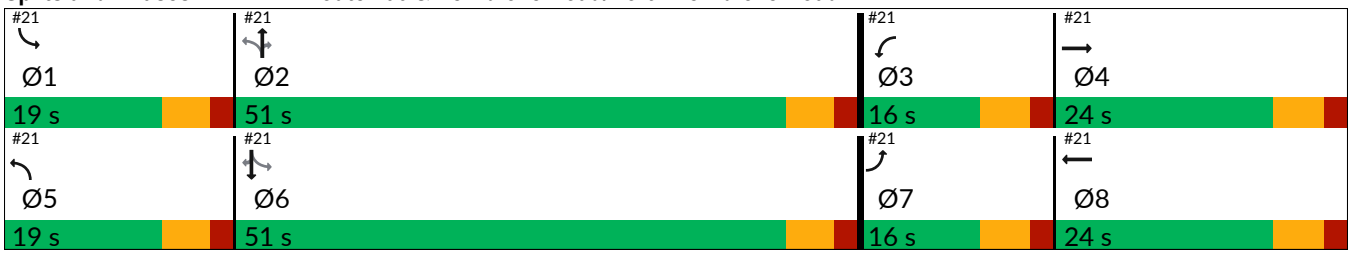


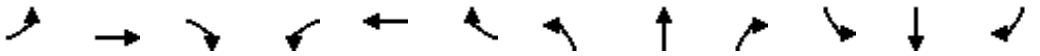
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	77	100	29	43	57	77	1003	60	89	757	146
Future Volume (vph)	235	77	100	29	43	57	77	1003	60	89	757	146
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915			0.915				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1721	0	1736	1504	0	1811	1845	1568	1829	1863	1531
Flt Permitted	0.950			0.950			0.084			0.084		
Satd. Flow (perm)	1787	1721	0	1736	1504	0	160	1845	1568	162	1863	1531
Satd. Flow (RTOR)		52			52				149			149
Adj. Flow (vph)	261	86	111	32	48	63	86	1114	67	96	814	157
Lane Group Flow (vph)	261	197	0	32	111	0	86	1114	67	96	814	157
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	1.15	0.47		0.19	0.45		0.33	1.22	0.08	0.36	0.88	0.19
Control Delay (s/veh)	147.7	31.0		45.2	28.2		13.2	133.4	0.2	14.0	36.4	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	147.7	31.0		45.2	28.2		13.2	133.4	0.2	14.0	36.4	4.0
Queue Length 50th (ft)	~197	84		19	35		20	~889	0	22	452	3
Queue Length 95th (ft)	#399	167		52	90		50	#1307	0	58	#828	40
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	226	437		220	358		358	916	853	362	928	838
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.45		0.15	0.31		0.24	1.22	0.08	0.27	0.88	0.19

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 95.8
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

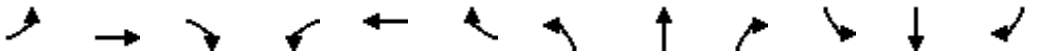




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	77	100	29	43	57	77	1003	60	89	757	146
Future Volume (vph)	235	77	100	29	43	57	77	1003	60	89	757	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1722		1736	1504		1811	1845	1568	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1787	1722		1736	1504		161	1845	1568	161	1863	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	261	86	111	32	48	63	86	1114	67	96	814	157
RTOR Reduction (vph)	0	41	0	0	44	0	0	0	35	0	0	78
Lane Group Flow (vph)	261	156	0	32	67	0	86	1114	32	96	814	79
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	19.0		4.7	13.6		51.7	45.5	45.5	52.1	45.7	45.7
Effective Green, g (s)	12.1	21.0		6.7	15.6		55.7	47.5	47.5	56.1	47.7	47.7
Actuated g/C Ratio	0.12	0.21		0.07	0.16		0.56	0.48	0.48	0.56	0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	363		116	235		225	879	747	231	892	733
v/s Ratio Prot	c0.15	c0.09		0.02	0.04		0.03	c0.60		c0.04	0.44	
v/s Ratio Perm							0.18		0.02	0.20		0.05
v/c Ratio	1.20	0.43		0.28	0.29		0.38	1.27	0.04	0.42	0.91	0.11
Uniform Delay, d1	43.8	34.1		44.1	37.1		18.5	26.1	13.9	20.1	24.0	14.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	126.7	0.8		1.3	0.7		1.1	129.3	0.0	1.2	13.4	0.1
Delay (s)	170.4	34.9		45.4	37.8		19.6	155.4	13.9	21.3	37.5	14.3
Level of Service	F	C		D	D		B	F	B	C	D	B
Approach Delay (s/veh)		112.1			39.5			138.7			32.6	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	91.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	386	9	109	15	46	53	67	684	1	9	598	280
Future Volume (vph)	386	9	109	15	46	53	67	684	1	9	598	280
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.861			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1566	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.686			0.673			0.139			0.325		
Satd. Flow (perm)	1290	1566	0	1279	1981	0	253	1818	1599	611	1818	1546
Satd. Flow (RTOR)		121			59				66			308
Adj. Flow (vph)	429	10	121	17	51	59	72	735	1	10	657	308
Lane Group Flow (vph)	429	131	0	17	110	0	72	735	1	10	657	308
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.08	0.23		0.04	0.17		0.20	0.73	0.00	0.04	0.85	0.37
Control Delay (s/veh)	92.7	5.9		16.7	10.0		7.1	14.8	0.0	13.3	31.6	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	92.7	5.9		16.7	10.0		7.1	14.8	0.0	13.3	31.6	3.5
Queue Length 50th (ft)	~188	3		4	13		11	173	0	2	236	0
Queue Length 95th (ft)	#359	37		17	46		25	289	0	11	#449	44
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	399	568		396	654		444	1158	1042	259	772	833
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.23		0.04	0.17		0.16	0.63	0.00	0.04	0.85	0.37

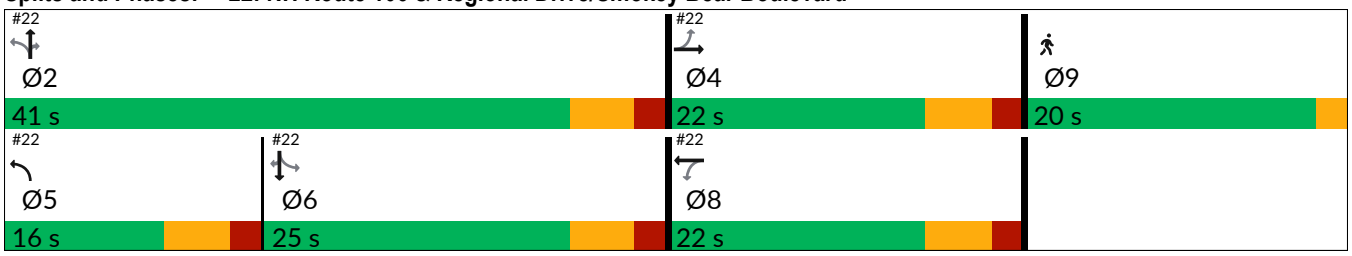
Intersection Summary
Cycle Length: 83

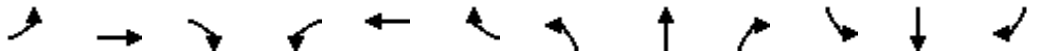
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 58.5
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

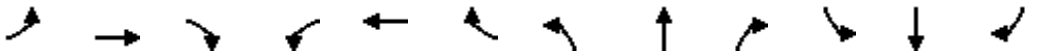




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	386	9	109	15	46	53	67	684	1	9	598	280
Future Volume (vph)	386	9	109	15	46	53	67	684	1	9	598	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.69	1.00		0.67	1.00		0.14	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	1291	1567		1279	1980		253	1818	1599	612	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	429	10	121	17	51	59	72	735	1	10	657	308
RTOR Reduction (vph)	0	85	0	0	41	0	0	0	0	0	0	183
Lane Group Flow (vph)	429	46	0	17	69	0	72	735	1	10	657	125
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.1	16.1		16.1	16.1		32.9	32.9	32.9	22.8	22.8	22.8
Effective Green, g (s)	18.1	18.1		18.1	18.1		34.9	34.9	34.9	24.8	24.8	24.8
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.57	0.57	0.57	0.41	0.41	0.41
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	383	464		379	587		292	1040	914	248	739	628
v/s Ratio Prot		0.03			0.03		0.02	c0.40			c0.36	
v/s Ratio Perm	c0.33			0.01			0.12		0.00	0.02		0.08
v/c Ratio	1.12	0.10		0.04	0.12		0.25	0.71	0.00	0.04	0.89	0.20
Uniform Delay, d1	21.4	15.5		15.3	15.6		9.7	9.4	5.6	10.9	16.8	11.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	82.7	0.1		0.0	0.1		0.4	2.2	0.0	0.1	12.6	0.2
Delay (s)	104.1	15.6		15.3	15.7		10.1	11.6	5.6	11.0	29.4	11.8
Level of Service	F	B		B	B		B	B	A	B	C	B
Approach Delay (s/veh)		83.4			15.7			11.5			23.7	
Approach LOS		F			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

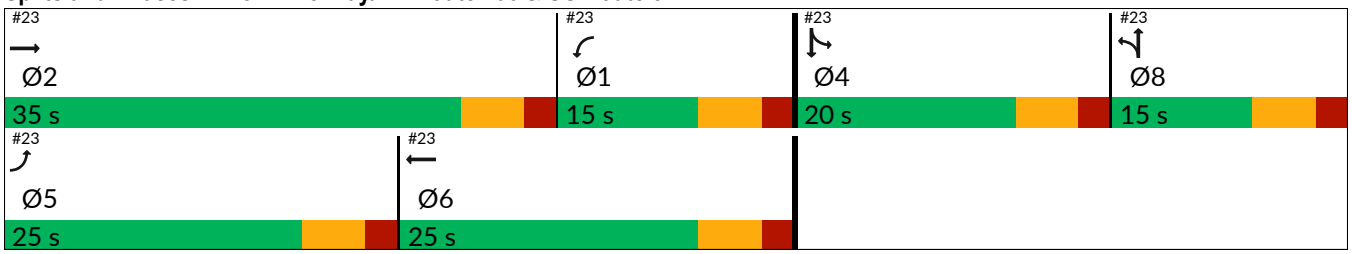


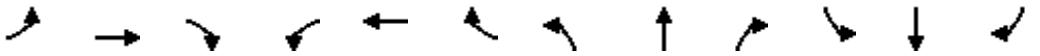
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	762	8	1	399	330	55	22	5	461	2	227
Future Volume (vph)	196	762	8	1	399	330	55	22	5	461	2	227
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Satd. Flow (RTOR)			347			359			347			347
Adj. Flow (vph)	209	811	9	1	434	359	77	31	7	507	2	249
Lane Group Flow (vph)	209	811	9	1	434	359	77	31	7	507	2	249
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		20.0	20.0	
Total Split (%)	29.4%	41.2%		17.6%	29.4%		17.6%	17.6%		23.5%	23.5%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		14.0	14.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.54	0.49	0.01	0.00	0.53	0.20	0.18	0.13	0.00	0.69	0.01	0.16
Control Delay (s/veh)	32.2	15.6	0.0	32.0	27.9	0.3	32.4	33.0	0.0	34.2	27.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.2	15.6	0.0	32.0	27.9	0.3	32.4	33.0	0.0	34.2	27.0	0.2
Queue Length 50th (ft)	86	121	0	0	93	0	17	13	0	112	1	0
Queue Length 95th (ft)	164	250	0	5	152	0	31	33	0	#212	7	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150	200		200	250		150	250		200
Base Capacity (vph)	536	1749	1759	280	1072	1759	534	290	1725	785	426	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.46	0.01	0.00	0.40	0.20	0.14	0.11	0.00	0.65	0.00	0.16

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 70.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

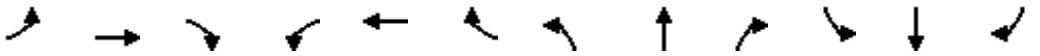




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	762	8	1	399	330	55	22	5	461	2	227
Future Volume (vph)	196	762	8	1	399	330	55	22	5	461	2	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.71	0.71	0.71	0.91	0.91	0.91
Adj. Flow (vph)	209	811	9	1	434	359	77	31	7	507	2	249
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	209	811	9	1	434	359	77	31	7	507	2	249
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.7	32.2	76.8	1.5	20.0	76.8	5.6	5.6	76.8	13.5	13.5	76.8
Effective Green, g (s)	15.7	34.2	76.8	3.5	22.0	76.8	7.6	7.6	76.8	15.5	15.5	76.8
Actuated g/C Ratio	0.20	0.45	1.00	0.05	0.29	1.00	0.10	0.10	1.00	0.20	0.20	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	353	1538	1759	78	989	1759	325	176	1725	669	363	1583
v/s Ratio Prot	c0.12	c0.23		0.00	c0.13		0.02	0.02		c0.15	0.00	
v/s Ratio Perm			0.01			c0.20			0.00			0.16
v/c Ratio	0.59	0.53	0.01	0.01	0.44	0.20	0.24	0.18	0.00	0.76	0.01	0.16
Uniform Delay, d1	27.7	15.4	0.0	35.0	22.4	0.0	31.9	31.7	0.0	28.9	24.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.3	0.0	0.1	0.3	0.3	0.4	0.5	0.0	4.9	0.0	0.2
Delay (s)	30.3	15.8	0.0	35.1	22.7	0.3	32.3	32.2	0.0	33.8	24.5	0.2
Level of Service	C	B	A	D	C	A	C	C	A	C	C	A
Approach Delay (s/veh)		18.6			12.6			30.3			22.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	1134	1	2	1053	43	1	1	2	93	1	897
Future Volume (vph)	432	1134	1	2	1053	43	1	1	2	93	1	897
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	1787	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.871			0.726	
Satd. Flow (perm)	1787	3336	0	1668	3316	0	0	1655	1830	0	1320	1546
Satd. Flow (RTOR)					3				150			635
Adj. Flow (vph)	465	1219	1	2	1170	48	2	2	4	103	1	997
Lane Group Flow (vph)	465	1220	0	2	1218	0	0	4	4	0	104	997
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	0.48		0.02	0.90			0.02	0.01		0.63	1.33
Control Delay (s/veh)	37.5	5.3		42.0	37.2			38.0	0.0		58.5	173.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	37.5	5.3		42.0	37.2			38.0	0.0		58.5	173.0
Queue Length 50th (ft)	251	99		1	367			2	0		62	~441
Queue Length 95th (ft)	372	225		8	#510			7	0		#135	#687
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	635	2562		122	1355			207	360		165	749
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	0.73	0.48		0.02	0.90			0.02	0.01		0.63	1.33

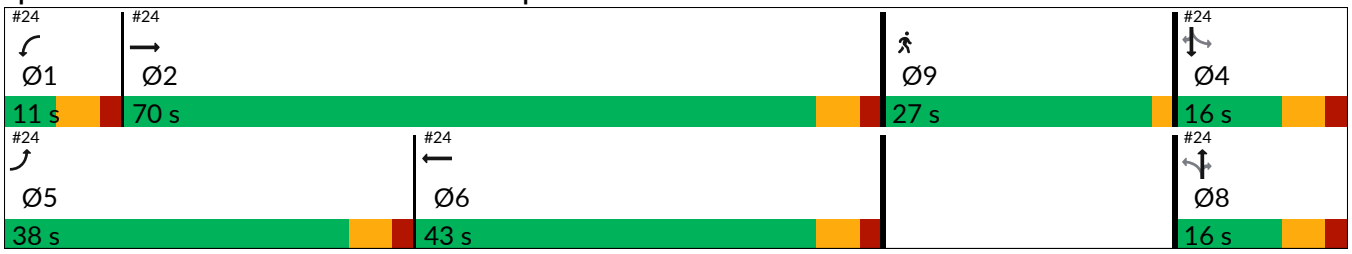
Intersection Summary
Cycle Length: 124

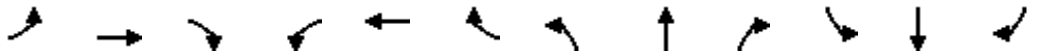
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.6
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

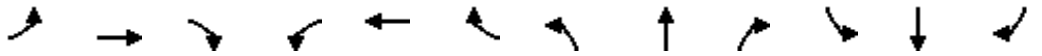




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	1134	1	2	1053	43	1	1	2	93	1	897
Future Volume (vph)	432	1134	1	2	1053	43	1	1	2	93	1	897
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	1787	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.87	1.00		0.73	1.00
Satd. Flow (perm)	1787	3336		1668	3316			1655	1830		1320	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	465	1219	1	2	1170	48	2	2	4	103	1	997
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	4	0	0	559
Lane Group Flow (vph)	465	1220	0	2	1216	0	0	4	0	0	104	438
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	30.6	71.5		1.0	41.9			10.0	10.0		10.0	10.0
Effective Green, g (s)	32.6	73.5		3.0	43.9			12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.32	0.73		0.03	0.44			0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	579	2439		49	1448			197	218		157	184
v/s Ratio Prot	c0.26	0.37		0.00	c0.37							
v/s Ratio Perm								0.00	0.00		0.08	c0.28
v/c Ratio	0.80	0.50		0.04	0.84			0.02	0.00		0.66	2.38
Uniform Delay, d1	31.0	5.7		47.4	25.2			39.1	39.0		42.3	44.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.9	0.2		0.3	4.5			0.0	0.0		10.0	637.2
Delay (s)	38.9	5.9		47.7	29.6			39.1	39.0		52.4	681.4
Level of Service	D	A		D	C			D	D		D	F
Approach Delay (s/veh)		15.0			29.7			39.0			622.0	
Approach LOS		B			C			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	186.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1482	8	5	1261	53	5	0	22	60	0	33
Future Volume (vph)	11	1482	8	5	1261	53	5	0	22	60	0	33
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4959	0	1668	3434	0	1805	1615	0	1760	1524	0
Flt Permitted	0.950			0.950			0.733			0.742		
Satd. Flow (perm)	1728	4959	0	1668	3434	0	1393	1615	0	1374	1524	0
Satd. Flow (RTOR)		1			6			553			164	
Adj. Flow (vph)	12	1594	9	5	1371	58	6	0	24	67	0	37
Lane Group Flow (vph)	12	1603	0	5	1429	0	6	24	0	67	37	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			16.0	16.0		16.0	16.0	
Total Split (s)	12.0	53.0		32.0			33.0	33.0		33.0	33.0	
Total Split (%)	8.6%	37.9%		22.9%			23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	6.0	47.0		26.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.12	0.92		0.01	0.60		0.02	0.03		0.24	0.08	
Control Delay (s/veh)	65.7	53.6		60.0	2.4		44.6	0.1		49.1	0.4	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.7	53.6		60.0	2.5		44.6	0.1		49.1	0.4	
Queue Length 50th (ft)	11	516		4	30		4	0		54	0	
Queue Length 95th (ft)	33	#589		m6	42		17	0		102	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	98	1736		340	2386		288	772		284	445	
Starvation Cap Reductn	0	0		0	237		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	0.12	0.92		0.01	0.66		0.02	0.03		0.24	0.08	

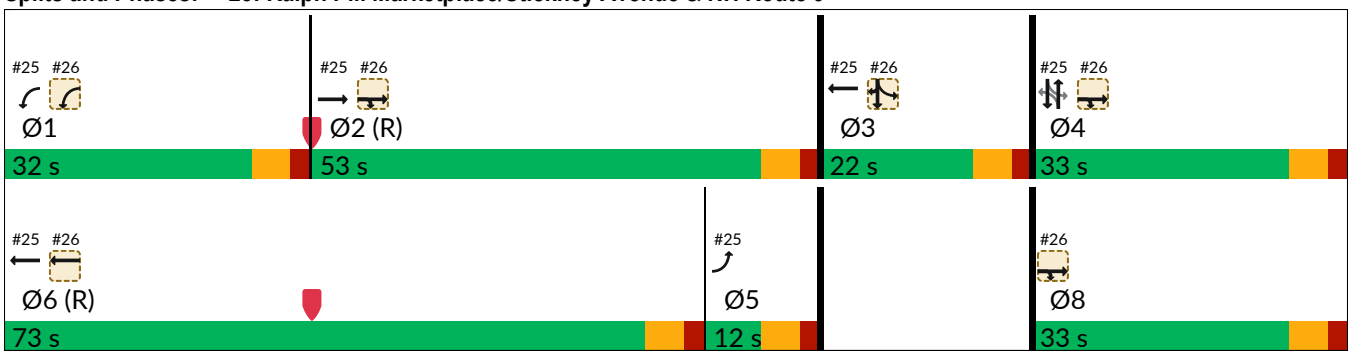
Intersection Summary
Cycle Length: 140

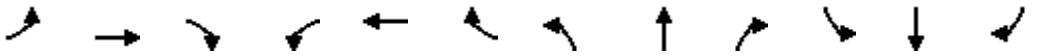
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	16.0	24.0	33.0
Total Split (s)	22.0	73.0	33.0
Total Split (%)	16%	52%	24%
Maximum Green (s)	16.0	67.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
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.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

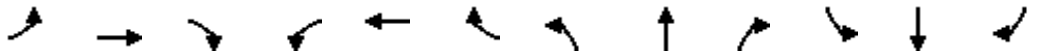




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1482	8	5	1261	53	5	0	22	60	0	33
Future Volume (vph)	11	1482	8	5	1261	53	5	0	22	60	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4960		1668	3434		1805	1615		1760	1524	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1728	4960		1668	3434		1393	1615		1374	1524	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	1594	9	5	1371	58	6	0	24	67	0	37
RTOR Reduction (vph)	0	1	0	0	2	0	0	19	0	0	29	0
Lane Group Flow (vph)	12	1602	0	5	1427	0	6	5	0	67	8	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	47.0		26.6	87.2		26.4	26.4		26.4	26.4	
Effective Green, g (s)	4.4	49.0		28.6	91.2		28.4	28.4		28.4	28.4	
Actuated g/C Ratio	0.03	0.35		0.20	0.65		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	54	1736		340	2237		282	327		278	309	
v/s Ratio Prot	0.01	c0.32		0.00	c0.42			0.00			0.00	
v/s Ratio Perm							0.00			c0.05		
v/c Ratio	0.22	0.92		0.01	0.64		0.02	0.01		0.24	0.02	
Uniform Delay, d1	66.1	43.7		44.5	14.6		44.7	44.6		46.8	44.7	
Progression Factor	1.00	1.00		1.33	0.16		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	9.7		0.0	0.5		0.0	0.0		0.5	0.0	
Delay (s)	68.2	53.4		59.0	2.8		44.7	44.6		47.2	44.7	
Level of Service	E	D		E	A		D	D		D	D	
Approach Delay (s/veh)		53.5			3.0			44.6			46.3	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1321	243	698	1081	0	0	0	0	162	0	238
Future Volume (vph)	0	1321	243	698	1081	0	0	0	0	162	0	238
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			267									173
Adj. Flow (vph)	0	1452	267	712	1103	0	0	0	0	180	0	264
Lane Group Flow (vph)	0	1452	267	712	1103	0	0	0	0	0	180	264
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					16.0	16.0	16.0
Total Split (s)				32.0	73.0					22.0	22.0	22.0
Total Split (%)				22.9%	52.1%					15.7%	15.7%	15.7%
Maximum Green (s)				26.0	67.0					16.0	16.0	16.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.53	0.24	1.08	0.60						0.79	0.74
Control Delay (s/veh)		1.7	0.4	128.8	10.8						82.7	34.0
Queue Delay		0.8	1.7	13.1	0.8						76.5	0.0
Total Delay (s/veh)		2.5	2.0	141.9	11.6						159.2	34.0
Queue Length 50th (ft)		15	0	~375	117						163	80
Queue Length 95th (ft)		m41	m0	#502	172						#282	#191
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2738	1117	661	1830						229	356
Starvation Cap Reductn		889	672	264	401						0	0
Spillback Cap Reductn		555	0	0	1						149	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.79	0.60	1.79	0.77						2.25	0.74

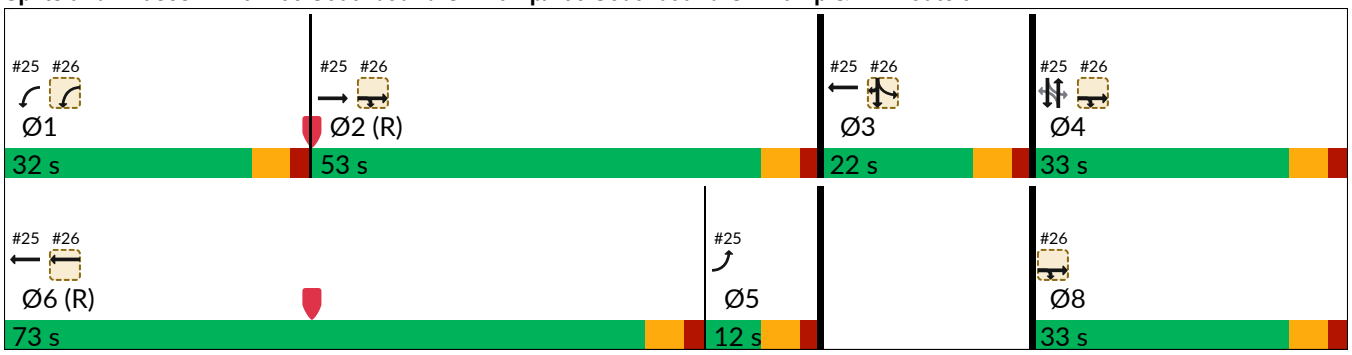
Intersection Summary
Cycle Length: 140

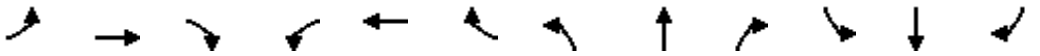
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	16.0	12.0	33.0
Total Split (s)	53.0	33.0	12.0	33.0
Total Split (%)	38%	24%	9%	24%
Maximum Green (s)	47.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

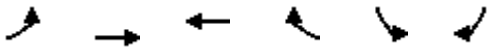




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1321	243	698	1081	0	0	0	0	162	0	238
Future Volume (vph)	0	1321	243	698	1081	0	0	0	0	162	0	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3236	3336						1787	1599
Peak-hour factor, PHF	0.91	0.91	0.91	0.98	0.98	0.98	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1452	267	712	1103	0	0	0	0	180	0	264
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	0	151
Lane Group Flow (vph)	0	1452	148	712	1103	0	0	0	0	0	180	113
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		73.4	73.4	26.6	71.2						16.0	16.0
Effective Green, g (s)		77.4	77.4	28.6	73.2						18.0	18.0
Actuated g/C Ratio		0.55	0.55	0.20	0.52						0.13	0.13
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2717	991	661	1744						229	205
v/s Ratio Prot		c0.30	0.08	c0.22	c0.33						c0.10	0.07
v/s Ratio Perm												
v/c Ratio		0.53	0.15	1.08	0.63						0.79	0.55
Uniform Delay, d1		19.9	15.3	55.7	23.8						59.1	57.2
Progression Factor		0.13	0.16	1.49	0.42						1.00	1.00
Incremental Delay, d2		0.1	0.0	55.5	1.5						16.1	3.2
Delay (s)		2.7	2.5	138.2	11.6						75.3	60.4
Level of Service		A	A	F	B						E	E
Approach Delay (s/veh)		2.6			61.3			0.0			66.4	
Approach LOS		A			E			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

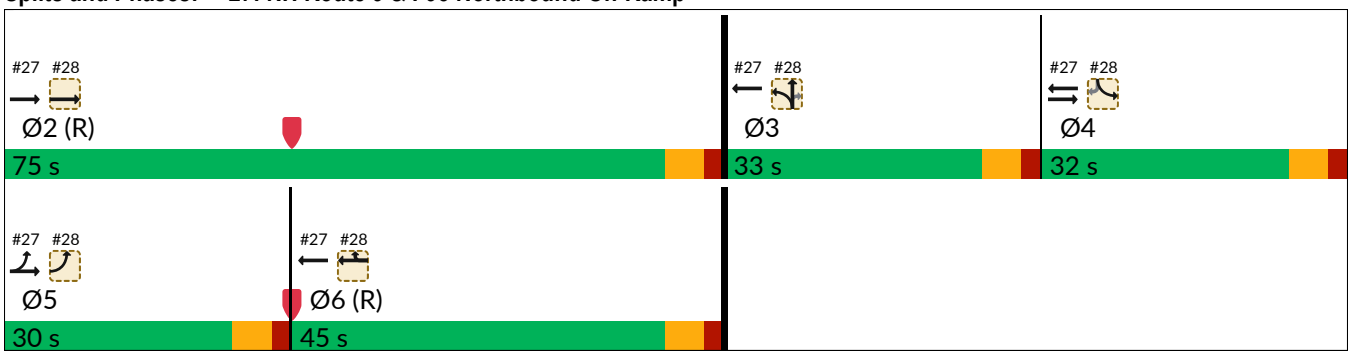


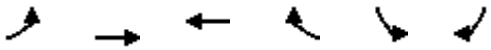
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	264	1219	1779	314	0	0				
Future Volume (vph)	264	1219	1779	314	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				136						
Adj. Flow (vph)	293	1354	1853	327	0	0				
Lane Group Flow (vph)	293	1354	1853	327	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	30.0						75.0	33.0	32.0	45.0
Total Split (%)	21.4%						54%	24%	23%	32%
Maximum Green (s)	24.0						69.0	27.0	26.0	39.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lead							Lead	Lag	Lag
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.95	0.55	0.51	0.20						
Control Delay (s/veh)	103.0	24.7	1.6	0.0						
Queue Delay	50.9	2.9	32.7	0.0						
Total Delay (s/veh)	153.9	27.5	34.4	0.0						
Queue Length 50th (ft)	288	474	43	0						
Queue Length 95th (ft)	m#464	549	m34	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	309	2454	3628	1652						
Starvation Cap Reductn	147	955	1885	0						
Spillback Cap Reductn	0	303	1284	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	1.81	0.90	1.06	0.20						

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	264	1219	1779	314	0	0
Future Volume (vph)	264	1219	1779	314	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.90	0.90
Adj. Flow (vph)	293	1354	1853	327	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	293	1354	1853	327	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	24.0	101.0	104.0	140.0		
Effective Green, g (s)	26.0	103.0	106.0	140.0		
Actuated g/C Ratio	0.19	0.74	0.76	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	309	2454	3628	1652		
v/s Ratio Prot	c0.18	c0.41	c0.39			
v/s Ratio Perm				0.20		
v/c Ratio	0.95	0.55	0.51	0.20		
Uniform Delay, d1	56.3	8.2	6.7	0.0		
Progression Factor	1.22	2.86	0.23	1.00		
Incremental Delay, d2	33.4	0.2	0.0	0.0		
Delay (s)	102.3	23.8	1.6	0.0		
Level of Service	F	C	A	A		
Approach Delay (s/veh)		37.7	1.3		0.0	
Approach LOS		D	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

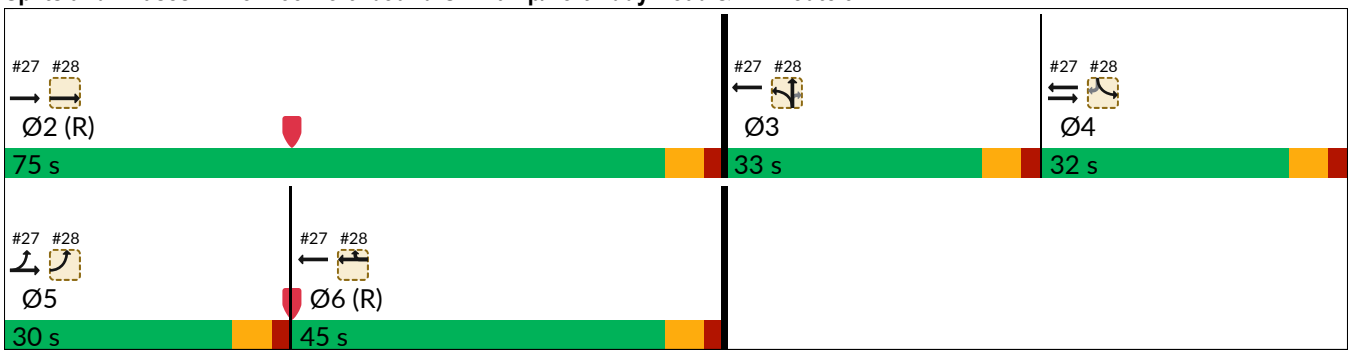
c Critical Lane Group

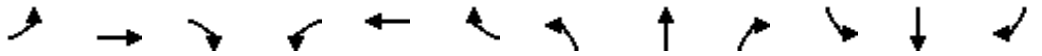
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	828	0	0	1250	416	187	325	458	252	0	661
Future Volume (vph)	391	828	0	0	1250	416	187	325	458	252	0	661
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.940	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1770	3187	1489	3467	0	1652
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1770	3187	1489	3467	0	1652
Satd. Flow (RTOR)						322		85	122			380
Adj. Flow (vph)	434	920	0	0	1389	462	208	361	509	274	0	718
Lane Group Flow (vph)	434	920	0	0	1389	462	208	600	270	274	0	718
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	30.0	75.0			45.0	45.0	33.0	33.0	33.0	32.0		32.0
Total Split (%)	21.4%	53.6%			32.1%	32.1%	23.6%	23.6%	23.6%	22.9%		22.9%
Maximum Green (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead				Lag	Lag	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.72	0.53			1.37	0.65	0.57	0.83	0.67	0.40		1.13
Control Delay (s/veh)	43.1	23.4			215.6	28.5	56.8	56.0	36.4	50.6		101.7
Queue Delay	33.1	0.8			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	76.3	24.2			215.6	28.5	56.8	56.0	36.4	50.6		101.7
Queue Length 50th (ft)	218	368			~874	184	175	255	140	113		~468
Queue Length 95th (ft)	246	443			#1027	m308	262	333	256	158		#719
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	600	1752			1011	711	366	727	405	693		634
Starvation Cap Reductn	183	482			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.04	0.72			1.37	0.65	0.57	0.83	0.67	0.40		1.13

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	828	0	0	1250	416	187	325	458	252	0	661
Future Volume (vph)	391	828	0	0	1250	416	187	325	458	252	0	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.94	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1770	3188	1489	3467		1652
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1770	3188	1489	3467		1652
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	434	920	0	0	1389	462	208	361	509	274	0	718
RTOR Reduction (vph)	0	0	0	0	0	228	0	67	97	0	0	304
Lane Group Flow (vph)	434	920	0	0	1389	234	208	533	173	274	0	414
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
Effective Green, g (s)	26.0	71.0			41.0	41.0	29.0	29.0	29.0	28.0		28.0
Actuated g/C Ratio	0.19	0.51			0.29	0.29	0.21	0.21	0.21	0.20		0.20
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	600	1752			1011	483	366	660	308	693		330
v/s Ratio Prot	c0.13	0.27			c0.40	0.14	0.12	c0.17		0.08		
v/s Ratio Perm									0.12			c0.25
v/c Ratio	0.72	0.53			1.37	0.49	0.57	0.81	0.56	0.40		1.25
Uniform Delay, d1	53.6	23.2			49.5	40.8	49.9	52.8	49.8	48.6		56.0
Progression Factor	0.68	0.96			1.19	2.02	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.6	1.0			172.4	2.3	2.0	7.2	2.3	0.4		137.0
Delay (s)	40.2	23.2			231.5	84.8	51.9	60.0	52.2	49.0		193.0
Level of Service	D	C			F	F	D	E	D	D		F
Approach Delay (s/veh)		28.6			194.9			56.5			153.2	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	116.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1212	294	25	1356	0	274	0	63	0	1
Future Volume (vph)	2	30	1212	294	25	1356	0	274	0	63	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	3455	0	0	1805	1669	0	1763
Flt Permitted		0.950			0.950				0.719			
Satd. Flow (perm)	0	1728	3455	1492	1728	3455	0	0	1366	1669	0	1763
Satd. Flow (RTOR)				125						86		57
Adj. Flow (vph)	2	32	1276	309	27	1443	0	375	0	86	0	2
Lane Group Flow (vph)	0	34	1276	309	27	1443	0	0	375	86	0	59
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Detector Phase	5	5	2	2	1	6		8	8	8	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0
Total Split (s)	20.0	20.0	75.0	75.0	20.0	75.0		45.0	45.0	45.0	45.0	45.0
Total Split (%)	14.3%	14.3%	53.6%	53.6%	14.3%	53.6%		32.1%	32.1%	32.1%	32.1%	32.1%
Maximum Green (s)	14.0	14.0	69.0	69.0	14.0	69.0		39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0	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	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	C-Min		None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0		0		0	0	0	0	0
v/c Ratio		0.27	0.64	0.34	0.22	0.72			0.92	0.15		0.10
Control Delay (s/veh)		62.1	22.5	10.7	62.2	22.3			75.3	7.7		9.6
Queue Delay		0.0	2.0	0.0	0.0	0.1			0.0	0.1		0.0
Total Delay (s/veh)		62.1	24.5	10.7	62.2	22.4			75.3	7.9		9.6
Queue Length 50th (ft)		26	441	140	24	411			319	0		1
Queue Length 95th (ft)		m48	501	m210	m46	494			355	22		9
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150							
Base Capacity (vph)		197	2002	917	197	1992			415	567		575
Starvation Cap Reductn		0	0	0	0	50			0	0		0
Spillback Cap Reductn		0	545	0	0	0			0	134		0
Storage Cap Reductn		0	0	0	0	0			0	0		0
Reduced v/c Ratio		0.17	0.88	0.34	0.14	0.74			0.90	0.20		0.10

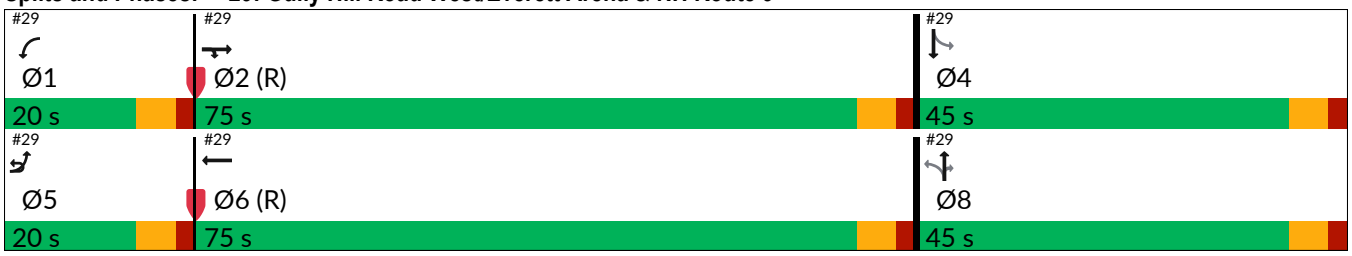
Intersection Summary
Cycle Length: 140

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	57
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Don't Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 127 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



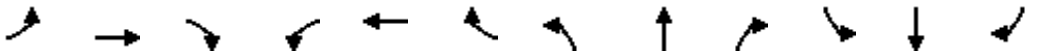
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1212	294	25	1356	0	274	0	63	0	1
Future Volume (vph)	2	30	1212	294	25	1356	0	274	0	63	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	3455			1805	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00			0.72	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	3455			1365	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1276	309	27	1443	0	375	0	86	0	2
RTOR Reduction (vph)	0	0	0	55	0	0	0	0	0	60	0	40
Lane Group Flow (vph)	0	34	1276	254	27	1443	0	0	375	26	0	19
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Actuated Green, G (s)		5.7	76.8	76.8	5.3	76.4			39.9	39.9		39.9
Effective Green, g (s)		7.7	78.8	78.8	7.3	78.4			41.9	41.9		41.9
Actuated g/C Ratio		0.06	0.56	0.56	0.05	0.56			0.30	0.30		0.30
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)		95	1944	839	90	1934			408	499		527
v/s Ratio Prot		c0.02	0.37	0.17	0.02	c0.42						0.01
v/s Ratio Perm									c0.27	0.02		
v/c Ratio		0.36	0.66	0.30	0.30	0.75			0.92	0.05		0.04
Uniform Delay, d1		63.8	21.2	16.1	63.9	23.3			47.4	34.9		34.7
Progression Factor		0.95	1.00	1.00	0.96	0.87			1.00	1.00		1.00
Incremental Delay, d2		1.9	1.5	0.8	1.6	2.3			25.3	0.0		0.0
Delay (s)		62.7	22.7	16.9	62.9	22.5			72.7	35.0		34.8
Level of Service		E	C	B	E	C			E	C		C
Approach Delay (s/veh)			22.4			23.3			65.7			34.8
Approach LOS			C			C			E			C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1185	90	183	1257	16	122	1	162	10	0	2
Future Volume (vph)	0	1185	90	183	1257	16	122	1	162	10	0	2
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.998			0.851			0.850	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1818	3417	0	1728	3448	0	1770	1585	0	1847	1652	0
Flt Permitted				0.950			0.950			0.950		
Satd. Flow (perm)	1818	3417	0	1728	3448	0	1770	1585	0	1847	1652	0
Satd. Flow (RTOR)		7			1			184			411	
Adj. Flow (vph)	0	1261	96	201	1381	18	139	1	184	24	0	5
Lane Group Flow (vph)	0	1357	0	201	1399	0	139	185	0	24	5	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	58.0		17.0	63.0		21.0	20.0		16.0	15.0	
Total Split (%)	8.6%	41.4%		12.1%	45.0%		15.0%	14.3%		11.4%	10.7%	
Maximum Green (s)	6.0	52.0		11.0	57.0		15.0	14.0		10.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.74		0.53	0.52		0.56	0.58		0.19	0.01	
Control Delay (s/veh)		41.8		54.6	7.3		63.9	15.2		64.7	0.0	
Queue Delay		44.4		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		86.2		54.6	7.3		63.9	15.2		64.7	0.0	
Queue Length 50th (ft)		689		168	201		120	1		21	0	
Queue Length 95th (ft)		768		251	389		184	66		23	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)				200			90					
Base Capacity (vph)		1832		381	2706		264	353		158	508	
Starvation Cap Reductn		587		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.09		0.53	0.52		0.53	0.52		0.15	0.01	

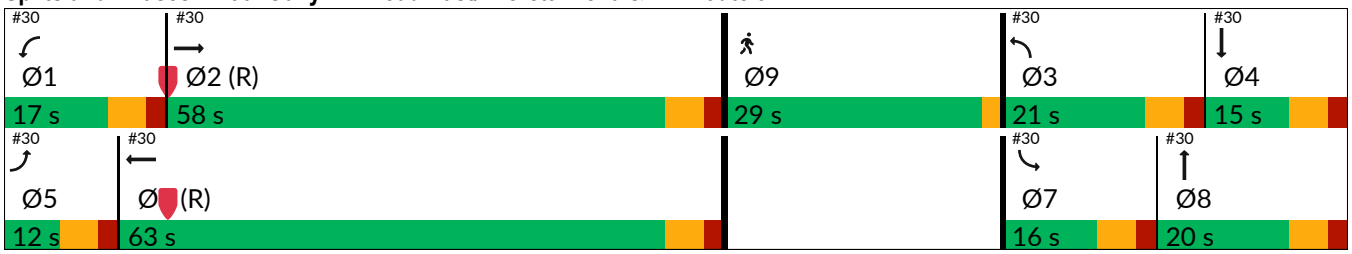
Intersection Summary
Cycle Length: 140

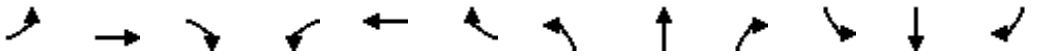
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	21%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 57 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

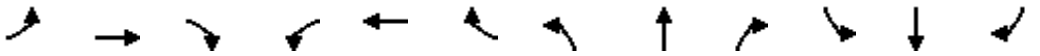




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1185	90	183	1257	16	122	1	162	10	0	2
Future Volume (vph)	0	1185	90	183	1257	16	122	1	162	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3418		1728	3448		1770	1585		1847	1652	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3418		1728	3448		1770	1585		1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1261	96	201	1381	18	139	1	184	24	0	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	163	0	0	5	0
Lane Group Flow (vph)	0	1354	0	201	1399	0	139	22	0	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		68.2		28.9	103.1		17.7	13.9		5.0	1.2	
Effective Green, g (s)		70.2		30.9	105.1		19.7	15.9		7.0	3.2	
Actuated g/C Ratio		0.50		0.22	0.75		0.14	0.11		0.05	0.02	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1713		381	2588		249	180		92	37	
v/s Ratio Prot		c0.40		0.12	c0.41		c0.08	c0.01		0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.79		0.53	0.54		0.56	0.12		0.26	0.00	
Uniform Delay, d1		28.8		48.1	7.3		56.1	55.8		64.0	66.8	
Progression Factor		1.51		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1		1.3	0.8		2.7	0.3		1.5	0.0	
Delay (s)		46.7		49.4	8.1		58.8	56.1		65.5	66.9	
Level of Service		D		D	A		E	E		E	E	
Approach Delay (s/veh)		46.7			13.3			57.2			65.8	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

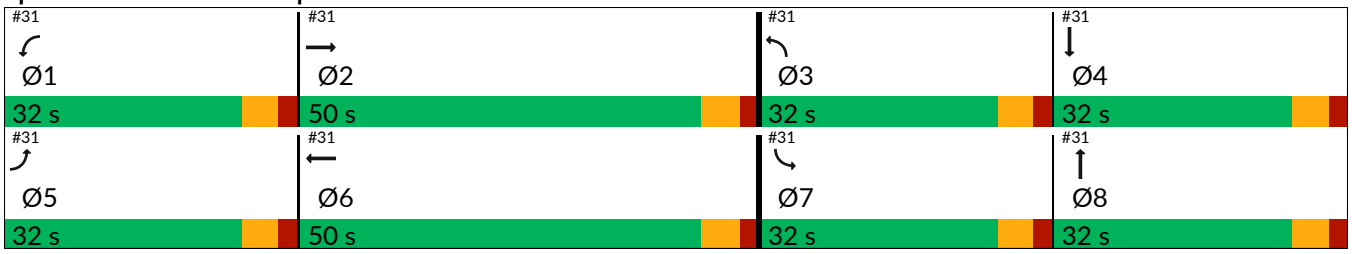


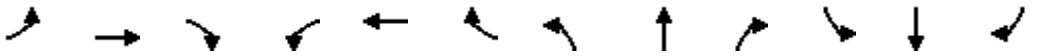
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1062	241	231	862	66	263	115	261	70	217	331
Future Volume (vph)	69	1062	241	231	862	66	263	115	261	70	217	331
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			202			157			290			368
Adj. Flow (vph)	77	1180	268	243	907	69	292	128	290	78	241	368
Lane Group Flow (vph)	77	1180	268	243	907	69	292	128	290	78	241	368
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.45	1.01	0.17	0.77	0.60	0.04	0.87	0.26	0.18	0.46	0.76	0.24
Control Delay (s/veh)	68.2	75.1	0.2	72.0	33.9	0.0	79.6	42.3	0.2	68.5	70.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.2	75.1	0.2	72.0	33.9	0.0	79.6	42.3	0.2	68.5	70.9	0.4
Queue Length 50th (ft)	69	~634	0	217	351	0	267	93	0	70	215	0
Queue Length 95th (ft)	124	#806	0	321	460	0	#444	160	0	124	317	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	366	1165	1599	366	1512	1652	354	491	1599	354	373	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	1.01	0.17	0.66	0.60	0.04	0.82	0.26	0.18	0.22	0.65	0.24

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 137.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ 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: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1062	241	231	862	66	263	115	261	70	217	331
Future Volume (vph)	69	1062	241	231	862	66	263	115	261	70	217	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	1180	268	243	907	69	292	128	290	78	241	368
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	1180	268	243	907	69	292	128	290	78	241	368
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.7	45.6	138.5	22.2	58.1	138.5	24.8	35.1	138.5	11.6	21.9	138.5
Effective Green, g (s)	11.7	47.6	138.5	24.2	60.1	138.5	26.8	37.1	138.5	13.6	23.9	138.5
Actuated g/C Ratio	0.08	0.34	1.00	0.17	0.43	1.00	0.19	0.27	1.00	0.10	0.17	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	150	1187	1599	312	1499	1652	334	486	1599	169	313	1546
v/s Ratio Prot	0.04	c0.34		c0.14	0.26		c0.17	0.07		0.05	c0.13	
v/s Ratio Perm			0.17			0.04			0.18			0.24
v/c Ratio	0.51	0.99	0.17	0.78	0.61	0.04	0.87	0.26	0.18	0.46	0.77	0.24
Uniform Delay, d1	60.7	45.3	0.0	54.6	30.1	0.0	54.2	39.9	0.0	59.0	54.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	24.5	0.2	11.6	0.7	0.0	21.5	0.3	0.2	2.0	10.9	0.4
Delay (s)	63.6	69.9	0.2	66.2	30.8	0.0	75.7	40.2	0.2	61.0	65.5	0.4
Level of Service	E	E	A	E	C	A	E	D	A	E	E	A
Approach Delay (s/veh)		57.3			36.1			38.5			30.1	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	138.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	105	998	39	26	837	312	128	264	58	365	141
Future Volume (vph)	8	105	998	39	26	837	312	128	264	58	365	141
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.994			0.959			0.973			0.948
Flt Protected		0.950			0.950			0.950			0.950	0.990
Satd. Flow (prot)	0	1787	3316	0	1668	3313	0	1668	1708	0	1585	1677
Flt Permitted		0.950			0.950			0.950			0.950	0.990
Satd. Flow (perm)	0	1787	3316	0	1668	3313	0	1668	1708	0	1585	1677
Satd. Flow (RTOR)			3			35			6			16
Adj. Flow (vph)	9	117	1109	43	28	890	332	142	293	64	380	147
Lane Group Flow (vph)	0	126	1152	0	28	1222	0	142	357	0	319	317
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.53	0.86		0.20	1.15		0.42	1.02		0.99	0.90
Control Delay (s/veh)		52.4	38.3		49.6	112.8		42.7	95.9		93.1	69.5
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		52.4	38.3		49.6	112.8		42.7	95.9		93.1	69.5
Queue Length 50th (ft)		83	410		19	~528		88	~258		237	220
Queue Length 95th (ft)		145	#577		48	#685		154	#464		#442	#407
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		279	1346		261	1063		338	351		321	353
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		0.45	0.86		0.11	1.15		0.42	1.02		0.99	0.90

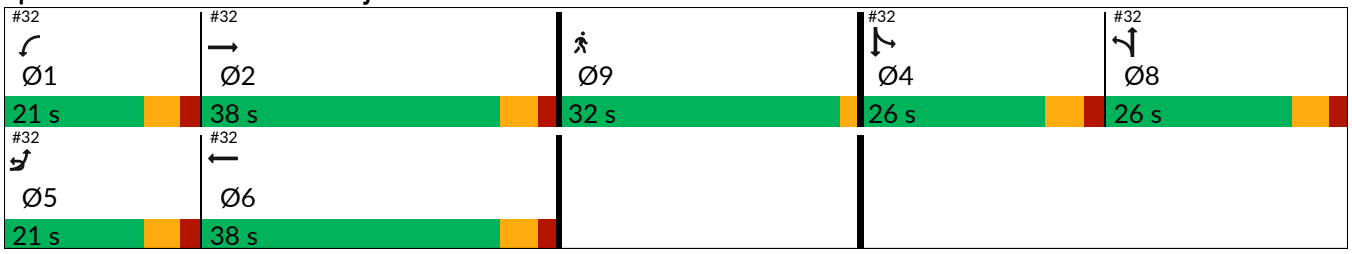
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	105	
Future Volume (vph)	105	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	109	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 108.5
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



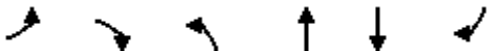
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	105	998	39	26	837	312	128	264	58	365	141
Future Volume (vph)	8	105	998	39	26	837	312	128	264	58	365	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	0.99		1.00	0.96		1.00	0.97		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (prot)		1787	3317		1668	3314		1668	1709		1585	1679
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (perm)		1787	3317		1668	3314		1668	1709		1585	1679
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	9	117	1109	43	28	890	332	142	293	64	380	147
RTOR Reduction (vph)	0	0	2	0	0	23	0	0	5	0	0	13
Lane Group Flow (vph)	0	126	1150	0	28	1199	0	142	352	0	319	304
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		12.4	42.0		4.9	34.5		20.0	20.0		20.0	20.0
Effective Green, g (s)		14.4	44.0		6.9	36.5		22.0	22.0		22.0	22.0
Actuated g/C Ratio		0.13	0.40		0.06	0.33		0.20	0.20		0.20	0.20
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		232	1316		103	1090		330	339		314	333
v/s Ratio Prot		c0.07	c0.35		0.02	c0.36		0.09	c0.21		c0.20	0.18
v/s Ratio Perm												
v/c Ratio		0.54	0.87		0.27	1.10		0.43	1.04		1.02	0.91
Uniform Delay, d1		45.2	30.9		49.6	37.2		39.0	44.5		44.5	43.5
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.6	6.7		1.4	58.7		0.9	59.3		54.9	28.3
Delay (s)		47.8	37.6		51.0	95.9		39.9	103.8		99.4	71.8
Level of Service		D	D		D	F		D	F		F	E
Approach Delay (s/veh)			38.6			94.9			85.6			85.6
Approach LOS			D			F			F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	72.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	547	64	8	606	501	159			
Future Volume (vph)	547	64	8	606	501	159			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1787	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.993					
Satd. Flow (perm)	1787	1599	0	1806	1881	1546			
Satd. Flow (RTOR)		62				175			
Adj. Flow (vph)	608	71	9	673	551	175			
Lane Group Flow (vph)	608	71	0	682	551	175			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					45.0	25.0	45.0
Total Split (%)	33.3%	33.3%					43%	24%	43%
Maximum Green (s)	29.0	29.0					39.0	19.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	1.14	0.14		0.60	0.47	0.17			
Control Delay (s/veh)	118.9	9.4		14.6	15.3	4.8			
Queue Delay	0.0	0.0		0.0	1.2	0.0			
Total Delay (s/veh)	118.9	9.4		14.6	16.5	4.8			
Queue Length 50th (ft)	~487	4		253	200	7			
Queue Length 95th (ft)	#703	37		364	m286	m33			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	533	521		1128	1175	1031			
Starvation Cap Reductn	0	0		0	391	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	1.14	0.14		0.60	0.70	0.17			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65

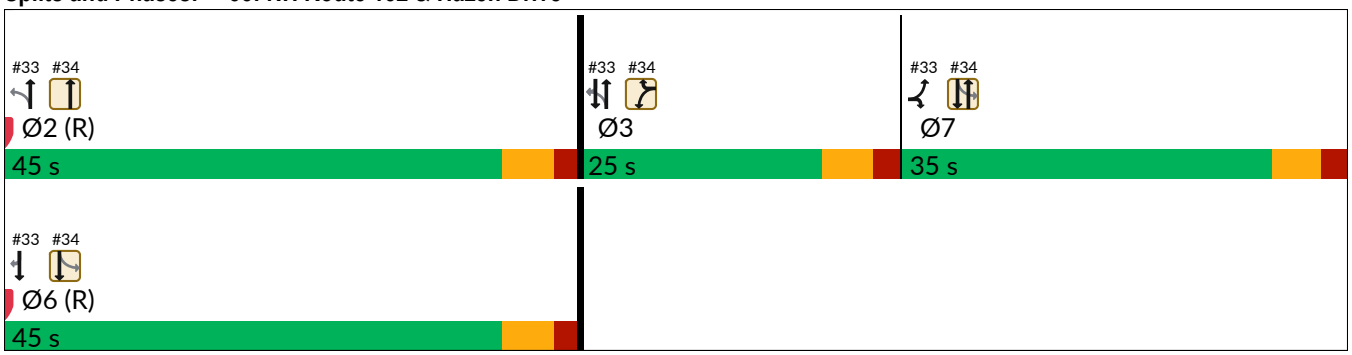
Control Type: Actuated-Coordinated

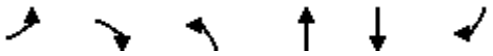
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 33: NH Route 132 & Hazen Drive

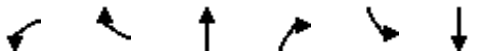




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	547	64	8	606	501	159
Future Volume (vph)	547	64	8	606	501	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1787	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1787	1599		1805	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.91	0.91
Adj. Flow (vph)	608	71	9	673	551	175
RTOR Reduction (vph)	0	43	0	0	0	66
Lane Group Flow (vph)	608	28	0	682	551	109
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	29.4	29.4		63.6	63.6	63.6
Effective Green, g (s)	31.4	31.4		65.6	65.6	65.6
Actuated g/C Ratio	0.30	0.30		0.62	0.62	0.62
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	534	478		1127	1175	965
v/s Ratio Prot	c0.34	0.02			0.29	
v/s Ratio Perm				c0.38		0.07
v/c Ratio	1.14	0.06		0.61	0.47	0.11
Uniform Delay, d1	36.8	26.2		11.9	10.5	8.0
Progression Factor	1.00	1.00		1.00	1.33	3.62
Incremental Delay, d2	83.1	0.1		0.9	0.3	0.0
Delay (s)	119.9	26.3		12.8	14.1	28.8
Level of Service	F	C		B	B	C
Approach Delay (s/veh)	110.1			12.8	17.7	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	277	171	918	246	49	400			
Future Volume (vph)	277	171	918	246	49	400			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.968						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3345	0	1728	1818			
Flt Permitted	0.950				0.173				
Satd. Flow (perm)	1787	1599	3345	0	315	1818			
Satd. Flow (RTOR)		169	83						
Adj. Flow (vph)	308	190	1020	273	53	430			
Lane Group Flow (vph)	308	190	1293	0	53	430			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	25.0	25.0					45.0	45.0	35.0
Total Split (%)	23.8%	23.8%					43%	43%	33%
Maximum Green (s)	19.0	19.0					39.0	39.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.83	0.41	0.54		0.24	0.33			
Control Delay (s/veh)	60.0	10.5	3.0		7.9	6.3			
Queue Delay	0.0	0.0	1.0		0.0	0.0			
Total Delay (s/veh)	60.0	10.5	4.0		7.9	6.3			
Queue Length 50th (ft)	203	12	62		10	91			
Queue Length 95th (ft)	#354	73	m78		28	133			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	372	467	2456		229	1322			
Starvation Cap Reductn	0	0	818		0	0			
Spillback Cap Reductn	0	0	0		0	17			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.83	0.41	0.79		0.23	0.33			

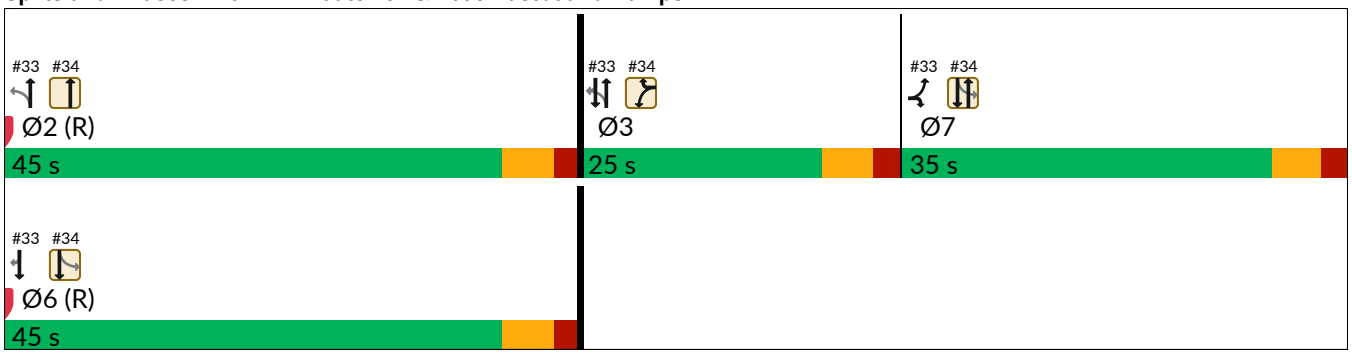
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated

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.

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	277	171	918	246	49	400
Future Volume (vph)	277	171	918	246	49	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3346		1728	1818
Flt Permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1787	1599	3346		315	1818
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.93	0.93
Adj. Flow (vph)	308	190	1020	273	53	430
RTOR Reduction (vph)	0	134	24	0	0	0
Lane Group Flow (vph)	308	56	1269	0	53	430
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	19.9	19.9	73.1		73.1	73.1
Effective Green, g (s)	21.9	21.9	75.1		75.1	75.1
Actuated g/C Ratio	0.21	0.21	0.72		0.72	0.72
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	372	333	2393		225	1300
v/s Ratio Prot	c0.17	0.04	c0.38			0.24
v/s Ratio Perm					0.17	
v/c Ratio	0.83	0.17	0.53		0.24	0.33
Uniform Delay, d1	39.7	34.1	6.9		5.1	5.6
Progression Factor	1.00	1.00	0.41		1.00	1.00
Incremental Delay, d2	14.0	0.2	0.1		0.5	0.2
Delay (s)	53.8	34.3	2.9		5.7	5.7
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	46.4		2.9			5.7
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

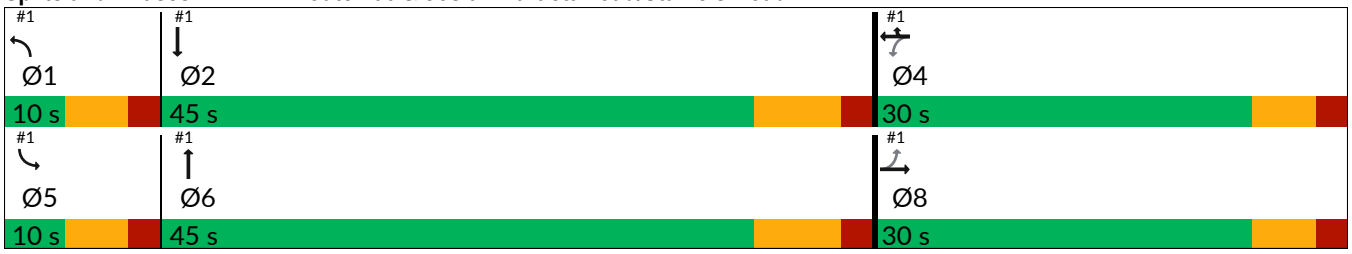
c Critical Lane Group

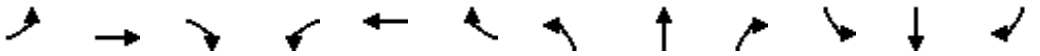
2037 No-Build Saturday Midday Peak-Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	1	65	0	38	6	770	71	32	864	7
Future Volume (vph)	0	6	1	65	0	38	6	770	71	32	864	7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.983				0.850		0.987			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1868	0	0	1805	1615	1787	3528	0	1787	3571	0
Flt Permitted					0.747		0.950			0.950		
Satd. Flow (perm)	0	1868	0	0	1419	1615	1787	3528	0	1787	3571	0
Satd. Flow (RTOR)		2				135		15			1	
Adj. Flow (vph)	0	14	2	86	0	50	7	846	78	36	960	8
Lane Group Flow (vph)	0	16	0	0	86	50	7	924	0	36	968	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.27	0.11	0.05	0.42		0.24	0.41	
Control Delay (s/veh)		18.6			22.1	0.5	28.8	9.0		31.6	7.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		18.6			22.1	0.5	28.8	9.0		31.6	7.7	
Queue Length 50th (ft)		3			17	0	2	65		9	70	
Queue Length 95th (ft)		8			56	0	15	181		43	194	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		1021			775	943	150	2786		150	2817	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.02			0.11	0.05	0.05	0.33		0.24	0.34	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 50.9
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

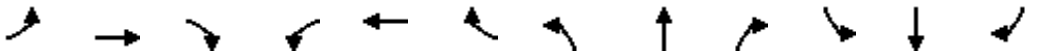
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	1	65	0	38	6	770	71	32	864	7
Future Volume (vph)	0	6	1	65	0	38	6	770	71	32	864	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1868			1805	1615	1787	3529		1787	3570	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1868			1419	1615	1787	3529		1787	3570	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	0	14	2	86	0	50	7	846	78	36	960	8
RTOR Reduction (vph)	0	2	0	0	0	42	0	7	0	0	0	0
Lane Group Flow (vph)	0	14	0	0	86	8	7	917	0	36	968	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.4			7.4	7.4	0.6	28.8		1.3	29.5	
Effective Green, g (s)		9.4			9.4	9.4	0.6	30.8		1.3	31.5	
Actuated g/C Ratio		0.16			0.16	0.16	0.01	0.54		0.02	0.55	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		308			234	266	18	1906		40	1972	
v/s Ratio Prot		0.01				0.01	0.00	0.26		c0.02	c0.27	
v/s Ratio Perm					c0.06							
v/c Ratio		0.05			0.37	0.03	0.39	0.48		0.90	0.49	
Uniform Delay, d1		20.0			21.2	20.0	28.0	8.1		27.8	7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.0	0.0	13.4	0.2		103.3	0.2	
Delay (s)		20.1			22.1	20.0	41.4	8.3		131.0	8.0	
Level of Service		C			C	C	D	A		F	A	
Approach Delay (s/veh)		20.1			21.4			8.6			12.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

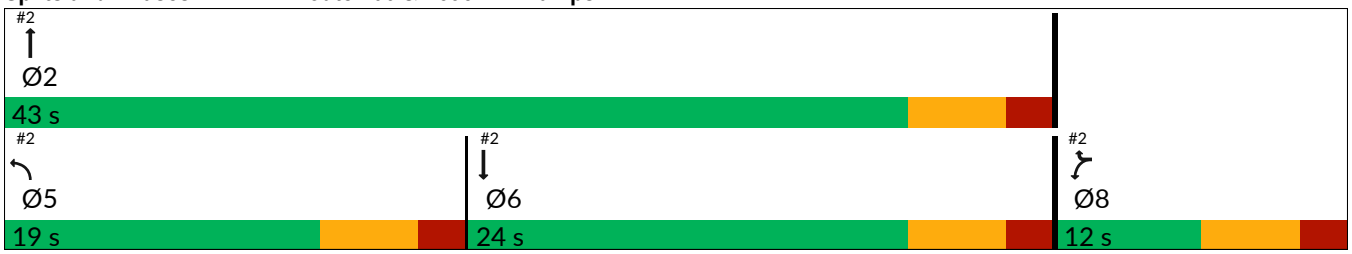


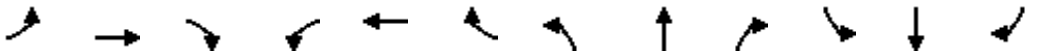
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	16	0	19	740	775	0	0	428	446
Future Volume (vph)	0	0	0	16	0	19	740	775	0	0	428	446
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Satd. Flow (RTOR)						179						496
Adj. Flow (vph)	0	0	0	18	0	21	787	824	0	0	476	496
Lane Group Flow (vph)	0	0	0	18	0	21	787	824	0	0	476	496
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.05		0.05	0.64	0.27			0.41	0.32
Control Delay (s/veh)				18.8		0.2	17.2	2.0			12.6	0.5
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				18.8		0.2	17.2	2.0			12.6	0.5
Queue Length 50th (ft)				3		0	55	0			34	0
Queue Length 95th (ft)				21		0	#213	58			92	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				369		462	1294	3094			1779	1546
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				0.05		0.05	0.61	0.27			0.27	0.32

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 41
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

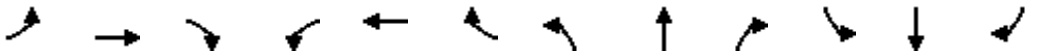




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	16	0	19	740	775	0	0	428	446
Future Volume (vph)	0	0	0	16	0	19	740	775	0	0	428	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1793		1553	3351	3455			3455	1546
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1793		1553	3351	3455			3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	18	0	21	787	824	0	0	476	496
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	18	0	2	787	824	0	0	476	496
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.9		1.9	13.0	31.0			12.0	44.9
Effective Green, g (s)				3.9		3.9	15.0	33.0			14.0	44.9
Actuated g/C Ratio				0.09		0.09	0.33	0.73			0.31	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				155		134	1119	2539			1077	1546
v/s Ratio Prot				0.01		0.00	c0.23	0.24			c0.14	
v/s Ratio Perm												c0.32
v/c Ratio				0.12		0.01	0.70	0.32			0.44	0.32
Uniform Delay, d1				18.9		18.7	13.0	2.1			12.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.3		0.0	2.0	0.1			0.3	0.5
Delay (s)				19.2		18.8	15.0	2.1			12.6	0.5
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			19.0			8.4			6.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	44.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

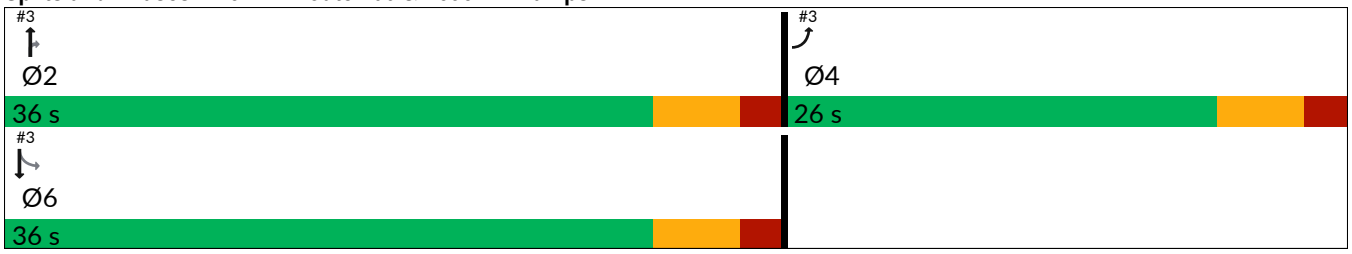
c Critical Lane Group

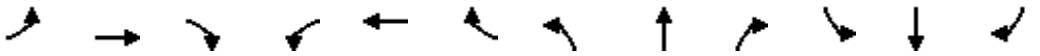


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	0	917	0	0	0	0	1090	16	10	434	0
Future Volume (vph)	425	0	917	0	0	0	0	1090	16	10	434	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.923	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3221	0
Satd. Flow (RTOR)			926						53			
Adj. Flow (vph)	429	0	926	0	0	0	0	1185	17	11	482	0
Lane Group Flow (vph)	429	0	926	0	0	0	0	1185	17	0	493	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.44		0.33					0.63	0.02		0.28	
Control Delay (s/veh)	16.7		0.3					9.4	0.4		6.4	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	16.7		0.3					9.4	0.4		6.4	
Queue Length 50th (ft)	53		0					104	0		33	
Queue Length 95th (ft)	94		0					183	2		64	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1627		2814					2359	1072		2199	
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	0.26		0.33					0.50	0.02		0.22	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 48.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

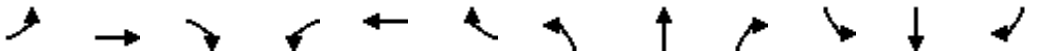




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	0	917	0	0	0	0	1090	16	10	434	0
Future Volume (vph)	425	0	917	0	0	0	0	1090	16	10	434	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3486	
Flt Permitted	0.95		1.00					1.00	1.00		0.92	
Satd. Flow (perm)	3467		2814					3455	1546		3222	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	429	0	926	0	0	0	0	1185	17	11	482	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	0
Lane Group Flow (vph)	429	0	926	0	0	0	0	1185	9	0	493	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	11.5		47.9					24.4	24.4		24.4	
Effective Green, g (s)	13.5		47.9					26.4	26.4		26.4	
Actuated g/C Ratio	0.28		1.00					0.55	0.55		0.55	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	977		2814					1904	852		1775	
v/s Ratio Prot	c0.12							c0.34				
v/s Ratio Perm			0.33						0.01		0.15	
v/c Ratio	0.44		0.33					0.62	0.01		0.28	
Uniform Delay, d1	14.1		0.0					7.3	4.9		5.7	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.3		0.3					0.6	0.0		0.1	
Delay (s)	14.4		0.3					8.0	4.9		5.8	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.8			0.0			7.9			5.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

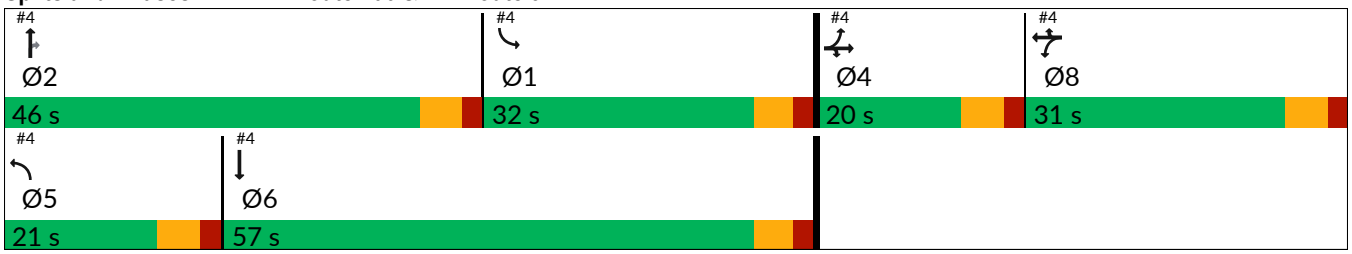


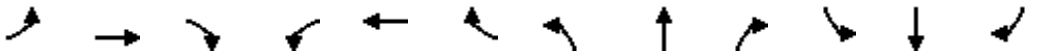
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	552	330	73	314	320	40	74	514	321	54	678	619
Future Volume (vph)	552	330	73	314	320	40	74	514	321	54	678	619
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.988		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1572	3270	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.988		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1572	3270	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			341			532
Adj. Flow (vph)	575	344	76	349	356	44	79	547	341	59	737	673
Lane Group Flow (vph)	575	344	76	230	475	44	79	547	341	59	737	673
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.96	1.06	0.18	0.63	0.62	0.09	0.35	0.57	0.50	0.21	0.67	0.37
Control Delay (s/veh)	69.7	106.8	0.9	43.5	38.1	0.4	47.0	33.2	6.2	39.7	32.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.7	106.8	0.9	43.5	38.1	0.4	47.0	33.2	6.2	39.7	32.4	0.6
Queue Length 50th (ft)	~203	~256	0	141	146	0	46	158	0	32	212	0
Queue Length 95th (ft)	#392	#532	0	270	238	0	103	234	67	77	305	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	602	326	423	476	991	592	329	1630	909	543	2057	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	48	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	1.06	0.18	0.48	0.48	0.07	0.24	0.34	0.38	0.11	0.37	0.37

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 93.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	552	330	73	314	320	40	74	514	321	54	678	619
Future Volume (vph)	552	330	73	314	320	40	74	514	321	54	678	619
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1572	3269	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1572	3269	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	575	344	76	349	356	44	79	547	341	59	737	673
RTOR Reduction (vph)	0	0	62	0	0	34	0	0	246	0	0	0
Lane Group Flow (vph)	575	344	14	230	475	10	79	547	95	59	737	673
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.8	14.8	14.8	19.9	19.9	19.9	8.1	24.2	24.2	11.6	27.7	94.5
Effective Green, g (s)	16.8	16.8	16.8	21.9	21.9	21.9	10.1	26.2	26.2	13.6	29.7	94.5
Actuated g/C Ratio	0.18	0.18	0.18	0.23	0.23	0.23	0.11	0.28	0.28	0.14	0.31	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	595	323	274	364	757	358	184	957	428	248	1085	1812
v/s Ratio Prot	0.17	c0.19	0.01	c0.15	0.15	0.01	0.05	c0.16		0.03	c0.21	
v/s Ratio Perm									0.06			0.37
v/c Ratio	0.97	1.07	0.05	0.63	0.63	0.03	0.43	0.57	0.22	0.24	0.68	0.37
Uniform Delay, d1	38.6	38.9	32.2	32.7	32.6	28.1	39.5	29.3	26.3	35.9	28.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.3	68.3	0.1	3.6	1.6	0.0	1.6	0.8	0.3	0.5	1.7	0.6
Delay (s)	66.9	107.2	32.3	36.2	34.3	28.1	41.1	30.2	26.6	36.4	30.0	0.6
Level of Service	E	F	C	D	C	C	D	C	C	D	C	A
Approach Delay (s/veh)		78.2			34.5			29.8			16.8	
Approach LOS		E			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	703.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	187	0	301	7	701	27	279	950	9
Future Vol, veh/h	5	0	10	187	0	301	7	701	27	279	950	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	79	79	79	94	94	94	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	10	0	20	237	0	381	7	746	29	303	1033	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2405	2433	1037	2400	-	746	1042	0	0	774	0	0
Stage 1	1644	1644	-	761	-	-	-	-	-	-	-	-
Stage 2	761	789	-	1639	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	23	32	283	~ 23	0	417	671	-	-	846	-	-
Stage 1	127	159	-	401	0	-	-	-	-	-	-	-
Stage 2	401	405	-	~ 128	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 1	20	283	~ 14	-	417	671	-	-	846	-	-
Mov Cap-2 Maneuver	~ 1	20	-	~ 14	-	-	-	-	-	-	-	-
Stage 1	82	102	-	397	-	-	-	-	-	-	-	-
Stage 2	34	400	-	~ 76	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	$ 2657.49	$ 3027.51	0.1	2.62
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	671	-	-	1	283	14	417	846	-	-
HCM Lane V/C Ratio	0.011	-	-	7.895	0.071	17.168	0.914	0.359	-	-
HCM Ctrl Dly (s/v)	10.4	-	-	$ 7935.1	18.7	$ 7809	56.9	11.6	-	-
HCM Lane LOS	B	-	-	F	C	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2.6	0.2	30.8	9.9	1.6	-	-

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

Intersection	
Int Delay, s/veh	56.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	223	215	887	977	197
Future Vol, veh/h	82	223	215	887	977	197
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	85	232	224	924	1028	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2400	1028	1236	0	-	0
Stage 1	1028	-	-	-	-	-
Stage 2	1372	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	~ 37	287	567	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 23	287	567	-	-	-
Mov Cap-2 Maneuver	~ 23	-	-	-	-	-
Stage 1	211	-	-	-	-	-
Stage 2	238	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	$ 472.37	3.01	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	567	-	23	287	-	-
HCM Lane V/C Ratio	0.395	-	3.788	0.81	-	-
HCM Ctrl Dly (s/v)	15.4	-	$ 1607.7	54.9	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.9	-	10.8	6.5	-	-

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

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	19	16	1078	1152	48
Future Vol, veh/h	24	19	16	1078	1152	48
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	140	250	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	92	92	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	29	23	17	1172	1188	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2394	1188	1237	0	-	0
Stage 1	1188	-	-	-	-	-
Stage 2	1207	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	38	232	566	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	36	232	566	-	-	-
Mov Cap-2 Maneuver	36	-	-	-	-	-
Stage 1	283	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	149.75	0.17	0
HCM LOS	F		

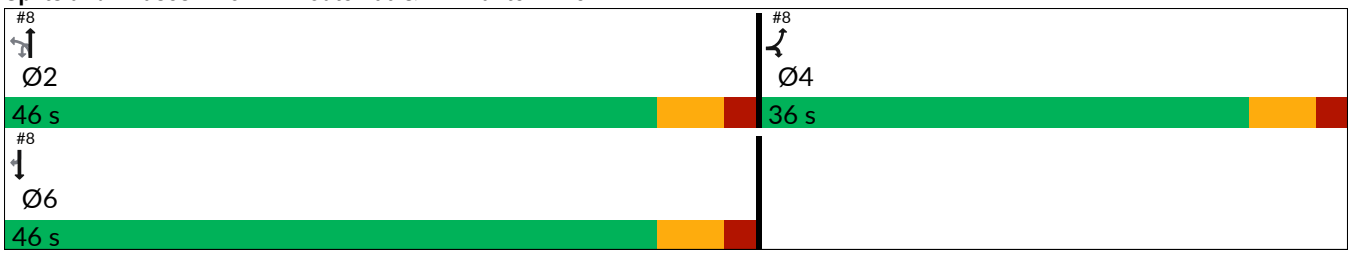
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	566	-	36	232	-	-
HCM Lane V/C Ratio	0.031	-	0.793	0.099	-	-
HCM Ctrl Dly (s/v)	11.6	-	250.7	22.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.9	0.3	-	-

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	342	146	2	185	752	727	444
Future Volume (vph)	342	146	2	185	752	727	444
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1745	1900	1837	1615
Flt Permitted	0.950			0.215			
Satd. Flow (perm)	1745	1561	0	395	1900	1837	1615
Satd. Flow (RTOR)		155					463
Adj. Flow (vph)	380	162	2	206	836	757	463
Lane Group Flow (vph)	380	162	0	208	836	757	463
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.70	0.27		0.91	0.76	0.71	0.41
Control Delay (s/veh)	29.3	4.8		62.6	19.3	17.6	2.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.3	4.8		62.6	19.3	17.6	2.3
Queue Length 50th (ft)	148	2		75	255	220	0
Queue Length 95th (ft)	235	38		#247	#596	#476	43
Internal Link Dist (ft)	224				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	768	774		228	1099	1062	1129
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	0.49	0.21		0.91	0.76	0.71	0.41

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 73.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	342	146	2	185	752	727	444
Future Volume (vph)	342	146	2	185	752	727	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1745	1900	1837	1615
Flt Permitted	0.95	1.00		0.21	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		395	1900	1837	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	380	162	2	206	836	757	463
RTOR Reduction (vph)	0	107	0	0	0	0	195
Lane Group Flow (vph)	380	55	0	208	836	757	268
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	20.7	20.7		40.3	40.3	40.3	40.3
Effective Green, g (s)	22.7	22.7		42.3	42.3	42.3	42.3
Actuated g/C Ratio	0.31	0.31		0.58	0.58	0.58	0.58
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	542	485		228	1100	1064	935
v/s Ratio Prot	c0.22	0.04			0.44	0.41	
v/s Ratio Perm				c0.53			0.17
v/c Ratio	0.70	0.11		0.91	0.76	0.71	0.29
Uniform Delay, d1	22.2	18.0		13.7	11.5	11.0	7.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.1		36.5	3.1	2.3	0.2
Delay (s)	26.2	18.1		50.2	14.7	13.3	7.9
Level of Service	C	B		D	B	B	A
Approach Delay (s/veh)	23.8				21.8	11.2	
Approach LOS	C				C	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	13.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	142	192	916	769	18
Future Vol, veh/h	23	142	192	916	769	18
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	98	98	92	92
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	26	158	196	935	836	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2162	836	855	0	-	0
Stage 1	836	-	-	-	-	-
Stage 2	1327	-	-	-	-	-
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	53	370	793	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	40	370	793	-	-	-
Mov Cap-2 Maneuver	40	-	-	-	-	-
Stage 1	323	-	-	-	-	-
Stage 2	250	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	143.56	1.91	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	793	-	171	-	-
HCM Lane V/C Ratio	0.247	-	1.07	-	-
HCM Ctrl Dly (s/v)	11	-	143.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1	-	9.1	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	466	599	30	22	42
Future Vol, veh/h	24	466	599	30	22	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	35
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	72	72
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	27	518	666	33	31	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	699	0	-	0	994	682
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	312	-
Critical Hdwy	4.115	-	-	-	6.645	6.245
Critical Hdwy Stg 1	-	-	-	-	5.445	-
Critical Hdwy Stg 2	-	-	-	-	5.845	-
Follow-up Hdwy	2.2095	-	-	-	3.5285	3.3285
Pot Cap-1 Maneuver	901	-	-	-	255	447
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	713	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	901	-	-	-	247	447
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.45	0	16.79
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	901	-	-	-	247	447
HCM Lane V/C Ratio	0.03	-	-	-	0.124	0.131
HCM Ctrl Dly (s/v)	9.1	-	-	-	21.6	14.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.4

Intersection	
Int Delay, s/veh	14.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	343	90	140	501	111	147
Future Vol, veh/h	343	90	140	501	111	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	90	90	76	76
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	361	95	156	557	146	193

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	456	0	1276	228
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	868	-
Critical Hdwy	-	-	4.1	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1116	-	173	781
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	414	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1116	-	149	781
Mov Cap-2 Maneuver	-	-	-	-	149	-
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	414	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.91	61.55
HCM LOS			F

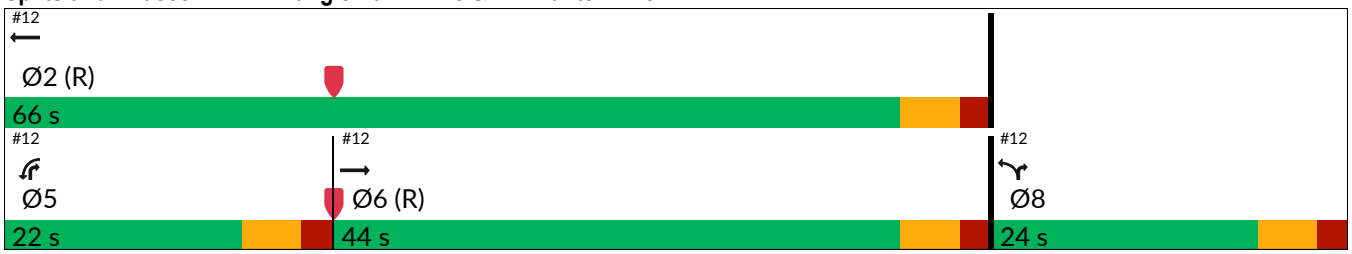
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	149	781	-	-	1116	-
HCM Lane V/C Ratio	0.981	0.248	-	-	0.139	-
HCM Ctrl Dly (s/v)	128.3	11.1	-	-	8.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	7.2	1	-	-	0.5	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	376	178	94	518	126	57
Future Volume (vph)	376	178	94	518	126	57
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt	0.952					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3322	0	1728	1881	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3322	0	1728	1881	1805	1615
Satd. Flow (RTOR)	113					62
Adj. Flow (vph)	413	196	102	563	137	62
Lane Group Flow (vph)	609	0	102	563	137	62
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Detector Phase	6		5	2	8	8 5
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	28.0		11.0	11.0	11.0	
Total Split (s)	44.0		22.0	66.0	24.0	
Total Split (%)	48.9%		24.4%	73.3%	26.7%	
Maximum Green (s)	38.0		16.0	60.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		None	C-Min	None	
Walk Time (s)	4.0					
Flash Don't Walk (s)	18.0					
Pedestrian Calls (#/hr)	0					
v/c Ratio	0.30		0.42	0.40	0.49	0.10
Control Delay (s/veh)	5.4		40.0	5.3	39.8	4.9
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.4		40.0	5.3	39.8	4.9
Queue Length 50th (ft)	15		54	91	72	0
Queue Length 95th (ft)	42		98	173	121	22
Internal Link Dist (ft)	981			380	958	
Turn Bay Length (ft)			250			170
Base Capacity (vph)	2031		345	1419	401	675
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	0.30		0.30	0.40	0.34	0.09

Intersection Summary
Cycle Length: 90

Actuated Cycle Length: 90
Offset: 13 (14%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

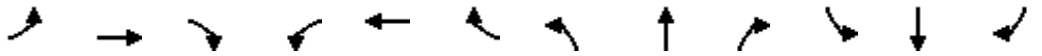
Splits and Phases: 12: Triangle Park Drive & D'Amante Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	376	178	94	518	126	57
Future Volume (vph)	376	178	94	518	126	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3321		1728	1881	1805	1615
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3321		1728	1881	1805	1615
Peak-hour factor, PHF	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	196	102	563	137	62
RTOR Reduction (vph)	47	0	0	0	0	42
Lane Group Flow (vph)	562	0	102	563	137	20
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		5	2	8	8 5
Permitted Phases						
Actuated Green, G (s)	50.6		9.3	65.9	12.1	27.4
Effective Green, g (s)	52.6		11.3	67.9	14.1	29.4
Actuated g/C Ratio	0.58		0.13	0.75	0.16	0.33
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1940		216	1419	282	527
v/s Ratio Prot	0.17		c0.06	c0.30	c0.08	0.01
v/s Ratio Perm						
v/c Ratio	0.29		0.47	0.40	0.49	0.04
Uniform Delay, d1	9.4		36.6	3.9	34.6	20.7
Progression Factor	0.58		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4		1.6	0.8	1.3	0.0
Delay (s)	5.8		38.2	4.7	36.0	20.7
Level of Service	A		D	A	D	C
Approach Delay (s/veh)	5.8			9.8	31.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

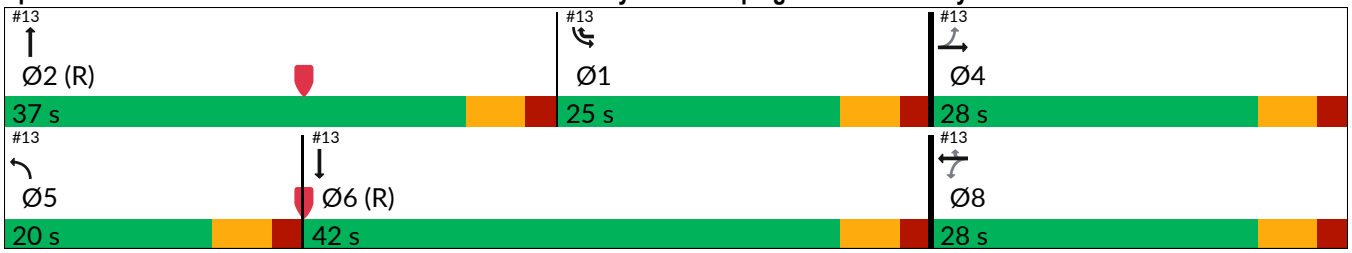


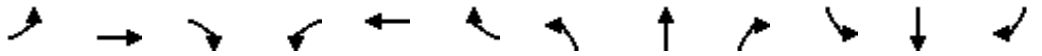
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	1	53	11	5	40	46	702	17	48	634	55
Future Volume (vph)	97	1	53	11	5	40	46	702	17	48	634	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.947				0.850		0.996			0.988	
Flt Protected		0.969			0.967		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1899	1669	1805	3476	0	3385	3448	0
Flt Permitted		0.789			0.742		0.950			0.950		
Satd. Flow (perm)	0	2697	0	0	1457	1669	1805	3476	0	3385	3448	0
Satd. Flow (RTOR)		65				109		3			12	
Adj. Flow (vph)	118	1	65	13	6	47	51	780	19	51	667	58
Lane Group Flow (vph)	0	184	0	0	19	47	51	799	0	51	725	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	28.0	28.0		28.0	28.0	25.0	20.0	37.0		25.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%	27.8%	22.2%	41.1%		27.8%	46.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0	19.0	14.0	31.0		19.0	36.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46			0.10	0.08	0.26	0.36		0.12	0.31	
Control Delay (s/veh)		26.5			34.4	0.3	41.7	8.3		34.7	7.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.2	
Total Delay (s/veh)		26.5			34.4	0.3	41.7	8.3		34.7	7.9	
Queue Length 50th (ft)		33			10	0	28	92		13	90	
Queue Length 95th (ft)		54			27	0	63	151		30	150	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		766			388	603	320	2216		789	2355	
Starvation Cap Reductn		0			0	0	0	0		0	858	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.24			0.05	0.08	0.16	0.36		0.06	0.48	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	1	53	11	5	40	46	702	17	48	634	55
Future Volume (vph)	97	1	53	11	5	40	46	702	17	48	634	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95		0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3312			1898	1669	1805	3477		3385	3448	
Flt Permitted		0.79			0.74	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2697			1456	1669	1805	3477		3385	3448	
Peak-hour factor, PHF	0.82	0.82	0.82	0.86	0.86	0.86	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	118	1	65	13	6	47	51	780	19	51	667	58
RTOR Reduction (vph)	0	57	0	0	0	35	0	1	0	0	4	0
Lane Group Flow (vph)	0	127	0	0	19	12	51	798	0	51	721	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		9.5			9.5	19.0	5.5	53.0		9.5	57.0	
Effective Green, g (s)		11.5			11.5	23.0	7.5	55.0		11.5	59.0	
Actuated g/C Ratio		0.13			0.13	0.26	0.08	0.61		0.13	0.66	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		344			186	500	150	2124		432	2260	
v/s Ratio Prot						0.00	0.03	c0.23		0.02	c0.21	
v/s Ratio Perm		c0.05			0.01	0.00						
v/c Ratio		0.37			0.10	0.02	0.34	0.38		0.12	0.32	
Uniform Delay, d1		35.9			34.7	25.1	38.9	8.8		34.8	6.8	
Progression Factor		1.00			1.00	1.00	1.08	0.87		1.00	1.00	
Incremental Delay, d2		0.7			0.2	0.0	1.3	0.5		0.1	0.4	
Delay (s)		36.6			34.9	25.1	43.2	8.2		34.9	7.1	
Level of Service		D			C	C	D	A		C	A	
Approach Delay (s/veh)		36.6			27.9			10.3			8.9	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

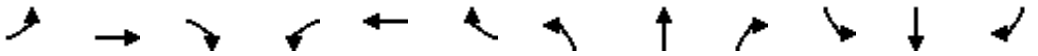
Intersection	
Int Delay, s/veh	0.7

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	3	58	1291	128	37	1434
Future Vol, veh/h	3	58	1291	128	37	1434
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	89	89	93	93	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	3	65	1388	138	38	1478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2272	763	0	0	1526	0
Stage 1	1457	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	35	351	-	-	438	-
Stage 1	184	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	32	351	-	-	438	-
Mov Cap-2 Maneuver	32	-	-	-	-	-
Stage 1	168	-	-	-	-	-
Stage 2	400	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	25.4	0	0.35
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	244	438	-
HCM Lane V/C Ratio	-	-	0.28	0.087	-
HCM Ctrl Dly (s/v)	-	-	25.4	14	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	1.1	0.3	-



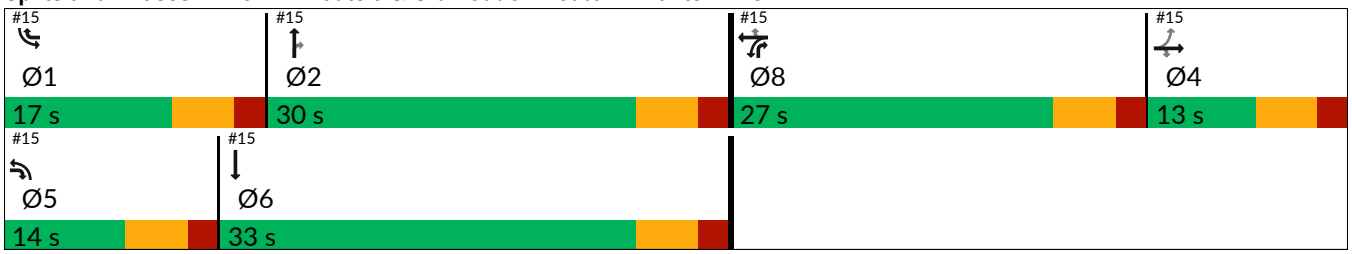
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	69	105	589	87	164	89	765	495	174	776	44
Future Volume (vph)	15	69	105	589	87	164	89	765	495	174	776	44
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.991		0.950	0.964		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1658	1740	1507	1787	3455	1599	3502	3462	0
Flt Permitted		0.840		0.950	0.964		0.950			0.950		
Satd. Flow (perm)	0	1543	1561	1658	1740	1507	1787	3455	1599	3502	3462	0
Satd. Flow (RTOR)			113			176			302		7	
Adj. Flow (vph)	17	77	117	633	94	176	96	823	532	193	862	49
Lane Group Flow (vph)	0	94	117	361	366	176	96	823	532	193	911	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	14.0	27.0	27.0	17.0	14.0	30.0	27.0	17.0	33.0	
Total Split (%)	14.9%	14.9%	16.1%	31.0%	31.0%	19.5%	16.1%	34.5%	31.0%	19.5%	37.9%	
Maximum Green (s)	7.0	7.0	8.0	21.0	21.0	11.0	8.0	24.0	21.0	11.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.55	0.25	0.80	0.77	0.24	0.45	0.76	0.47	0.38	0.78	
Control Delay (s/veh)		50.8	7.4	44.4	41.7	2.3	43.5	31.9	5.1	35.7	30.5	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		50.8	7.4	44.4	41.7	2.3	43.5	31.9	5.1	35.7	30.5	
Queue Length 50th (ft)		50	2	195	196	0	50	215	51	50	233	
Queue Length 95th (ft)		#112	41	#348	#341	23	100	291	116	81	306	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		175	469	483	507	776	226	1160	1150	576	1276	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.54	0.25	0.75	0.72	0.23	0.42	0.71	0.46	0.34	0.71	

Intersection Summary

Cycle Length: 87
Actuated Cycle Length: 81.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

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

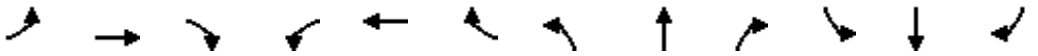
Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	69	105	589	87	164	89	765	495	174	776	44
Future Volume (vph)	15	69	105	589	87	164	89	765	495	174	776	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1820	1561	1658	1740	1507	1787	3455	1599	3502	3462	
Flt Permitted		0.84	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1543	1561	1658	1740	1507	1787	3455	1599	3502	3462	
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	17	77	117	633	94	176	96	823	532	193	862	49
RTOR Reduction (vph)	0	0	90	0	0	104	0	0	128	0	5	0
Lane Group Flow (vph)	0	94	27	361	366	72	96	823	404	193	906	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.2	12.9	20.1	20.1	29.7	7.7	23.3	43.4	9.6	25.2	
Effective Green, g (s)		7.2	16.9	22.1	22.1	33.7	9.7	25.3	47.4	11.6	27.2	
Actuated g/C Ratio		0.09	0.21	0.27	0.27	0.41	0.12	0.31	0.58	0.14	0.33	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		135	396	445	467	617	210	1063	999	494	1145	
v/s Ratio Prot			0.01	c0.22	0.21	0.02	c0.05	0.24	0.11	0.06	c0.26	
v/s Ratio Perm		c0.06	0.01			0.03			0.14			
v/c Ratio		0.70	0.07	0.81	0.78	0.12	0.46	0.77	0.40	0.39	0.79	
Uniform Delay, d1		36.4	26.3	28.1	27.8	15.0	33.8	25.9	9.6	32.1	24.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		14.5	0.1	10.7	8.4	0.1	1.6	3.6	0.3	0.5	3.8	
Delay (s)		50.9	26.4	38.8	36.2	15.1	35.4	29.4	9.9	32.6	28.7	
Level of Service		D	C	D	D	B	D	C	A	C	C	
Approach Delay (s/veh)		37.3			33.2			22.7			29.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



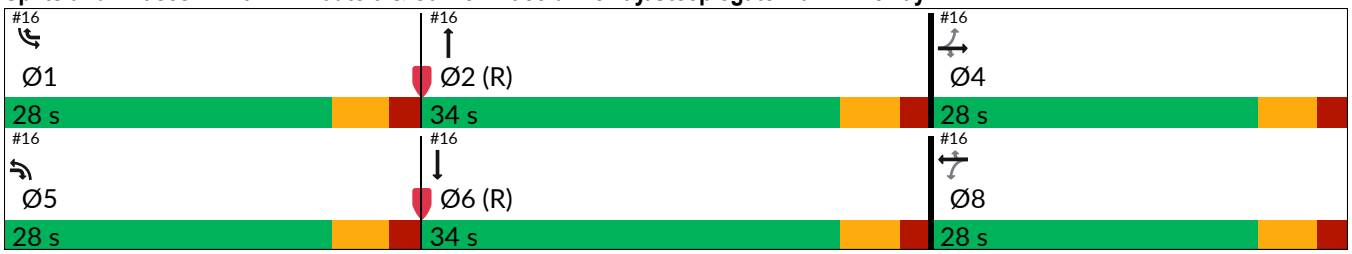
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	10	109	19	11	37	96	829	21	13	865	78
Future Volume (vph)	92	10	109	19	11	37	96	829	21	13	865	78
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.996			0.988	
Flt Protected		0.957			0.969		0.950			0.950		
Satd. Flow (prot)	0	1818	1615	0	1865	1636	1847	3441	0	1787	3414	0
Flt Permitted		0.723			0.786		0.950			0.950		
Satd. Flow (perm)	0	1374	1615	0	1513	1636	1847	3441	0	1787	3414	0
Satd. Flow (RTOR)			36			36		3			11	
Adj. Flow (vph)	102	11	121	21	12	40	105	911	23	14	961	87
Lane Group Flow (vph)	0	113	121	0	33	40	105	934	0	14	1048	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0	34.0		28.0	34.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	37.8%		31.1%	37.8%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	28.0		22.0	28.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.51	0.23		0.14	0.09	0.41	0.39		0.09	0.51	
Control Delay (s/veh)		41.6	13.7		31.6	8.0	39.6	9.0		51.0	10.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		41.6	13.7		31.6	8.0	39.6	9.0		51.0	10.0	
Queue Length 50th (ft)		59	33		17	2	56	135		6	248	
Queue Length 95th (ft)		105	60		40	22	101	219		m19	207	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		366	737		403	746	492	2415		476	2037	
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		0.31	0.16		0.08	0.05	0.21	0.39		0.03	0.51	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	10	109	19	11	37	96	829	21	13	865	78
Future Volume (vph)	92	10	109	19	11	37	96	829	21	13	865	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1818	1615		1865	1636	1847	3442		1787	3412	
Flt Permitted		0.72	1.00		0.79	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1374	1615		1513	1636	1847	3442		1787	3412	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	102	11	121	21	12	40	105	911	23	14	961	87
RTOR Reduction (vph)	0	0	26	0	0	28	0	1	0	0	5	0
Lane Group Flow (vph)	0	113	95	0	33	12	105	933	0	14	1043	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		11.2	21.6		11.2	15.3	10.4	56.7		4.1	50.4	
Effective Green, g (s)		13.2	25.6		13.2	19.3	12.4	58.7		6.1	52.4	
Actuated g/C Ratio		0.15	0.28		0.15	0.21	0.14	0.65		0.07	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		201	531		221	423	254	2244		121	1986	
v/s Ratio Prot			0.02			0.00	c0.06	0.27		0.01	c0.31	
v/s Ratio Perm		c0.08	0.03		0.02	0.01						
v/c Ratio		0.56	0.18		0.15	0.03	0.41	0.42		0.12	0.53	
Uniform Delay, d1		35.7	24.3		33.5	27.9	35.5	7.5		39.4	11.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.35	0.71	
Incremental Delay, d2		3.6	0.2		0.3	0.0	1.1	0.6		0.4	0.9	
Delay (s)		39.3	24.4		33.8	28.0	36.6	8.0		53.6	8.9	
Level of Service		D	C		C	C	D	A		D	A	
Approach Delay (s/veh)		31.6			30.6			10.9			9.5	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	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)	12.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	925	33	10	953
Future Vol, veh/h	3	4	925	33	10	953
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	93	93	90	90
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	3	5	995	35	11	1059

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1564	515	0	0	1030	0
Stage 1	1012	-	-	-	-	-
Stage 2	552	-	-	-	-	-
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	104	510	-	-	682	-
Stage 1	316	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	103	510	-	-	682	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	311	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	24.91	0	0.11
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	189	682	-
HCM Lane V/C Ratio	-	-	0.042	0.016	-
HCM Ctrl Dly (s/v)	-	-	24.9	10.4	-
HCM Lane LOS	-	-	C	B	-
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)	48	14	126	93	9	19	90	780	59	20	744	42
Future Volume (vph)	48	14	126	93	9	19	90	780	59	20	744	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3427	0
Flt Permitted		0.655			0.692		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1315	1615	1805	3490	1561	1787	3427	0
Satd. Flow (RTOR)			182			182			109		7	
Adj. Flow (vph)	57	17	150	131	13	27	100	867	66	22	827	47
Lane Group Flow (vph)	0	74	150	0	144	27	100	867	66	22	874	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	46.0	46.0	16.0	36.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	28.9%	51.1%	51.1%	17.8%	40.0%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	20.0	40.0	40.0	10.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.31	0.33		0.58	0.06	0.41	0.39	0.06	0.10	0.45	
Control Delay (s/veh)		33.3	4.6		41.8	0.3	33.3	7.4	0.3	26.6	11.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		33.3	4.6		41.8	0.3	33.3	7.4	0.3	26.6	11.0	
Queue Length 50th (ft)		37	0		75	0	40	18	0	7	97	
Queue Length 95th (ft)		65	22		94	0	60	168	0	m17	162	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		331	564		350	564	441	2232	1037	271	1949	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22	0.27		0.41	0.05	0.23	0.39	0.06	0.08	0.45	

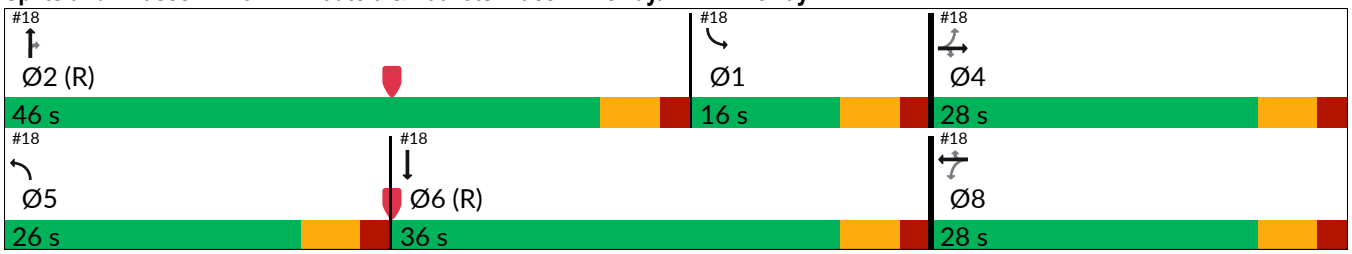
Intersection Summary

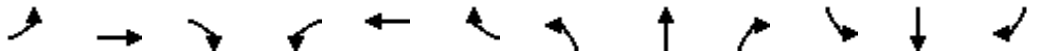
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 47 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

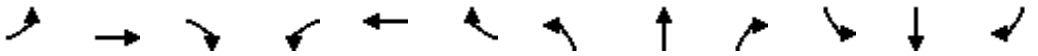




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	780	59	20	744	42
Future Volume (vph)	48	14	126	93	9	19	90	780	59	20	744	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3427	
Flt Permitted		0.65	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1316	1615	1805	3490	1561	1787	3427	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	17	150	131	13	27	100	867	66	22	827	47
RTOR Reduction (vph)	0	0	122	0	0	22	0	0	27	0	3	0
Lane Group Flow (vph)	0	74	28	0	144	5	100	867	39	22	871	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.0	15.0		15.0	15.0	9.0	51.3	51.3	5.7	48.0	
Effective Green, g (s)		17.0	17.0		17.0	17.0	11.0	53.3	53.3	7.7	50.0	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.12	0.59	0.59	0.09	0.56	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		234	305		248	305	220	2066	924	152	1903	
v/s Ratio Prot							0.06	c0.25		0.01	c0.25	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.03			
v/c Ratio		0.32	0.09		0.58	0.02	0.45	0.42	0.04	0.14	0.46	
Uniform Delay, d1		31.5	30.1		33.3	29.7	36.7	10.0	7.7	38.1	11.9	
Progression Factor		1.00	1.00		1.00	1.00	0.82	0.61	0.16	0.78	0.75	
Incremental Delay, d2		0.8	0.1		3.4	0.0	1.4	0.6	0.1	0.4	0.8	
Delay (s)		32.3	30.3		36.7	29.7	31.6	6.7	1.3	30.3	9.7	
Level of Service		C	C		D	C	C	A	A	C	A	
Approach Delay (s/veh)		30.9			35.6			8.8			10.2	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	543	22	144	624	52
Future Volume (vph)	72	13	85	94	35	155	78	543	22	144	624	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1755	1546	1787	3455	1599	1685	3448	0
Flt Permitted		0.553			0.694		0.950			0.950		
Satd. Flow (perm)	0	1051	1615	0	1262	1546	1787	3455	1599	1685	3448	0
Satd. Flow (RTOR)			81			125			109		11	
Adj. Flow (vph)	91	16	108	112	42	185	84	584	24	160	693	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	584	24	160	751	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	32.0	32.0	22.0	32.0	32.0	22.0	22.0	36.0	36.0	22.0	36.0	
Total Split (%)	35.6%	35.6%	24.4%	35.6%	35.6%	24.4%	24.4%	40.0%	40.0%	24.4%	40.0%	
Maximum Green (s)	26.0	26.0	16.0	26.0	26.0	16.0	16.0	30.0	30.0	16.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.52	0.17		0.62	0.26	0.37	0.34	0.03	0.55	0.40	
Control Delay (s/veh)		40.1	5.9		43.2	5.7	55.2	6.5	0.2	40.2	14.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		40.1	5.9		43.2	5.7	55.2	6.5	0.2	40.2	14.1	
Queue Length 50th (ft)		55	10		81	20	50	52	0	84	122	
Queue Length 95th (ft)		84	27		122	40	101	73	m0	137	210	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		326	758		392	761	357	1710	846	348	1870	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.33	0.14		0.39	0.24	0.24	0.34	0.03	0.46	0.40	

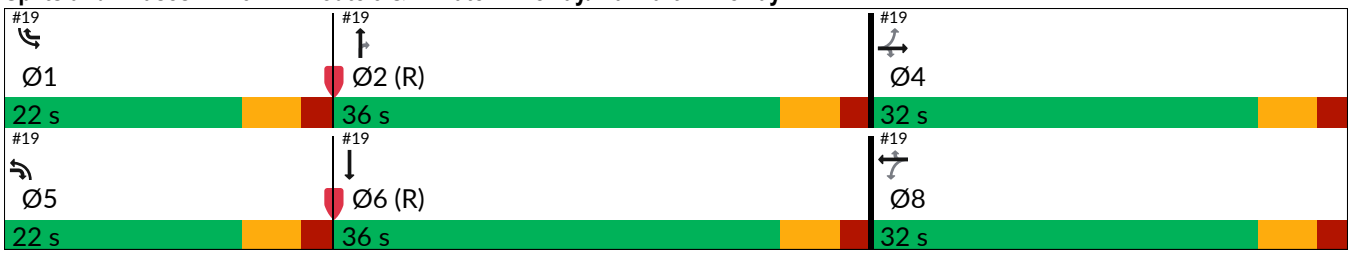
Intersection Summary

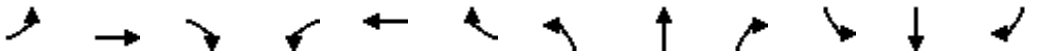
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway

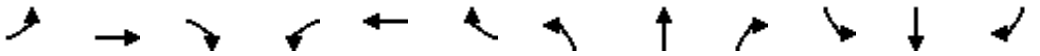




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	543	22	144	624	52
Future Volume (vph)	72	13	85	94	35	155	78	543	22	144	624	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1755	1546	1787	3455	1599	1685	3449	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1050	1615		1263	1546	1787	3455	1599	1685	3449	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	91	16	108	112	42	185	84	584	24	160	693	58
RTOR Reduction (vph)	0	0	55	0	0	79	0	0	12	0	5	0
Lane Group Flow (vph)	0	107	53	0	154	106	84	584	12	160	746	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.7	25.3		15.7	29.4	9.6	42.6	42.6	13.7	46.7	
Effective Green, g (s)		17.7	29.3		17.7	33.4	11.6	44.6	44.6	15.7	48.7	
Actuated g/C Ratio		0.20	0.33		0.20	0.37	0.13	0.50	0.50	0.17	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		206	597		248	642	230	1712	792	293	1866	
v/s Ratio Prot			0.01			0.03	0.05	0.17		c0.09	c0.22	
v/s Ratio Perm		0.10	0.02		c0.12	0.04			0.01			
v/c Ratio		0.52	0.09		0.62	0.17	0.37	0.34	0.02	0.55	0.40	
Uniform Delay, d1		32.3	21.1		33.1	19.0	35.8	13.8	11.5	33.9	12.1	
Progression Factor		1.00	1.00		1.00	1.00	1.45	0.38	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.1		4.8	0.1	0.9	0.5	0.0	2.1	0.6	
Delay (s)		34.6	21.1		37.8	19.1	53.0	5.8	11.6	36.0	12.7	
Level of Service		C	C		D	B	D	A	B	D	B	
Approach Delay (s/veh)		27.8			27.6			11.7			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

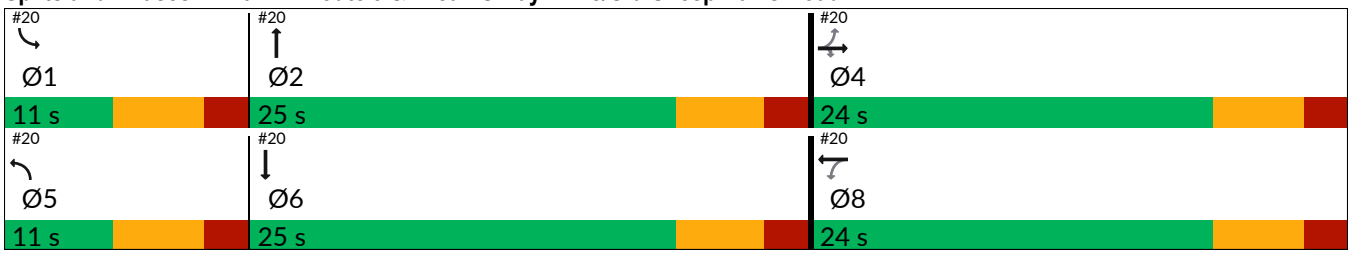


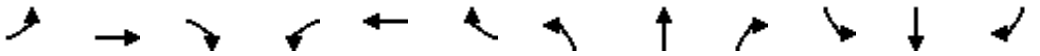
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	784	0	1	813	199
Future Volume (vph)	171	0	11	0	0	0	13	784	0	1	813	199
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850								0.970	
Flt Protected		0.950					0.950			0.950		
Satd. Flow (prot)	0	1865	1669	0	2153	0	1668	3455	0	1805	3385	0
Flt Permitted		0.757					0.950			0.950		
Satd. Flow (perm)	0	1486	1669	0	2153	0	1668	3455	0	1805	3385	0
Satd. Flow (RTOR)			164								55	
Adj. Flow (vph)	190	0	12	0	0	0	13	808	0	1	874	214
Lane Group Flow (vph)	0	190	12	0	0	0	13	808	0	1	1088	0
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0		11.0	25.0		11.0	25.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		18.3%	41.7%		18.3%	41.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		5.0	19.0		5.0	19.0	
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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
v/c Ratio		0.43	0.02				0.05	0.41		0.00	0.55	
Control Delay (s/veh)		16.5	0.1				20.2	9.8		20.0	11.9	
Queue Delay		0.0	0.0				0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.5	0.1				20.2	9.8		20.0	11.9	
Queue Length 50th (ft)		35	0				3	56		0	78	
Queue Length 95th (ft)		100	0				18	184		4	#300	
Internal Link Dist (ft)		54			538			1735			1472	
Turn Bay Length (ft)							160			200		
Base Capacity (vph)		712	885				279	1986		302	1969	
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		0.27	0.01				0.05	0.41		0.00	0.55	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 43.4
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	784	0	1	813	199
Future Volume (vph)	171	0	11	0	0	0	13	784	0	1	813	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	11	11
Total Lost time (s)		4.0	4.0				4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	1.00		1.00	0.97	
Flt Protected		0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1865	1669				1668	3455		1805	3387	
Flt Permitted		0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1487	1669				1668	3455		1805	3387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.97	0.97	0.97	0.93	0.93	0.93
Adj. Flow (vph)	190	0	12	0	0	0	13	808	0	1	874	214
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	190	3	0	0	0	13	808	0	1	1059	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		9.1	9.1				0.7	21.8		0.7	21.8	
Effective Green, g (s)		11.1	11.1				2.7	23.8		2.7	23.8	
Actuated g/C Ratio		0.22	0.22				0.05	0.48		0.05	0.48	
Clearance Time (s)		6.0	6.0				6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0				3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		332	373				90	1657		98	1625	
v/s Ratio Prot							c0.01	0.23		0.00	c0.31	
v/s Ratio Perm		c0.13	0.00									
v/c Ratio		0.57	0.01				0.14	0.49		0.01	0.65	
Uniform Delay, d1		17.1	15.0				22.3	8.8		22.2	9.8	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4	0.0				0.7	0.2		0.0	0.9	
Delay (s)		19.5	15.0				23.1	9.0		22.2	10.7	
Level of Service		B	B				C	A		C	B	
Approach Delay (s/veh)		19.2			0.0			9.2			10.7	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

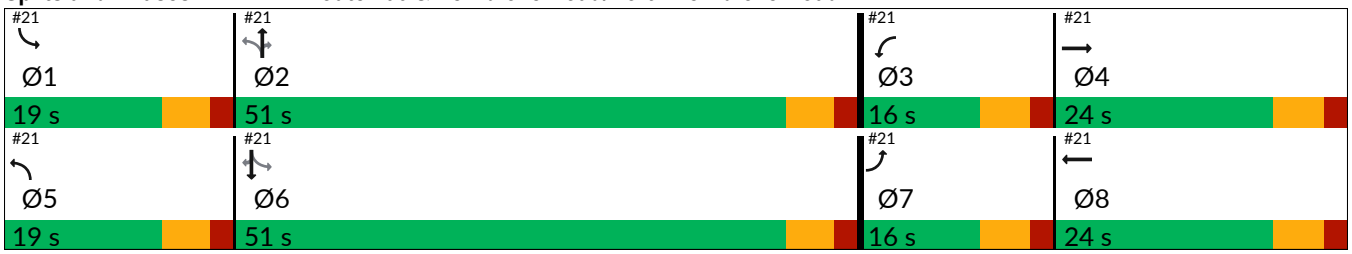
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	25	60	9	28	72	48	734	16	85	685	122
Future Volume (vph)	143	25	60	9	28	72	48	734	16	85	685	122
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.894			0.892				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1699	0	1770	1495	0	1847	1881	1599	1847	1881	1546
Flt Permitted	0.950			0.950			0.122			0.083		
Satd. Flow (perm)	1805	1699	0	1770	1495	0	237	1881	1599	161	1881	1546
Satd. Flow (RTOR)		67			80				149			149
Adj. Flow (vph)	159	28	67	10	31	80	53	816	18	94	761	136
Lane Group Flow (vph)	159	95	0	10	111	0	53	816	18	94	761	136
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.68	0.20		0.06	0.47		0.18	0.85	0.02	0.35	0.77	0.15
Control Delay (s/veh)	56.4	13.8		42.4	21.8		8.6	31.4	0.1	11.9	26.2	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.4	13.8		42.4	21.8		8.6	31.4	0.1	11.9	26.2	2.5
Queue Length 50th (ft)	92	12		6	18		11	412	0	19	358	0
Queue Length 95th (ft)	#201	60		23	70		28	#759	0	49	#654	26
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	236	493		232	389		412	965	893	377	982	878
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.19		0.04	0.29		0.13	0.85	0.02	0.25	0.77	0.15

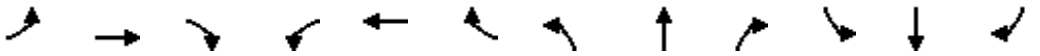
Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 92.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

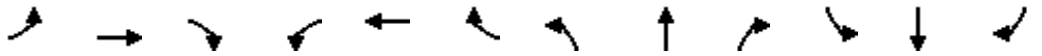




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	25	60	9	28	72	48	734	16	85	685	122
Future Volume (vph)	143	25	60	9	28	72	48	734	16	85	685	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1699		1770	1495		1847	1881	1599	1847	1881	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1805	1699		1770	1495		237	1881	1599	161	1881	1546
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)	159	28	67	10	31	80	53	816	18	94	761	136
RTOR Reduction (vph)	0	51	0	0	68	0	0	0	9	0	0	69
Lane Group Flow (vph)	159	44	0	10	43	0	53	816	9	94	761	67
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	9.9	21.7		1.3	13.1		50.7	45.4	45.4	52.3	46.2	46.2
Effective Green, g (s)	11.9	23.7		3.3	15.1		54.7	47.4	47.4	56.3	48.2	48.2
Actuated g/C Ratio	0.12	0.24		0.03	0.15		0.56	0.48	0.48	0.57	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	218	408		59	229		250	905	769	230	920	756
v/s Ratio Prot	c0.09	0.03		0.01	c0.03		0.02	c0.43		c0.03	0.40	
v/s Ratio Perm							0.10		0.01	0.20		0.04
v/c Ratio	0.73	0.11		0.17	0.19		0.21	0.90	0.01	0.41	0.83	0.09
Uniform Delay, d1	41.7	29.2		46.3	36.4		15.6	23.4	13.3	18.3	21.6	13.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.5	0.1		1.4	0.4		0.4	12.0	0.0	1.2	6.2	0.1
Delay (s)	53.3	29.3		47.6	36.8		16.1	35.5	13.3	19.5	27.8	13.5
Level of Service	D	C		D	D		B	D	B	B	C	B
Approach Delay (s/veh)		44.3			37.7			33.8			25.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	5	43	1	3	1	33	507	1	0	514	239
Future Volume (vph)	278	5	43	1	3	1	33	507	1	0	514	239
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.867			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1592	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.752			0.722			0.174					
Satd. Flow (perm)	1429	1592	0	1372	2072	0	320	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		48			2				66			266
Adj. Flow (vph)	309	6	48	2	6	2	36	557	1	0	571	266
Lane Group Flow (vph)	309	54	0	2	8	0	36	557	1	0	571	266
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.63	0.09		0.00	0.01		0.09	0.60	0.00		0.75	0.33
Control Delay (s/veh)	24.1	6.7		14.0	13.0		6.7	12.3	0.0		24.4	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	24.1	6.7		14.0	13.0		6.7	12.3	0.0		24.4	3.6
Queue Length 50th (ft)	65	1		0	1		5	111	0		117	0
Queue Length 95th (ft)	#207	23		3	5		15	185	0		#370	42
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	490	577		470	712		487	1295	1158		760	801
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.63	0.09		0.00	0.01		0.07	0.43	0.00		0.75	0.33

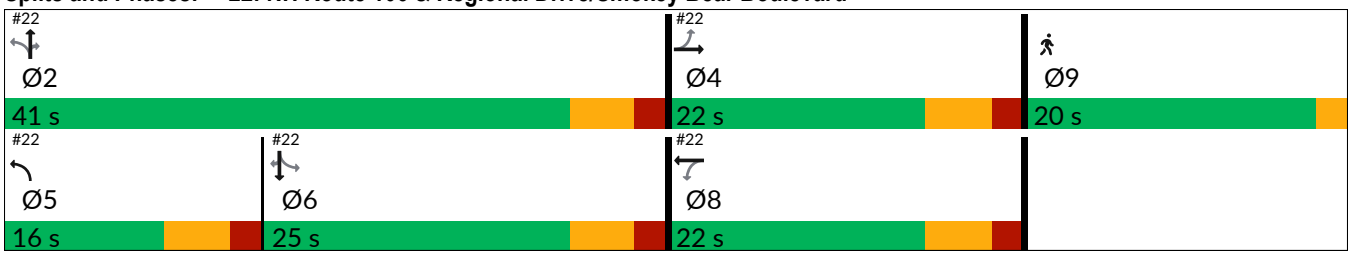
Intersection Summary
Cycle Length: 83

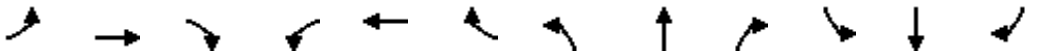
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 53.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

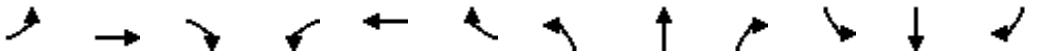




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	5	43	1	3	1	33	507	1	0	514	239
Future Volume (vph)	278	5	43	1	3	1	33	507	1	0	514	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1592		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.75	1.00		0.72	1.00		0.17	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1430	1592		1371	2073		319	1837	1615		1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.50	0.50	0.50	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	309	6	48	2	6	2	36	557	1	0	571	266
RTOR Reduction (vph)	0	33	0	0	1	0	0	0	0	0	0	162
Lane Group Flow (vph)	309	21	0	2	7	0	36	557	1	0	571	104
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		28.6	28.6	28.6		20.2	20.2
Effective Green, g (s)	18.2	18.2		18.2	18.2		30.6	30.6	30.6		22.2	22.2
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.54	0.54	0.54		0.39	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	458	510		439	664		282	989	870		710	604
v/s Ratio Prot		0.01			0.00		0.01	c0.30			c0.31	
v/s Ratio Perm	c0.22			0.00			0.06		0.00			0.07
v/c Ratio	0.67	0.04		0.00	0.01		0.13	0.56	0.00		0.80	0.17
Uniform Delay, d1	16.7	13.3		13.1	13.2		8.5	8.7	6.0		15.4	11.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	0.0		0.0	0.0		0.2	0.7	0.0		6.6	0.1
Delay (s)	20.6	13.3		13.1	13.2		8.8	9.4	6.0		22.0	11.4
Level of Service	C	B		B	B		A	A	A		C	B
Approach Delay (s/veh)		19.6			13.2			9.4			18.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

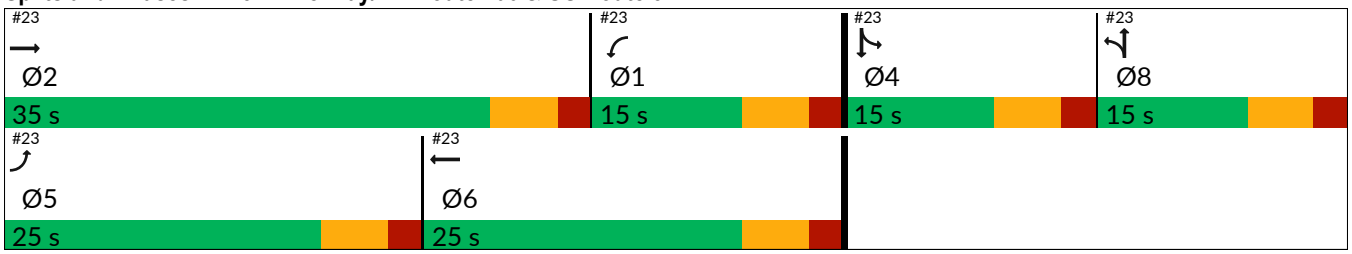


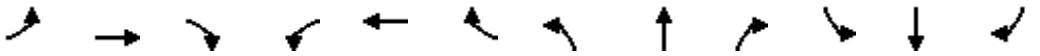
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	494	0	0	464	336	1	3	0	402	1	300
Future Volume (vph)	191	494	0	0	464	336	1	3	0	402	1	300
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt						0.850						0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Satd. Flow (RTOR)						368						368
Adj. Flow (vph)	212	549	0	0	499	361	4	12	0	447	1	333
Lane Group Flow (vph)	212	549	0	0	499	361	4	12	0	447	1	333
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		15.0	15.0	
Total Split (%)	31.3%	43.8%		18.8%	31.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.49	0.27			0.52	0.21	0.01	0.05		0.69	0.00	0.21
Control Delay (s/veh)	25.5	6.7			22.0	0.3	29.0	29.0		33.4	28.0	0.3
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.5	6.7			22.0	0.3	29.0	29.0		33.4	28.0	0.3
Queue Length 50th (ft)	56	31			66	0	0	3		66	0	0
Queue Length 95th (ft)	151	89			157	0	1	6		#203	5	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350					200	250			250		200
Base Capacity (vph)	642	2172			1283	1759	658	357		652	353	1599
Starvation Cap Reductn	0	0			0	0	0	0		0	0	0
Spillback Cap Reductn	0	0			0	0	0	0		0	0	0
Storage Cap Reductn	0	0			0	0	0	0		0	0	0
Reduced v/c Ratio	0.33	0.25			0.39	0.21	0.01	0.03		0.69	0.00	0.21

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 59.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

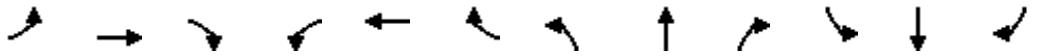




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	494	0	0	464	336	1	3	0	402	1	300
Future Volume (vph)	191	494	0	0	464	336	1	3	0	402	1	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.25	0.25	0.25	0.90	0.90	0.90
Adj. Flow (vph)	212	549	0	0	499	361	4	12	0	447	1	333
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	212	549	0	0	499	361	4	12	0	447	1	333
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.7	33.4			14.7	63.0	2.1	2.1		9.5	9.5	63.0
Effective Green, g (s)	14.7	35.4			16.7	63.0	4.1	4.1		11.5	11.5	63.0
Actuated g/C Ratio	0.23	0.56			0.27	1.00	0.07	0.07		0.18	0.18	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1941			915	1759	220	119		611	331	1599
v/s Ratio Prot	c0.12	0.16			c0.14		0.00	0.01		c0.13	0.00	
v/s Ratio Perm						0.21						c0.21
v/c Ratio	0.53	0.28			0.55	0.21	0.02	0.10		0.73	0.00	0.21
Uniform Delay, d1	21.1	7.2			19.9	0.0	27.6	27.7		24.3	21.1	0.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1			0.7	0.3	0.0	0.4		4.5	0.0	0.3
Delay (s)	22.3	7.3			20.6	0.3	27.6	28.1		28.8	21.1	0.3
Level of Service	C	A			C	A	C	C		C	C	A
Approach Delay (s/veh)		11.5			12.0			28.0			16.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	853	3	1	873	78	5	0	1	79	0	491
Future Volume (vph)	393	853	3	1	873	78	5	0	1	79	0	491
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1787	3336	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.674			0.751	
Satd. Flow (perm)	1787	3336	0	1668	3296	0	0	1281	1830	0	1352	1531
Satd. Flow (RTOR)					8				150			546
Adj. Flow (vph)	437	948	3	1	949	85	10	0	2	88	0	546
Lane Group Flow (vph)	437	951	0	1	1034	0	0	10	2	0	88	546
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.75	0.37		0.01	0.74			0.06	0.01		0.53	0.82
Control Delay (s/veh)	36.9	4.5		42.0	27.3			38.6	0.0		51.6	15.1
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	36.9	4.5		42.0	27.3			38.6	0.0		51.6	15.1
Queue Length 50th (ft)	231	68		1	276			5	0		51	0
Queue Length 95th (ft)	343	158		6	368			12	0		104	#157
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	658	2567		126	1398			166	368		176	674
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	0.66	0.37		0.01	0.74			0.06	0.01		0.50	0.81

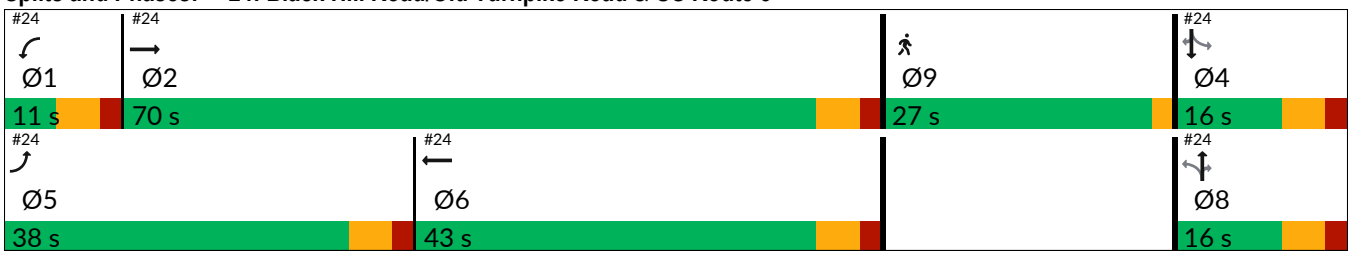
Intersection Summary
Cycle Length: 124

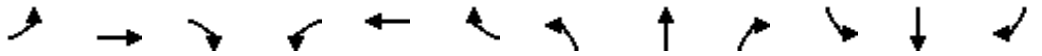
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 92.6
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

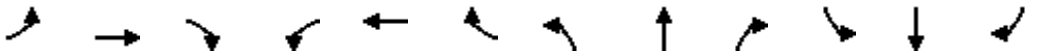




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	853	3	1	873	78	5	0	1	79	0	491
Future Volume (vph)	393	853	3	1	873	78	5	0	1	79	0	491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3334		1668	3295			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.67	1.00		0.75	1.00
Satd. Flow (perm)	1787	3334		1668	3295			1281	1830		1352	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	437	948	3	1	949	85	10	0	2	88	0	546
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	2	0	0	482
Lane Group Flow (vph)	437	951	0	1	1030	0	0	10	0	0	88	64
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	28.2	69.0		1.0	41.8			9.5	9.5		9.5	9.5
Effective Green, g (s)	30.2	71.0		3.0	43.8			11.5	11.5		11.5	11.5
Actuated g/C Ratio	0.31	0.73		0.03	0.45			0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	553	2427		51	1480			151	215		159	180
v/s Ratio Prot	c0.24	0.29		0.00	c0.31							
v/s Ratio Perm								0.01	0.00		c0.07	0.04
v/c Ratio	0.79	0.39		0.02	0.70			0.07	0.00		0.55	0.36
Uniform Delay, d1	30.8	5.0		45.8	21.5			38.2	37.9		40.6	39.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.6	0.1		0.2	1.4			0.2	0.0		4.1	1.2
Delay (s)	38.3	5.1		46.0	23.0			38.4	37.9		44.7	40.8
Level of Service	D	A		D	C			D	D		D	D
Approach Delay (s/veh)		15.6			23.0			38.3			41.4	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1211	3	4	1341	63	1	0	1	43	0	23
Future Volume (vph)	12	1211	3	4	1341	63	1	0	1	43	0	23
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4964	0	1668	3431	0	1805	1615	0	1829	1583	0
Flt Permitted	0.950			0.950			0.740			0.755		
Satd. Flow (perm)	1728	4964	0	1668	3431	0	1406	1615	0	1453	1583	0
Satd. Flow (RTOR)					6			768			179	
Adj. Flow (vph)	13	1316	3	4	1474	69	4	0	4	48	0	26
Lane Group Flow (vph)	13	1319	0	4	1543	0	4	4	0	48	26	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	33.0		37.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.4%	25.8%		28.9%			25.8%	25.8%		25.8%	25.8%	
Maximum Green (s)	6.0	27.0		31.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.12	1.09		0.01	0.66		0.01	0.00		0.16	0.06	
Control Delay (s/veh)	59.4	100.0		40.3	3.1		39.0	0.0		42.2	0.2	
Queue Delay	0.0	3.5		0.0	0.4		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.4	103.4		40.3	3.5		39.0	0.0		42.2	0.2	
Queue Length 50th (ft)	11	~481		1	23		3	0		33	0	
Queue Length 95th (ft)	33	#578		m2	70		3	0		68	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	108	1208		444	2355		318	959		329	497	
Starvation Cap Reductn	0	0		0	310		0	0		0	0	
Spillback Cap Reductn	0	27		0	0		0	0		9	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	1.12		0.01	0.75		0.01	0.00		0.15	0.05	

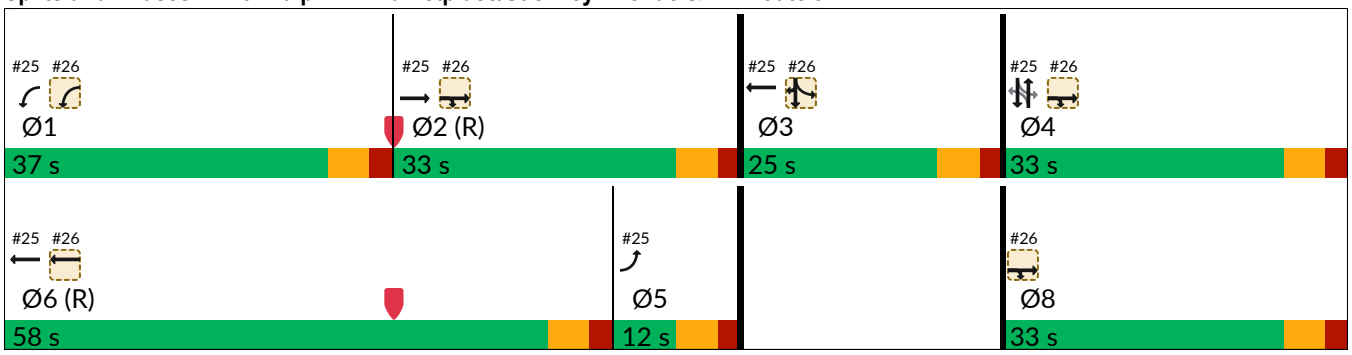
Intersection Summary
Cycle Length: 128

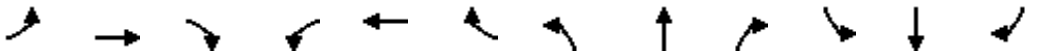
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	25.0	58.0	33.0
Total Split (%)	20%	45%	26%
Maximum Green (s)	19.0	52.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

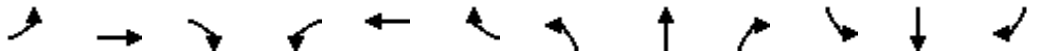




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1211	3	4	1341	63	1	0	1	43	0	23
Future Volume (vph)	12	1211	3	4	1341	63	1	0	1	43	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4963		1668	3432		1805	1615		1829	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.76	1.00	
Satd. Flow (perm)	1728	4963		1668	3432		1407	1615		1454	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.90	0.90	0.90
Adj. Flow (vph)	13	1316	3	4	1474	69	4	0	4	48	0	26
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	21	0
Lane Group Flow (vph)	13	1319	0	4	1541	0	4	1	0	48	5	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	29.2		32.0	77.8		23.8	23.8		23.8	23.8	
Effective Green, g (s)	4.4	31.2		34.0	81.8		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.03	0.24		0.27	0.64		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	59	1209		443	2193		283	325		293	319	
v/s Ratio Prot	0.01	c0.27		0.00	c0.45			0.00			0.00	
v/s Ratio Perm							0.00			c0.03		
v/c Ratio	0.22	1.09		0.01	0.70		0.01	0.00		0.16	0.02	
Uniform Delay, d1	60.1	48.4		34.6	15.1		40.9	40.8		42.2	40.9	
Progression Factor	1.00	1.00		1.14	0.23		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	54.4		0.0	0.7		0.0	0.0		0.3	0.0	
Delay (s)	62.0	102.8		39.4	4.1		40.9	40.8		42.5	41.0	
Level of Service	E	F		D	A		D	D		D	D	
Approach Delay (s/veh)		102.4			4.2			40.9			41.9	
Approach LOS		F			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1109	147	731	1202	0	0	0	0	249	0	207
Future Volume (vph)	0	1109	147	731	1202	0	0	0	0	249	0	207
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			160									179
Adj. Flow (vph)	0	1205	160	786	1292	0	0	0	0	277	0	230
Lane Group Flow (vph)	0	1205	160	786	1292	0	0	0	0	0	277	230
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				37.0	58.0					25.0	25.0	25.0
Total Split (%)				28.9%	45.3%					19.5%	19.5%	19.5%
Maximum Green (s)				31.0	52.0					19.0	19.0	19.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.55	0.18	0.91	0.77						0.95	0.56
Control Delay (s/veh)		6.3	0.8	66.2	18.4						93.4	18.4
Queue Delay		1.4	1.2	47.1	3.3						35.6	0.2
Total Delay (s/veh)		7.7	2.1	113.3	21.7						129.0	18.6
Queue Length 50th (ft)		57	0	312	273						232	37
Queue Length 95th (ft)		m43	m0	#444	#436						#405	121
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2333	936	861	1678						293	411
Starvation Cap Reductn		869	592	219	285						0	0
Spillback Cap Reductn		480	0	0	10						36	13
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.82	0.47	1.22	0.93						1.08	0.58

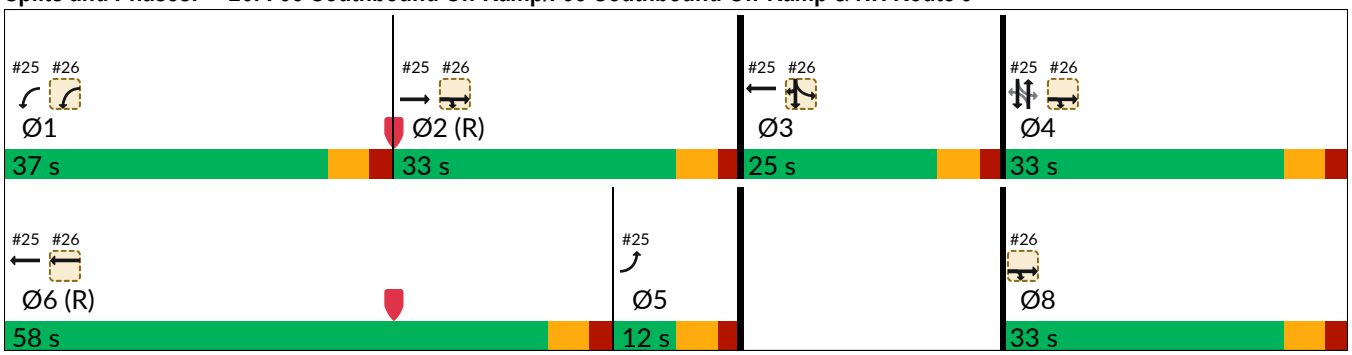
Intersection Summary
Cycle Length: 128

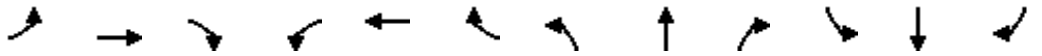
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	33.0	33.0	12.0	33.0
Total Split (%)	26%	26%	9%	26%
Maximum Green (s)	27.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
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.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

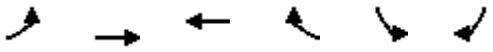




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1109	147	731	1202	0	0	0	0	249	0	207
Future Volume (vph)	0	1109	147	731	1202	0	0	0	0	249	0	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4964	1812	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4964	1812	3236	3336						1787	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1205	160	786	1292	0	0	0	0	277	0	230
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	1205	71	786	1292	0	0	0	0	0	277	80
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		53.0	53.0	32.0	58.8						19.0	19.0
Effective Green, g (s)		57.0	57.0	34.0	60.8						21.0	21.0
Actuated g/C Ratio		0.45	0.45	0.27	0.48						0.16	0.16
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2210	806	859	1584						293	262
v/s Ratio Prot		c0.24	0.04	c0.24	c0.39						c0.15	0.05
v/s Ratio Perm												
v/c Ratio		0.55	0.09	0.92	0.82						0.95	0.31
Uniform Delay, d1		26.0	20.5	45.6	28.8						52.9	47.1
Progression Factor		0.46	0.51	1.15	0.53						1.00	1.00
Incremental Delay, d2		0.0	0.0	12.5	4.1						37.8	0.7
Delay (s)		11.9	10.5	64.8	19.4						90.8	47.8
Level of Service		B	B	E	B						F	D
Approach Delay (s/veh)		11.7			36.6			0.0			71.3	
Approach LOS		B			D			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

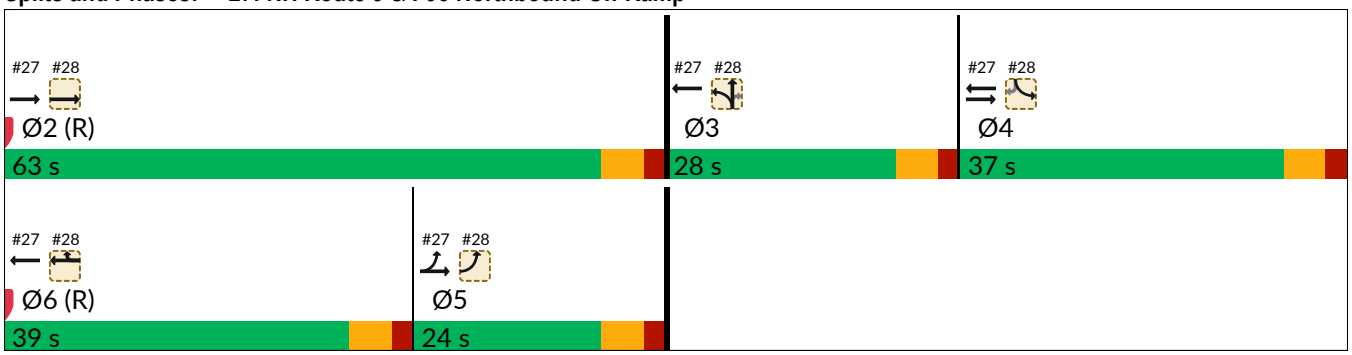


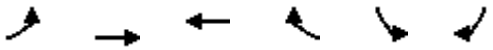
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	128	1230	1933	264	0	0				
Future Volume (vph)	128	1230	1933	264	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				115						
Adj. Flow (vph)	136	1309	2035	278	0	0				
Lane Group Flow (vph)	136	1309	2035	278	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	24.0						63.0	28.0	37.0	39.0
Total Split (%)	18.8%						49%	22%	29%	30%
Maximum Green (s)	18.0						57.0	22.0	31.0	33.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	Min	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.52	0.52	0.54	0.17						
Control Delay (s/veh)	42.5	14.2	3.9	0.0						
Queue Delay	5.5	9.1	47.1	0.0						
Total Delay (s/veh)	48.0	23.3	50.9	0.0						
Queue Length 50th (ft)	66	270	88	0						
Queue Length 95th (ft)	m134	m336	m66	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	260	2502	3744	1652						
Starvation Cap Reductn	76	1164	1891	0						
Spillback Cap Reductn	0	355	1045	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.74	0.98	1.10	0.17						

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

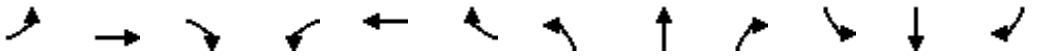




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	1230	1933	264	0	0
Future Volume (vph)	128	1230	1933	264	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.94	0.94	0.95	0.95	0.90	0.90
Adj. Flow (vph)	136	1309	2035	278	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	136	1309	2035	278	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	18.0	94.0	98.0	128.0		
Effective Green, g (s)	20.0	96.0	100.0	128.0		
Actuated g/C Ratio	0.16	0.75	0.78	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	260	2502	3744	1652		
v/s Ratio Prot	0.08	c0.39	c0.42			
v/s Ratio Perm				0.17		
v/c Ratio	0.52	0.52	0.54	0.17		
Uniform Delay, d1	49.6	6.6	5.3	0.0		
Progression Factor	0.73	2.03	0.71	1.00		
Incremental Delay, d2	1.5	0.2	0.0	0.0		
Delay (s)	37.5	13.5	3.8	0.0		
Level of Service	D	B	A	A		
Approach Delay (s/veh)		15.8	3.3		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

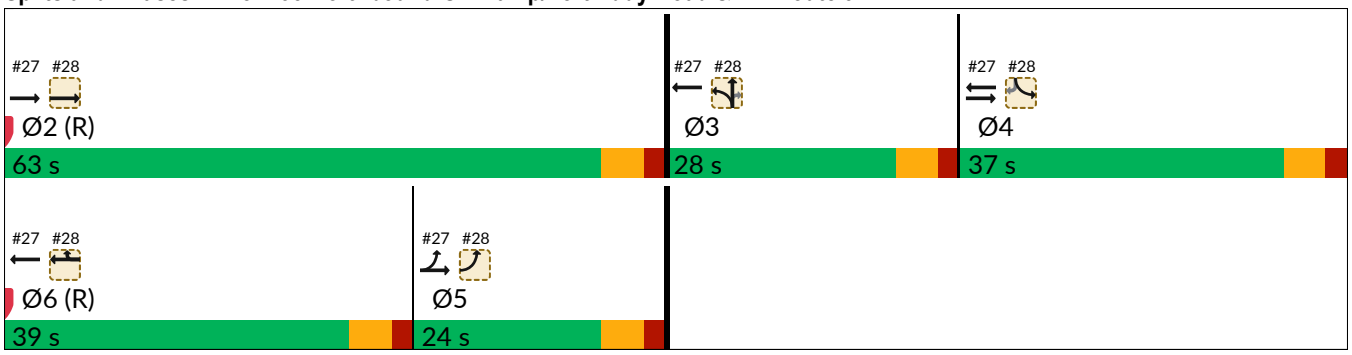


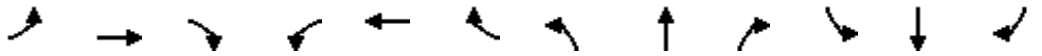
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	743	0	0	1205	579	152	378	648	514	0	840
Future Volume (vph)	487	743	0	0	1205	579	152	378	648	514	0	840
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.931	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1787	3188	1504	3502	0	1669
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1787	3188	1504	3502	0	1669
Satd. Flow (RTOR)						495		100	128			372
Adj. Flow (vph)	502	766	0	0	1296	623	169	420	720	547	0	894
Lane Group Flow (vph)	502	766	0	0	1296	623	169	780	360	547	0	894
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	24.0	63.0			39.0	39.0	28.0	28.0	28.0	37.0		37.0
Total Split (%)	18.8%	49.2%			30.5%	30.5%	21.9%	21.9%	21.9%	28.9%		28.9%
Maximum Green (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		0.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lead/Lag	Lag				Lead	Lead	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	Min	Min	Min	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.99	0.48			1.37	0.77	0.50	1.15	0.93	0.61		1.30
Control Delay (s/veh)	77.4	19.4			213.3	23.2	52.7	123.7	64.8	45.1		170.7
Queue Delay	35.9	1.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	113.3	20.4			213.3	23.2	52.7	123.7	64.8	45.1		170.7
Queue Length 50th (ft)	185	197			~744	153	128	~381	221	206		~704
Queue Length 95th (ft)	#326	263			m#857	m269	203	#519	#435	267		#960
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	505	1592			944	811	335	679	386	902		686
Starvation Cap Reductn	92	528			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.22	0.72			1.37	0.77	0.50	1.15	0.93	0.61		1.30

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

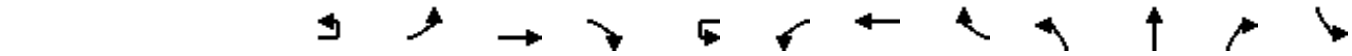




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	743	0	0	1205	579	152	378	648	514	0	840
Future Volume (vph)	487	743	0	0	1205	579	152	378	648	514	0	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1787	3187	1504	3502		1669
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1787	3187	1504	3502		1669
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	502	766	0	0	1296	623	169	420	720	547	0	894
RTOR Reduction (vph)	0	0	0	0	0	360	0	81	104	0	0	282
Lane Group Flow (vph)	502	766	0	0	1296	263	169	699	256	547	0	612
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
Effective Green, g (s)	20.0	59.0			35.0	35.0	24.0	24.0	24.0	33.0		31.0
Actuated g/C Ratio	0.16	0.46			0.27	0.27	0.19	0.19	0.19	0.26		0.24
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	505	1592			944	451	335	597	282	902		404
v/s Ratio Prot	c0.16	0.22			c0.38	0.16	0.09	c0.22		0.16		
v/s Ratio Perm									0.17			c0.37
v/c Ratio	0.99	0.48			1.37	0.58	0.50	1.17	0.91	0.61		1.52
Uniform Delay, d1	53.9	23.9			46.5	40.2	46.7	52.0	50.9	41.8		48.5
Progression Factor	0.75	0.77			1.21	2.11	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	35.5	0.9			171.5	3.0	1.2	93.7	30.4	1.2		244.2
Delay (s)	76.0	19.2			227.9	87.9	47.9	145.7	81.4	42.9		292.7
Level of Service	E	B			F	F	D	F	F	D		F
Approach Delay (s/veh)		41.7			182.4			115.3			197.9	
Approach LOS		D			F			F			F	

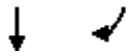
Intersection Summary			
HCM 2000 Control Delay (s/veh)	141.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1343	480	1	30	1411	3	321	0	109	15
Future Volume (vph)	1	81	1343	480	1	30	1411	3	321	0	109	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950				0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	3455	0	0	1805	1669	0
Flt Permitted		0.950				0.950				0.668		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	3455	0	0	1269	1669	0
Satd. Flow (RTOR)				227							127	
Adj. Flow (vph)	1	84	1385	495	1	33	1551	3	373	0	127	22
Lane Group Flow (vph)	0	85	1385	495	0	34	1554	0	0	373	127	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	12.0	21.0		33.0	33.0	33.0	33.0
Total Split (s)	14.0	14.0	76.0	76.0	14.0	14.0	76.0		38.0	38.0	38.0	38.0
Total Split (%)	10.9%	10.9%	59.4%	59.4%	10.9%	10.9%	59.4%		29.7%	29.7%	29.7%	29.7%
Maximum Green (s)	8.0	8.0	70.0	70.0	8.0	8.0	70.0		32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0			8.0		20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0			0		0	0	0	0
v/c Ratio		0.64	0.68	0.51		0.27	0.83			1.03	0.22	
Control Delay (s/veh)		66.4	26.2	13.4		50.6	36.1			101.6	7.0	
Queue Delay		0.0	48.8	0.0		0.0	2.3			0.0	4.9	
Total Delay (s/veh)		66.4	75.0	13.4		50.6	38.5			101.6	12.0	
Queue Length 50th (ft)		64	563	191		28	417			~349	0	
Queue Length 95th (ft)		m101	m610	m235		m44	785			#511	43	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150						
Base Capacity (vph)		135	2031	970		135	1943			361	565	
Starvation Cap Reductn		0	0	0		0	257			0	0	
Spillback Cap Reductn		0	789	0		0	0			0	372	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.63	1.12	0.51		0.25	0.92			1.03	0.66	

Intersection Summary
Cycle Length: 128

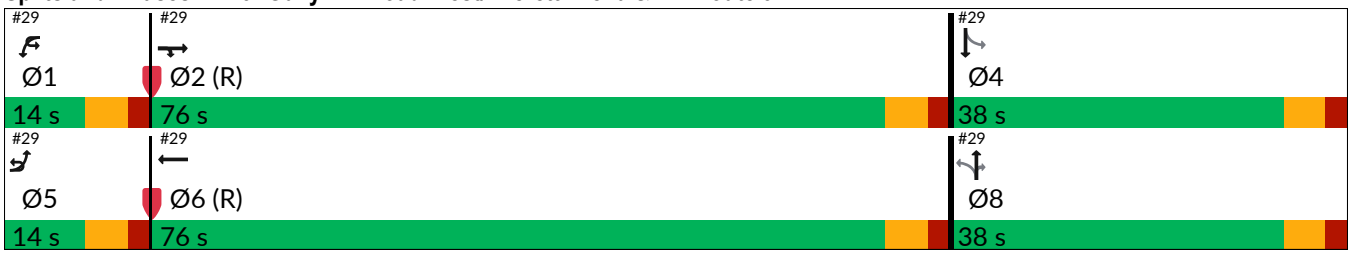


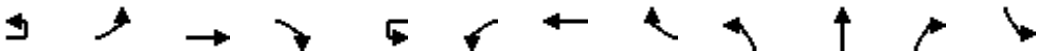
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Lane Util. Factor	1.00	1.00
Frt	0.897	
Flt Protected	0.989	
Satd. Flow (prot)	1729	0
Flt Permitted	0.708	
Satd. Flow (perm)	1238	0
Satd. Flow (RTOR)	73	
Adj. Flow (vph)	1	73
Lane Group Flow (vph)	96	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	33.0	
Total Split (s)	38.0	
Total Split (%)	29.7%	
Maximum Green (s)	32.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	4.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	20.0	
Pedestrian Calls (#/hr)	0	
v/c Ratio	0.24	
Control Delay (s/veh)	13.8	
Queue Delay	9.1	
Total Delay (s/veh)	22.9	
Queue Length 50th (ft)	15	
Queue Length 95th (ft)	32	
Internal Link Dist (ft)	277	
Turn Bay Length (ft)		
Base Capacity (vph)	404	
Starvation Cap Reductn	0	
Spillback Cap Reductn	270	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.72	

Intersection Summary

Actuated Cycle Length: 128
Offset: 105 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9

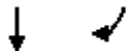




Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1343	480	1	30	1411	3	321	0	109	15
Future Volume (vph)	1	81	1343	480	1	30	1411	3	321	0	109	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95			1.00	1.00	
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	3454			1805	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.67	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	3454			1269	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1385	495	1	33	1551	3	373	0	127	22
RTOR Reduction (vph)	0	0	0	98	0	0	0	0	0	0	91	0
Lane Group Flow (vph)	0	85	1385	397	0	34	1554	0	0	373	36	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Actuated Green, G (s)		7.9	70.8	70.8		4.8	67.7			34.4	34.4	
Effective Green, g (s)		9.9	72.8	72.8		6.8	69.7			36.4	36.4	
Actuated g/C Ratio		0.08	0.57	0.57		0.05	0.54			0.28	0.28	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0			6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)		133	1965	848		91	1880			360	474	
v/s Ratio Prot		c0.05	c0.40	0.27		0.02	c0.45					
v/s Ratio Perm										c0.29	0.02	
v/c Ratio		0.64	0.70	0.47		0.37	0.83			1.04	0.08	
Uniform Delay, d1		57.3	19.9	16.2		58.5	24.1			45.8	33.5	
Progression Factor		0.88	1.31	1.45		0.82	1.35			1.00	1.00	
Incremental Delay, d2		6.8	1.5	1.3		2.1	3.6			57.1	0.1	
Delay (s)		57.4	27.5	24.8		50.3	36.1			102.9	33.6	
Level of Service		E	C	C		D	D			F	C	
Approach Delay (s/veh)			28.1				36.4			85.3		
Approach LOS			C				D			F		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.71	
Satd. Flow (perm)	1239	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	52	0
Lane Group Flow (vph)	44	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	34.4	
Effective Green, g (s)	36.4	
Actuated g/C Ratio	0.28	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	352	
v/s Ratio Prot		
v/s Ratio Perm	0.04	
v/c Ratio	0.12	
Uniform Delay, d1	34.0	
Progression Factor	1.00	
Incremental Delay, d2	0.2	
Delay (s)	34.1	
Level of Service	C	
Approach Delay (s/veh)	34.1	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1369	93	1	368	1257	27	175	6	231	14	0
Future Volume (vph)	6	1369	93	1	368	1257	27	175	6	231	14	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.990				0.997			0.854			0.850
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3421	0	0	1728	3445	0	1787	1607	0	1793	1605
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3421	0	0	1728	3445	0	1787	1607	0	1793	1605
Satd. Flow (RTOR)		7				2			263			411
Adj. Flow (vph)	6	1426	97	1	391	1337	29	199	7	263	19	0
Lane Group Flow (vph)	6	1523	0	0	392	1366	0	199	270	0	19	17
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	12.0	57.0		14.0	14.0	59.0		14.0	16.0		12.0	14.0
Total Split (%)	9.4%	44.5%		10.9%	10.9%	46.1%		10.9%	12.5%		9.4%	10.9%
Maximum Green (s)	6.0	51.0		8.0	8.0	53.0		8.0	10.0		6.0	8.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.05	1.07			1.03	0.61		0.48	0.48		0.15	0.04
Control Delay (s/veh)	51.7	96.2			101.6	16.1		48.0	8.8		58.0	0.2
Queue Delay	0.0	11.8			0.0	0.1		2.8	0.0		0.0	0.0
Total Delay (s/veh)	51.7	108.0			101.6	16.2		50.8	8.8		58.0	0.2
Queue Length 50th (ft)	4	~763			306	243		149	5		16	0
Queue Length 95th (ft)	m7	#908			#607	544		223	74		35	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	112	1420			382	2225		417	567		127	504
Starvation Cap Reductn	0	166			0	0		0	0		0	0
Spillback Cap Reductn	0	0			0	178		127	0		0	58
Storage Cap Reductn	0	0			0	0		0	0		0	0
Reduced v/c Ratio	0.05	1.21			1.03	0.67		0.69	0.48		0.15	0.04

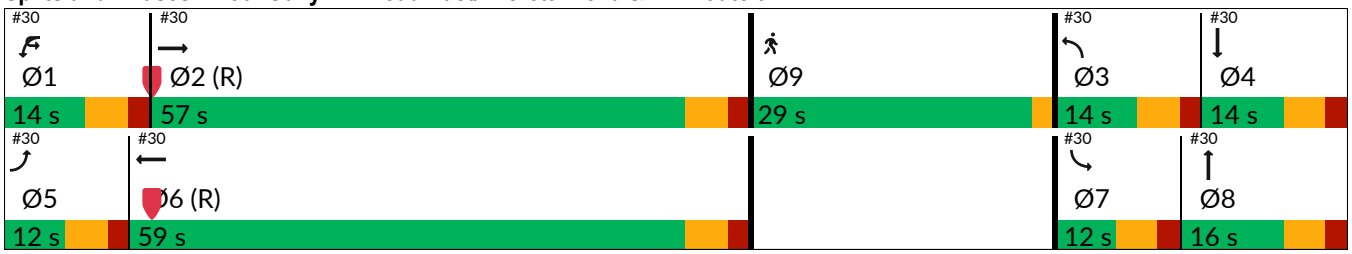
Intersection Summary
Cycle Length: 128

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		23%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 128
Offset: 48 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



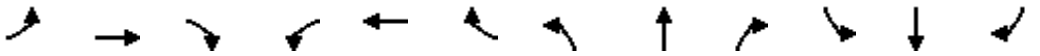
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1369	93	1	368	1257	27	175	6	231	14	0
Future Volume (vph)	6	1369	93	1	368	1257	27	175	6	231	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1728	3422			1728	3444		1787	1606		1793	1605
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1728	3422			1728	3444		1787	1606		1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1426	97	1	391	1337	29	199	7	262	19	0
RTOR Reduction (vph)	0	4	0	0	0	1	0	0	203	0	0	16
Lane Group Flow (vph)	6	1519	0	0	392	1365	0	199	67	0	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.4	47.4			26.3	72.3		27.9	27.0		3.3	2.4
Effective Green, g (s)	3.4	49.4			28.3	74.3		29.9	29.0		5.3	4.4
Actuated g/C Ratio	0.03	0.39			0.22	0.58		0.23	0.23		0.04	0.03
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45	1320			382	1999		417	363		74	55
v/s Ratio Prot	0.00	c0.44			c0.23	0.40		c0.11	c0.04		0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.13	1.15			1.03	0.68		0.48	0.18		0.26	0.01
Uniform Delay, d1	60.9	39.3			49.9	18.7		42.3	39.9		59.4	59.7
Progression Factor	0.91	1.53			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	75.0			52.9	1.9		0.9	0.2		1.8	0.1
Delay (s)	56.2	135.1			102.8	20.6		43.2	40.2		61.3	59.8
Level of Service	E	F			F	C		D	D		E	E
Approach Delay (s/veh)		134.8				38.9			41.5			60.6
Approach LOS		F				D			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	78.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

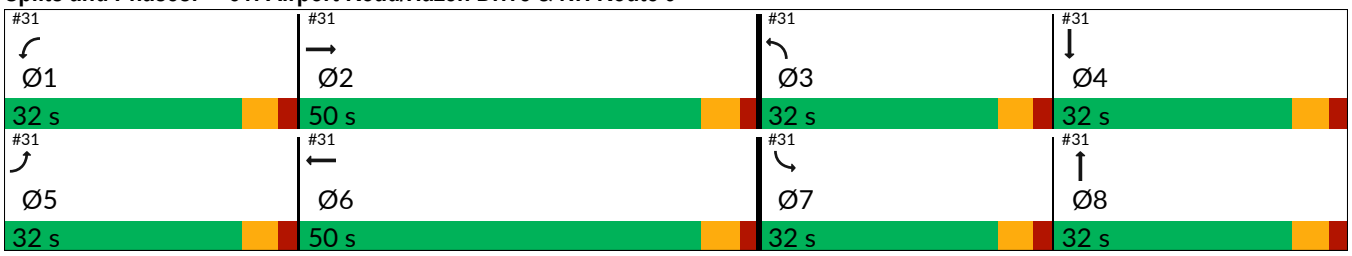


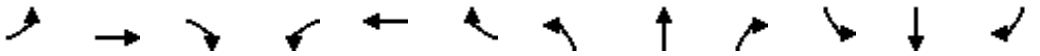
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1212	241	172	1257	61	215	68	251	21	51	78
Future Volume (vph)	57	1212	241	172	1257	61	215	68	251	21	51	78
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			177			157			279			157
Adj. Flow (vph)	60	1276	254	187	1366	66	239	76	279	23	57	87
Lane Group Flow (vph)	60	1276	254	187	1366	66	239	76	279	23	57	87
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.33	0.89	0.16	0.61	0.77	0.04	0.70	0.18	0.17	0.16	0.31	0.06
Control Delay (s/veh)	56.8	42.5	0.2	54.4	30.1	0.0	55.8	38.3	0.2	56.6	56.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.8	42.5	0.2	54.4	30.1	0.0	55.8	38.3	0.2	56.6	56.6	0.1
Queue Length 50th (ft)	43	480	0	133	468	0	169	47	0	16	41	0
Queue Length 95th (ft)	94	#778	0	224	#681	0	286	98	0	48	90	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	451	1436	1599	451	1776	1652	437	495	1599	441	464	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.89	0.16	0.41	0.77	0.04	0.55	0.15	0.17	0.05	0.12	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 113.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1212	241	172	1257	61	215	68	251	21	51	78
Future Volume (vph)	57	1212	241	172	1257	61	215	68	251	21	51	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	1276	254	187	1366	66	239	76	279	23	57	87
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	1276	254	187	1366	66	239	76	279	23	57	87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.8	46.7	117.3	17.4	56.3	117.3	20.4	24.8	117.3	4.4	8.8	117.3
Effective Green, g (s)	9.8	48.7	117.3	19.4	58.3	117.3	22.4	26.8	117.3	6.4	10.8	117.3
Actuated g/C Ratio	0.08	0.42	1.00	0.17	0.50	1.00	0.19	0.23	1.00	0.05	0.09	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	149	1434	1599	295	1717	1652	329	415	1599	95	169	1561
v/s Ratio Prot	0.03	c0.37		c0.10	c0.40		c0.14	0.04		0.01	c0.03	
v/s Ratio Perm			0.16			0.04			0.17			0.06
v/c Ratio	0.40	0.89	0.16	0.63	0.80	0.04	0.73	0.18	0.17	0.24	0.34	0.06
Uniform Delay, d1	51.0	31.8	0.0	45.6	24.5	0.0	44.6	36.4	0.0	53.1	49.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	7.2	0.2	4.4	2.6	0.0	7.8	0.2	0.2	1.3	1.2	0.1
Delay (s)	52.8	39.0	0.2	50.0	27.2	0.0	52.3	36.6	0.2	54.5	51.1	0.1
Level of Service	D	D	A	D	C	A	D	D	A	D	D	A
Approach Delay (s/veh)		33.3			28.7			25.9			25.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	117.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	68	1048	39	36	1183	257	125	128	58	332	78
Future Volume (vph)	1	68	1048	39	36	1183	257	125	128	58	332	78
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.995			0.973			0.953			0.944
Flt Protected		0.950			0.950			0.950			0.950	0.985
Satd. Flow (prot)	0	1787	3319	0	1668	3362	0	1685	1690	0	1600	1678
Flt Permitted		0.950			0.950			0.950			0.950	0.985
Satd. Flow (perm)	0	1787	3319	0	1668	3362	0	1685	1690	0	1600	1678
Satd. Flow (RTOR)			2			17			13			18
Adj. Flow (vph)	1	72	1115	41	39	1272	276	139	142	64	357	84
Lane Group Flow (vph)	0	73	1156	0	39	1548	0	139	206	0	275	265
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.35	0.90		0.24	1.32		0.45	0.64		0.77	0.68
Control Delay (s/veh)		47.9	42.1		47.6	181.7		42.2	45.8		54.7	45.5
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		47.9	42.1		47.6	181.7		42.2	45.8		54.7	45.5
Queue Length 50th (ft)		46	~406		24	~725		82	118		183	161
Queue Length 95th (ft)		93	#600		59	#932		146	202		#349	#296
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		307	1279		287	1169		375	386		356	388
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		0.24	0.90		0.14	1.32		0.37	0.53		0.77	0.68

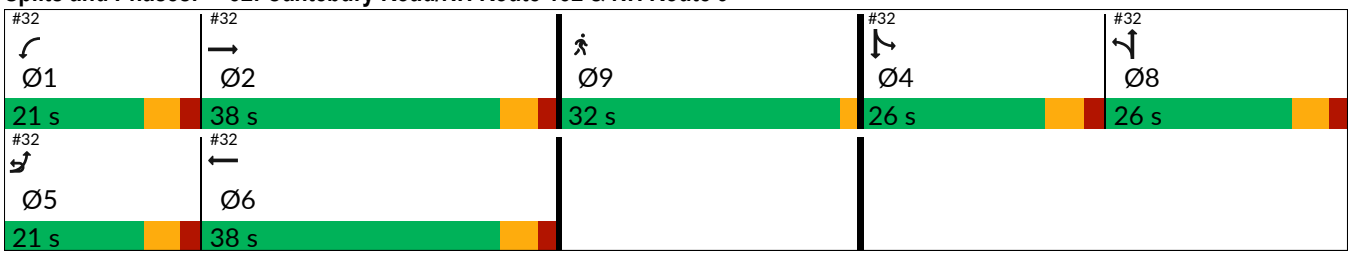
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	92	
Future Volume (vph)	92	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	99	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 99.9
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



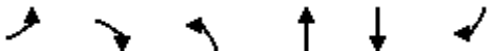
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	68	1048	39	36	1183	257	125	128	58	332	78
Future Volume (vph)	1	68	1048	39	36	1183	257	125	128	58	332	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	0.99		1.00	0.97		1.00	0.95		1.00	0.94
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (prot)		1787	3318		1668	3363		1685	1691		1600	1678
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (perm)		1787	3318		1668	3363		1685	1691		1600	1678
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93
Adj. Flow (vph)	1	72	1115	41	39	1272	276	139	142	64	357	84
RTOR Reduction (vph)	0	0	1	0	0	11	0	0	11	0	0	14
Lane Group Flow (vph)	0	73	1155	0	39	1537	0	139	195	0	275	251
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		8.0	36.4		5.1	33.5		16.5	16.5		20.2	20.2
Effective Green, g (s)		10.0	38.4		7.1	35.5		18.5	18.5		22.2	22.2
Actuated g/C Ratio		0.10	0.38		0.07	0.35		0.18	0.18		0.22	0.22
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		174	1246		115	1168		305	306		347	364
v/s Ratio Prot		c0.04	c0.35		0.02	c0.46		0.08	c0.12		c0.17	0.15
v/s Ratio Perm												
v/c Ratio		0.42	0.93		0.34	1.32		0.46	0.64		0.79	0.69
Uniform Delay, d1		43.4	30.6		45.3	33.4		37.4	38.8		37.8	36.8
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.6	11.8		1.8	148.3		1.1	4.3		11.7	5.4
Delay (s)		45.0	42.3		47.1	181.6		38.4	43.1		49.5	42.2
Level of Service		D	D		D	F		D	D		D	D
Approach Delay (s/veh)			42.5			178.3			41.2			45.9
Approach LOS			D			F			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	101.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	92
Future Volume (vph)	92
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	99
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



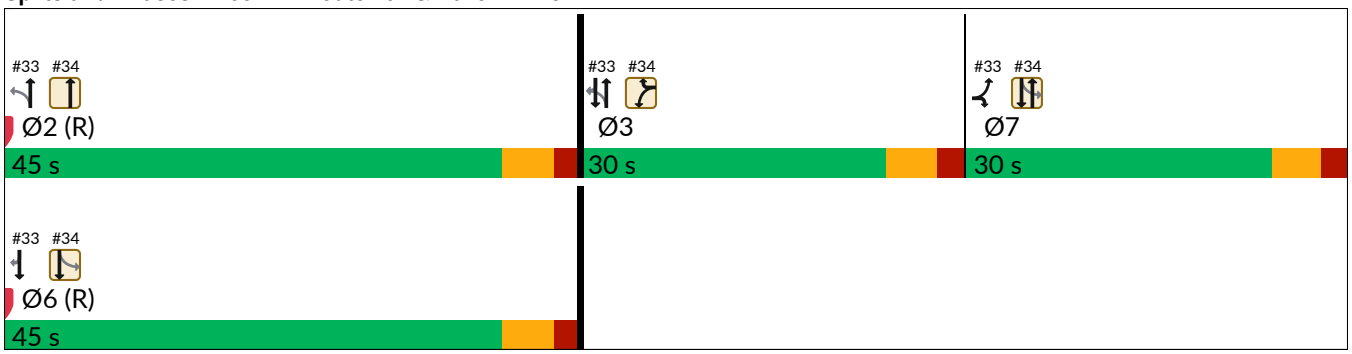
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	156	23	14	463	651	159			
Future Volume (vph)	156	23	14	463	651	159			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.998					
Satd. Flow (prot)	1805	1615	0	1815	1900	1561			
Flt Permitted	0.950			0.976					
Satd. Flow (perm)	1805	1615	0	1775	1900	1561			
Satd. Flow (RTOR)		26				164			
Adj. Flow (vph)	173	26	16	514	671	164			
Lane Group Flow (vph)	173	26	0	530	671	164			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.40	0.06		0.44	0.52	0.15			
Control Delay (s/veh)	36.3	11.8		9.1	11.7	3.1			
Queue Delay	0.0	0.0		0.0	0.7	0.0			
Total Delay (s/veh)	36.3	11.8		9.1	12.5	3.1			
Queue Length 50th (ft)	97	0		148	214	14			
Queue Length 95th (ft)	161	22		214	342	m38			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	455	427		1217	1303	1122			
Starvation Cap Reductn	0	0		0	323	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.38	0.06		0.44	0.68	0.15			

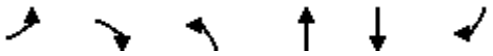
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive

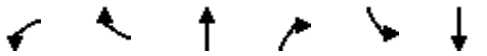




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	156	23	14	463	651	159
Future Volume (vph)	156	23	14	463	651	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1805	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	1805	1615		1775	1900	1561
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.97	0.97
Adj. Flow (vph)	173	26	16	514	671	164
RTOR Reduction (vph)	0	20	0	0	0	52
Lane Group Flow (vph)	173	6	0	530	671	112
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	23.2	23.2		69.8	69.8	69.8
Effective Green, g (s)	25.2	25.2		71.8	71.8	71.8
Actuated g/C Ratio	0.24	0.24		0.68	0.68	0.68
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	433	387		1213	1299	1067
v/s Ratio Prot	c0.10	0.00			c0.35	
v/s Ratio Perm				0.30		0.07
v/c Ratio	0.40	0.02		0.44	0.52	0.11
Uniform Delay, d1	33.5	30.4		7.5	8.1	5.7
Progression Factor	1.00	1.00		1.00	1.21	3.03
Incremental Delay, d2	0.6	0.0		0.3	0.3	0.0
Delay (s)	34.1	30.5		7.7	10.1	17.2
Level of Service	C	C		A	B	B
Approach Delay (s/veh)	33.7			7.7	11.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



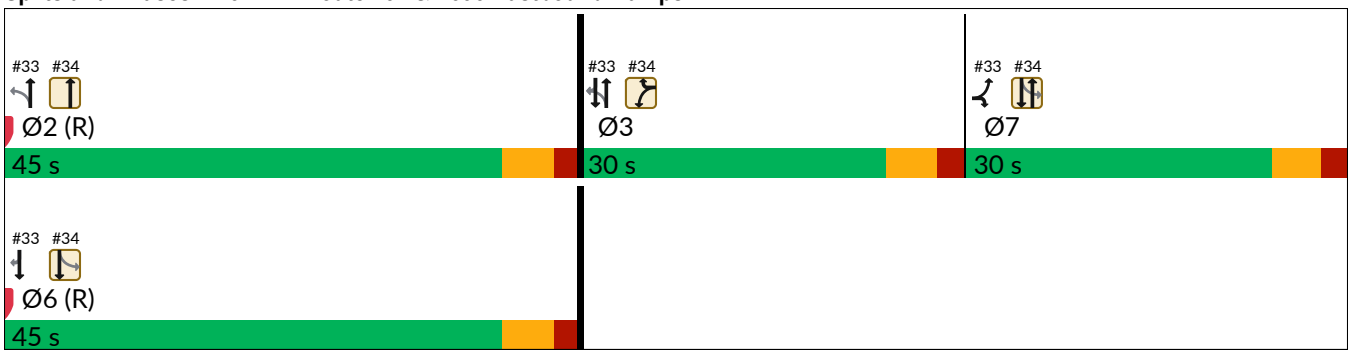
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	324	80	523	98	43	494			
Future Volume (vph)	324	80	523	98	43	494			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.976						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3372	0	1728	1818			
Flt Permitted	0.950				0.360				
Satd. Flow (perm)	1805	1615	3372	0	655	1818			
Satd. Flow (RTOR)		72	45						
Adj. Flow (vph)	345	85	581	109	46	526			
Lane Group Flow (vph)	345	85	690	0	46	526			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.71	0.17	0.31		0.11	0.44			
Control Delay (s/veh)	44.1	10.6	5.4		7.4	10.3			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	44.1	10.6	5.6		7.4	10.3			
Queue Length 50th (ft)	201	6	66		11	171			
Queue Length 95th (ft)	#349	46	74		23	209			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	491	492	2316		447	1241			
Starvation Cap Reductn	0	0	811		0	0			
Spillback Cap Reductn	0	0	0		0	48			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.70	0.17	0.46		0.10	0.44			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	324	80	523	98	43	494
Future Volume (vph)	324	80	523	98	43	494
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3373		1728	1818
Flt Permitted	0.95	1.00	1.00		0.36	1.00
Satd. Flow (perm)	1805	1615	3373		654	1818
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94
Adj. Flow (vph)	345	85	581	109	46	526
RTOR Reduction (vph)	0	53	16	0	0	0
Lane Group Flow (vph)	345	32	674	0	46	526
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	26.4	26.4	66.6		66.6	66.6
Effective Green, g (s)	28.4	28.4	68.6		68.6	68.6
Actuated g/C Ratio	0.27	0.27	0.65		0.65	0.65
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	488	436	2203		427	1187
v/s Ratio Prot	c0.19	0.02	0.20			c0.29
v/s Ratio Perm					0.07	
v/c Ratio	0.71	0.07	0.31		0.11	0.44
Uniform Delay, d1	34.5	28.5	7.9		6.8	8.9
Progression Factor	1.00	1.00	0.69		1.00	1.00
Incremental Delay, d2	4.6	0.1	0.1		0.1	0.3
Delay (s)	39.2	28.6	5.5		6.9	9.1
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	37.1		5.5			9.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

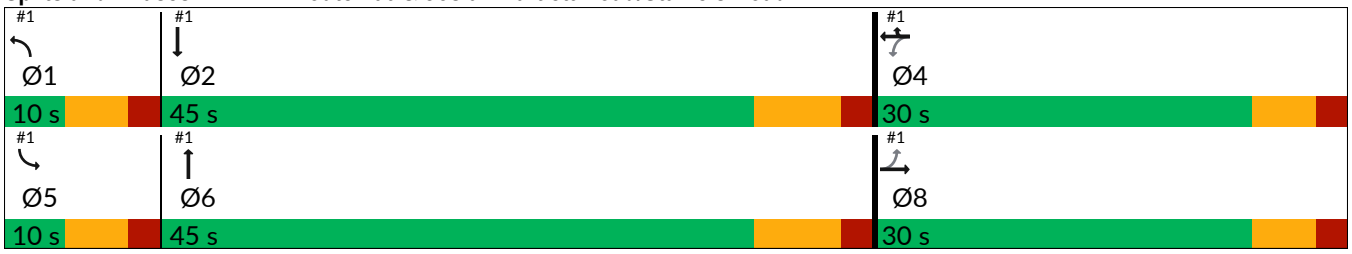
c Critical Lane Group

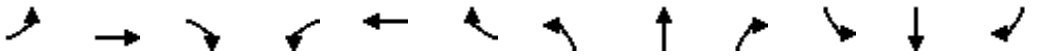
2027 Opening Year Build Weekday Morning Peak-Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Future Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.907				0.850		0.987				
Flt Protected		0.988			0.950					0.950		
Satd. Flow (prot)	0	1622	0	0	1736	1553	1776	3330	0	1736	3471	0
Flt Permitted		0.916			0.747					0.950		
Satd. Flow (perm)	0	1503	0	0	1365	1553	1776	3330	0	1736	3471	0
Satd. Flow (RTOR)		11				135		16				
Adj. Flow (vph)	4	1	11	133	0	20	0	413	40	33	1310	3
Lane Group Flow (vph)	0	16	0	0	133	20	0	453	0	33	1313	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.05			0.41	0.04		0.22		0.26	0.55	
Control Delay (s/veh)		12.7			24.3	0.2		8.4		33.9	8.2	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		12.7			24.3	0.2		8.4		33.9	8.2	
Queue Length 50th (ft)		1			39	0		32		11	133	
Queue Length 95th (ft)		12			82	0		87		38	217	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		730			658	818		2408		129	2506	
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			0.20	0.02		0.19		0.26	0.52	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 56.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

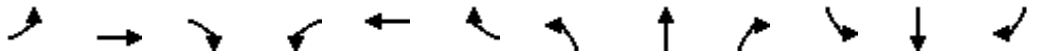
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Future Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.91			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1621			1736	1553		3329		1736	3470	
Flt Permitted		0.92			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1504			1365	1553		3329		1736	3470	
Peak-hour factor, PHF	0.75	0.75	0.75	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86
Adj. Flow (vph)	4	1	11	133	0	20	0	413	40	33	1310	3
RTOR Reduction (vph)	0	9	0	0	0	16	0	7	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	133	4	0	446	0	33	1313	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		9.2			9.2	9.2		31.3		1.4	38.7	
Effective Green, g (s)		11.2			11.2	11.2		33.3		1.4	40.7	
Actuated g/C Ratio		0.18			0.18	0.18		0.54		0.02	0.66	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		274			248	283		1805		39	2300	
v/s Ratio Prot						0.00		0.13		0.02	c0.38	
v/s Ratio Perm		0.00			c0.10							
v/c Ratio		0.03			0.54	0.01		0.25		0.85	0.57	
Uniform Delay, d1		20.6			22.7	20.6		7.4		29.9	5.6	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			2.2	0.0		0.1		84.9	0.3	
Delay (s)		20.7			25.0	20.6		7.5		114.7	6.0	
Level of Service		C			C	C		A		F	A	
Approach Delay (s/veh)		20.7			24.4			7.5			8.6	
Approach LOS		C			C			A			A	

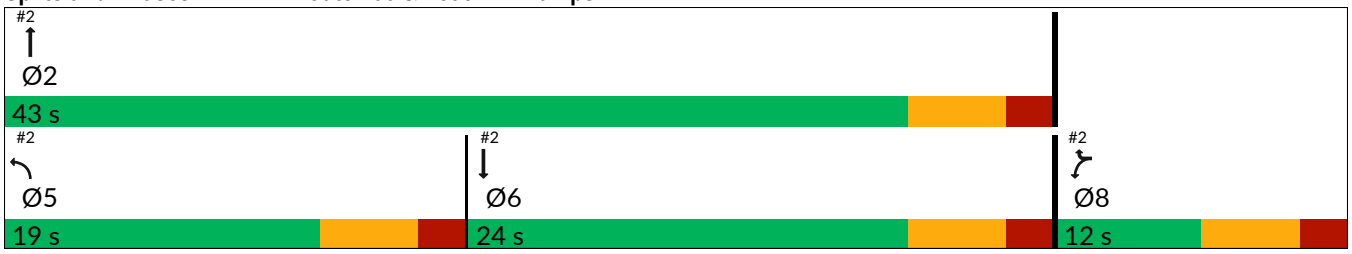
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	15.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

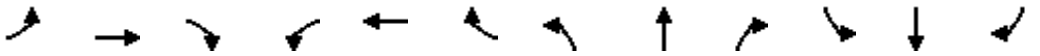


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	13	332	534	0	0	618	1079
Future Volume (vph)	0	0	0	3	0	13	332	534	0	0	618	1079
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Satd. Flow (RTOR)						179						756
Adj. Flow (vph)	0	0	0	4	0	19	426	685	0	0	719	1255
Lane Group Flow (vph)	0	0	0	4	0	19	426	685	0	0	719	1255
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.01		0.04	0.42	0.23			0.51	0.83
Control Delay (s/veh)				17.3		0.2	13.4	1.1			10.8	6.4
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				17.3		0.2	13.4	1.1			10.8	6.4
Queue Length 50th (ft)				1		0	35	0			50	0
Queue Length 95th (ft)				6		0	85	42			138	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				375		465	1267	3008			1826	1516
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		0.04	0.34	0.23			0.39	0.83

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 39
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

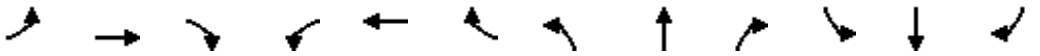




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	13	332	534	0	0	618	1079
Future Volume (vph)	0	0	0	3	0	13	332	534	0	0	618	1079
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1743		1509	3134	3231			3388	1516
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1743		1509	3134	3231			3388	1516
Peak-hour factor, PHF	0.90	0.90	0.90	0.69	0.69	0.69	0.78	0.78	0.78	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	4	0	19	426	685	0	0	719	1255
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	1	426	685	0	0	719	1255
Heavy Vehicles (%)	0%	0%	0%	7%	7%	7%	8%	8%	8%	3%	3%	3%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				0.9		0.9	10.4	31.0			14.6	43.9
Effective Green, g (s)				2.9		2.9	12.4	33.0			16.6	43.9
Actuated g/C Ratio				0.07		0.07	0.28	0.75			0.38	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				115		99	885	2428			1281	1516
v/s Ratio Prot				0.00		0.00	0.14	0.21			0.21	
v/s Ratio Perm												c0.83
v/c Ratio				0.03		0.01	0.48	0.28			0.56	0.83
Uniform Delay, d1				19.2		19.2	13.1	1.7			10.8	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		0.1	0.4	0.1			0.6	5.3
Delay (s)				19.3		19.2	13.5	1.8			11.3	5.3
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			19.2			6.3			7.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

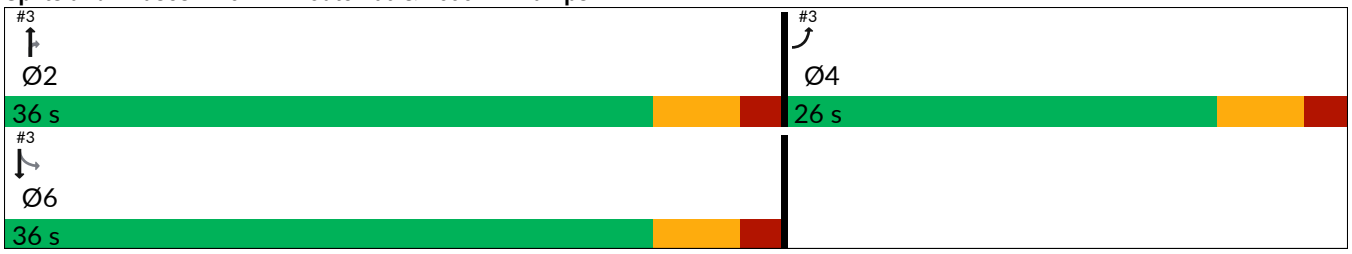
c Critical Lane Group

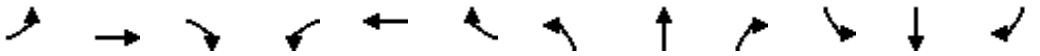


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	0	442	0	0	0	0	556	1	27	594	0
Future Volume (vph)	310	0	442	0	0	0	0	556	1	27	594	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.998	
Satd. Flow (prot)	3303	0	2682	0	0	0	0	3261	1459	0	3414	0
Flt Permitted	0.950										0.909	
Satd. Flow (perm)	3303	0	2682	0	0	0	0	3261	1459	0	3110	0
Satd. Flow (RTOR)			533						53			
Adj. Flow (vph)	373	0	533	0	0	0	0	654	1	32	699	0
Lane Group Flow (vph)	373	0	533	0	0	0	0	654	1	0	731	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.36		0.20					0.43	0.00		0.50	
Control Delay (s/veh)	12.0		0.2					7.8	0.0		8.5	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	12.0		0.2					7.8	0.0		8.5	
Queue Length 50th (ft)	30		0					43	0		48	
Queue Length 95th (ft)	65		0					80	0		89	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1960		2682					2782	1252		2654	
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	0.19		0.20					0.24	0.00		0.28	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 38.1
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

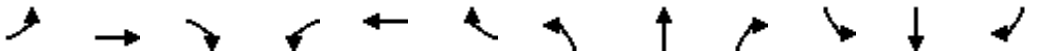




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	0	442	0	0	0	0	556	1	27	594	0
Future Volume (vph)	310	0	442	0	0	0	0	556	1	27	594	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3303		2682					3261	1459		3414	
Flt Permitted	0.95		1.00					1.00	1.00		0.91	
Satd. Flow (perm)	3303		2682					3261	1459		3111	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	373	0	533	0	0	0	0	654	1	32	699	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	373	0	533	0	0	0	0	654	0	0	731	0
Heavy Vehicles (%)	6%	6%	6%	0%	0%	0%	7%	7%	7%	2%	2%	2%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	9.9		37.8					15.9	15.9		15.9	
Effective Green, g (s)	11.9		37.8					17.9	17.9		17.9	
Actuated g/C Ratio	0.31		1.00					0.47	0.47		0.47	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1039		2682					1544	690		1473	
v/s Ratio Prot	c0.11							0.20				
v/s Ratio Perm			0.20						0.00		c0.23	
v/c Ratio	0.36		0.20					0.42	0.00		0.50	
Uniform Delay, d1	10.0		0.0					6.6	5.2		6.8	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.2		0.2					0.2	0.0		0.3	
Delay (s)	10.2		0.2					6.7	5.2		7.1	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.3			0.0			6.7			7.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	37.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

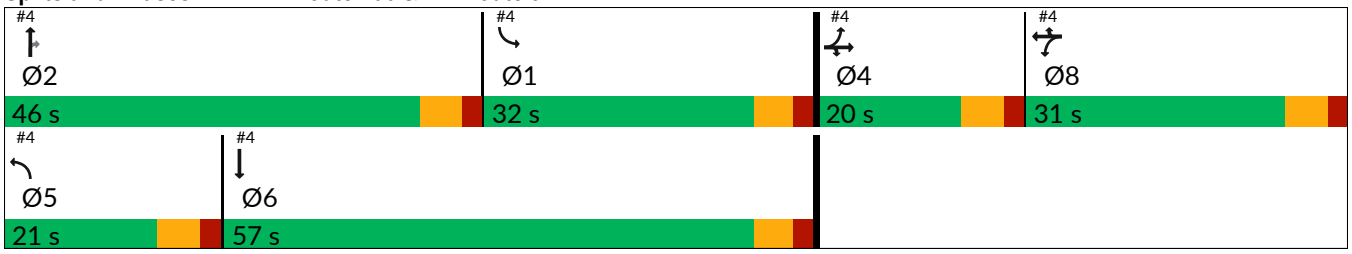
c Critical Lane Group

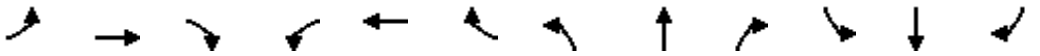


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Future Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	1557	3195	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	1557	3195	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			178			178			143			275
Adj. Flow (vph)	222	120	46	516	248	93	11	317	143	39	822	388
Lane Group Flow (vph)	222	120	46	258	506	93	11	317	143	39	822	388
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.41	0.41	0.12	0.58	0.56	0.17	0.07	0.36	0.29	0.15	0.66	0.22
Control Delay (s/veh)	36.5	40.0	0.6	34.3	29.8	0.6	42.4	30.0	7.9	34.2	25.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.5	40.0	0.6	34.3	29.8	0.6	42.4	30.0	7.9	34.2	25.2	0.3
Queue Length 50th (ft)	54	56	0	116	113	0	5	79	0	18	180	0
Queue Length 95th (ft)	114	139	0	274	231	0	28	160	56	47	290	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	665	361	448	542	1113	649	354	1751	848	615	2317	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	68	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.33	0.10	0.48	0.45	0.14	0.03	0.18	0.17	0.06	0.37	0.22

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 81.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Future Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	1557	3196	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	1557	3196	1531	1616	3231	1446	1694	3388	1777
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.83	0.83	0.83
Adj. Flow (vph)	222	120	46	516	248	93	11	317	143	39	822	388
RTOR Reduction (vph)	0	0	39	0	0	68	0	0	106	0	0	0
Lane Group Flow (vph)	222	120	7	258	506	25	11	317	37	39	822	388
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	11.5	11.5	11.5	21.0	21.0	21.0	1.1	19.9	19.9	9.3	28.1	85.7
Effective Green, g (s)	13.5	13.5	13.5	23.0	23.0	23.0	3.1	21.9	21.9	11.3	30.1	85.7
Actuated g/C Ratio	0.16	0.16	0.16	0.27	0.27	0.27	0.04	0.26	0.26	0.13	0.35	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	507	275	234	417	857	410	58	825	369	223	1189	1777
v/s Ratio Prot	c0.07	0.07	0.00	c0.17	0.16	0.02	0.01	c0.10		0.02	c0.24	
v/s Ratio Perm									0.03			0.22
v/c Ratio	0.44	0.44	0.03	0.62	0.59	0.06	0.19	0.38	0.10	0.17	0.69	0.22
Uniform Delay, d1	32.7	32.7	30.6	27.5	27.3	23.3	40.1	26.3	24.4	33.1	23.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.1	0.1	2.7	1.1	0.1	1.6	0.3	0.1	0.4	1.8	0.3
Delay (s)	33.3	33.8	30.6	30.2	28.4	23.4	41.7	26.6	24.5	33.4	25.6	0.3
Level of Service	C	C	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		33.1			28.4			26.3			18.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	10	12	0	17	6	295	4	27	744	9
Future Vol, veh/h	8	0	10	12	0	17	6	295	4	27	744	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	69	69	69	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	8	8	8	2	2	2
Mvmt Flow	16	0	20	17	0	25	7	328	4	30	827	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1233	1237	832	1228	-	328	837	0	0	332	0	0
Stage 1	892	892	-	341	-	-	-	-	-	-	-	-
Stage 2	341	346	-	887	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.18	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.272	-	-	2.218	-	-
Pot Cap-1 Maneuver	155	177	372	156	0	718	772	-	-	1227	-	-
Stage 1	339	363	-	678	0	-	-	-	-	-	-	-
Stage 2	678	639	-	342	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	145	172	372	143	-	718	772	-	-	1227	-	-
Mov Cap-2 Maneuver	145	172	-	143	-	-	-	-	-	-	-	-
Stage 1	331	354	-	672	-	-	-	-	-	-	-	-
Stage 2	649	634	-	315	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.07	19.87	0.19	0.28
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	772	-	-	145	372	143	718	1227	-	-
HCM Lane V/C Ratio	0.009	-	-	0.11	0.054	0.121	0.034	0.024	-	-
HCM Ctrl Dly (s/v)	9.7	-	-	32.9	15.2	33.6	10.2	8	-	-
HCM Lane LOS	A	-	-	D	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.4	0.1	0.1	-	-

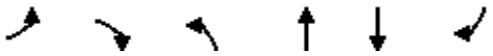
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	41	41	476	727	39
Future Vol, veh/h	24	41	41	476	727	39
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	79	79	86	86
Heavy Vehicles, %	4	4	7	7	7	7
Mvmt Flow	35	60	52	603	845	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1552	845	891	0	-	0
Stage 1	845	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.17	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.263	-	-	-
Pot Cap-1 Maneuver	124	360	740	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	360	740	-	-	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	486	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	29.06	0.81	0
HCM LOS	D		

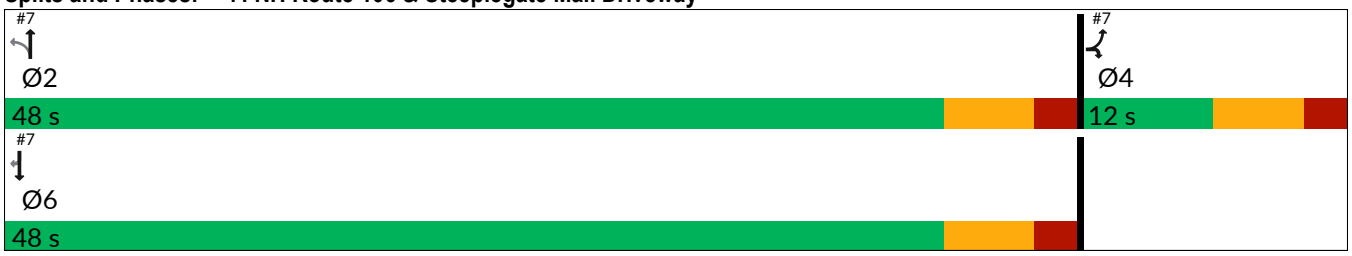
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	740	-	115	360	-	-
HCM Lane V/C Ratio	0.07	-	0.307	0.168	-	-
HCM Ctrl Dly (s/v)	10.2	-	49.6	17	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	0.6	-	-

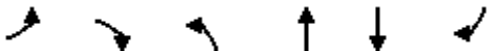


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	89	88	54	429	703	65
Future Volume (vph)	89	88	54	429	703	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1583	1616	1759	1827	1501
Flt Permitted	0.950		0.277			
Satd. Flow (perm)	1888	1583	471	1759	1827	1501
Satd. Flow (RTOR)		98				74
Adj. Flow (vph)	99	98	61	482	799	74
Lane Group Flow (vph)	99	98	61	482	799	74
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	16.0	16.0	16.0	16.0
Total Split (s)	12.0	12.0	48.0	48.0	48.0	48.0
Total Split (%)	20.0%	20.0%	80.0%	80.0%	80.0%	80.0%
Maximum Green (s)	6.0	6.0	42.0	42.0	42.0	42.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
v/c Ratio	0.29	0.27	0.18	0.38	0.60	0.07
Control Delay (s/veh)	22.1	8.2	4.3	4.3	6.6	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.1	8.2	4.3	4.3	6.6	0.9
Queue Length 50th (ft)	21	0	5	49	102	0
Queue Length 95th (ft)	74	36	15	82	166	7
Internal Link Dist (ft)	425			617	959	
Turn Bay Length (ft)		140	250			275
Base Capacity (vph)	351	374	436	1629	1692	1396
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	0.28	0.26	0.14	0.30	0.47	0.05

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 45
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: NH Route 106 & Steeplegate Mall Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	89	88	54	429	703	65
Future Volume (vph)	89	88	54	429	703	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	12	11	12	12	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1888	1583	1616	1759	1827	1501
Flt Permitted	0.95	1.00	0.28	1.00	1.00	1.00
Satd. Flow (perm)	1888	1583	470	1759	1827	1501
Peak-hour factor, PHF	0.90	0.90	0.89	0.89	0.88	0.88
Adj. Flow (vph)	99	98	61	482	799	74
RTOR Reduction (vph)	0	84	0	0	0	23
Lane Group Flow (vph)	99	14	61	482	799	51
Heavy Vehicles (%)	2%	2%	8%	8%	4%	4%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	4.5	4.5	29.6	29.6	29.6	29.6
Effective Green, g (s)	6.5	6.5	31.6	31.6	31.6	31.6
Actuated g/C Ratio	0.14	0.14	0.69	0.69	0.69	0.69
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	266	223	322	1205	1252	1028
v/s Ratio Prot	c0.05	0.01		0.27	c0.44	
v/s Ratio Perm			0.13			0.03
v/c Ratio	0.37	0.06	0.19	0.40	0.64	0.05
Uniform Delay, d1	18.0	17.2	2.6	3.1	4.1	2.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.3	0.2	1.1	0.0
Delay (s)	18.8	17.3	2.9	3.4	5.1	2.4
Level of Service	B	B	A	A	A	A
Approach Delay (s/veh)	18.1			3.3	4.9	
Approach LOS	B			A	A	

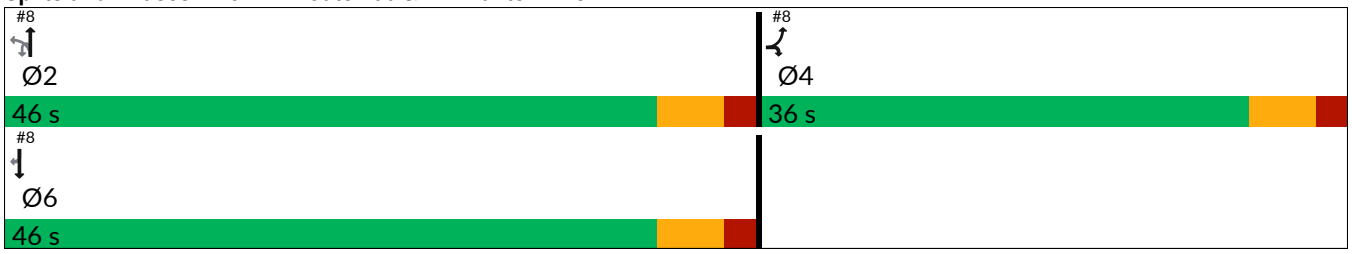
Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	134	70	1	67	356	612	179
Future Volume (vph)	134	70	1	67	356	612	179
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1711	1531	0	1678	1827	1783	1568
Flt Permitted	0.950			0.296			
Satd. Flow (perm)	1711	1531	0	523	1827	1783	1568
Satd. Flow (RTOR)		85					197
Adj. Flow (vph)	163	85	1	78	414	673	197
Lane Group Flow (vph)	163	85	0	79	414	673	197
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.38	0.19		0.25	0.38	0.64	0.19
Control Delay (s/veh)	20.2	6.4		8.2	7.1	10.6	1.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.2	6.4		8.2	7.1	10.6	1.5
Queue Length 50th (ft)	36	0		10	57	113	0
Queue Length 95th (ft)	95	25		33	116	247	20
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	1075	993		431	1506	1470	1327
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	0.15	0.09		0.18	0.27	0.46	0.15

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 52.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	134	70	1	67	356	612	179
Future Volume (vph)	134	70	1	67	356	612	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1531		1678	1827	1783	1568
Flt Permitted	0.95	1.00		0.30	1.00	1.00	1.00
Satd. Flow (perm)	1711	1531		523	1827	1783	1568
Peak-hour factor, PHF	0.82	0.82	0.86	0.86	0.86	0.91	0.91
Adj. Flow (vph)	163	85	1	78	414	673	197
RTOR Reduction (vph)	0	64	0	0	0	0	80
Lane Group Flow (vph)	163	21	0	79	414	673	117
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	11.0	11.0		29.0	29.0	29.0	29.0
Effective Green, g (s)	13.0	13.0		31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.25	0.25		0.60	0.60	0.60	0.60
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	427	382		311	1089	1062	934
v/s Ratio Prot	c0.10	0.01			0.23	c0.38	
v/s Ratio Perm				0.15			0.07
v/c Ratio	0.38	0.06		0.25	0.38	0.63	0.13
Uniform Delay, d1	16.2	14.8		5.0	5.5	6.8	4.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1		0.4	0.2	1.2	0.1
Delay (s)	16.7	14.9		5.4	5.7	8.1	4.6
Level of Service	B	B		A	A	A	A
Approach Delay (s/veh)	16.1				5.7	7.3	
Approach LOS	B				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	66	99	420	1008	46
Future Vol, veh/h	4	66	99	420	1008	46
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	82	82	86	86
Heavy Vehicles, %	5	5	5	5	1	1
Mvmt Flow	6	99	121	512	1172	53

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1926	1172	1226	0	-	0
Stage 1	1172	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	72	231	558	-	-	-
Stage 1	290	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	56	231	558	-	-	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	228	-	-	-	-	-
Stage 2	460	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	42.51	2.52	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	558	-	196	-	-
HCM Lane V/C Ratio	0.216	-	0.533	-	-
HCM Ctrl Dly (s/v)	13.2	-	42.5	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.8	-	2.8	-	-

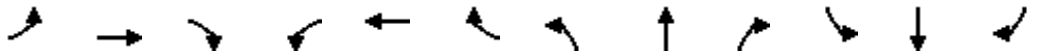
Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	178	36	45	146	52	13	0	23	0	0	62
Future Vol, veh/h	28	178	36	45	146	52	13	0	23	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	0	-	50	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	72	72	72	69	69	69	90	90	90
Heavy Vehicles, %	3	3	3	2	2	2	0	0	0	2	2	2
Mvmt Flow	38	241	49	63	203	72	19	0	33	0	0	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	289	0	0	668	-	145	-	-	203
Stage 1	-	-	-	-	-	-	341	-	-	-	-	-
Stage 2	-	-	-	-	-	-	328	-	-	-	-	-
Critical Hdwy	4.145	-	-	4.13	-	-	7.3	-	6.9	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	-	-	-	-
Follow-up Hdwy	2.2285	-	-	2.219	-	-	3.5	-	3.3	-	-	3.319
Pot Cap-1 Maneuver	1280	-	-	1271	-	-	361	0	883	0	0	837
Stage 1	-	-	-	-	-	-	653	0	-	0	0	-
Stage 2	-	-	-	-	-	-	689	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1280	-	-	1271	-	-	305	-	883	-	-	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	305	-	-	-	-	-
Stage 1	-	-	-	-	-	-	634	-	-	-	-	-
Stage 2	-	-	-	-	-	-	601	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.91	1.48	12.24	9.68
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	883	1280	-	-	1271	-	-	837
HCM Lane V/C Ratio	0.062	0.038	0.03	-	-	0.049	-	-	0.082
HCM Ctrl Dly (s/v)	17.6	9.2	7.9	-	-	8	-	-	9.7
HCM Lane LOS	C	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	0.1	-	-	0.2	-	-	0.3

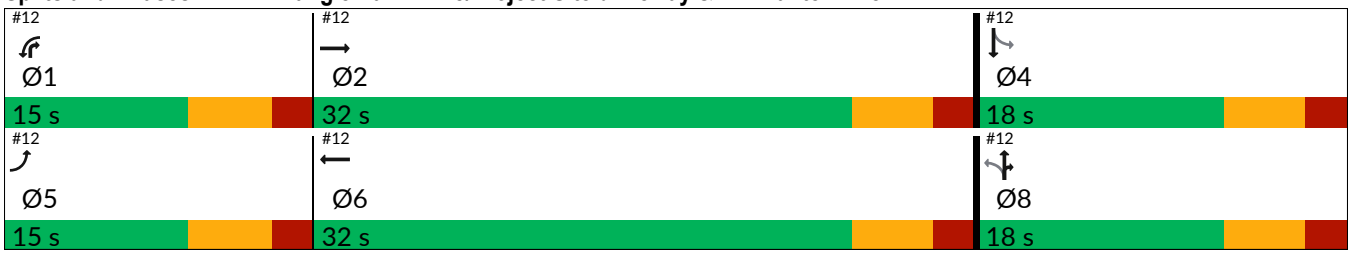


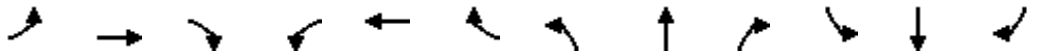
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Future Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.960				0.850		0.862	
Flt Protected	0.950			0.950				0.960		0.950		
Satd. Flow (prot)	1787	3296	0	1694	1771	0	0	1788	1583	1770	1606	0
Flt Permitted	0.950			0.950				0.726		0.722		
Satd. Flow (perm)	1787	3296	0	1694	1771	0	0	1352	1583	1345	1606	0
Satd. Flow (RTOR)		87			35				50		48	
Adj. Flow (vph)	75	195	87	57	199	72	44	9	49	62	4	48
Lane Group Flow (vph)	75	282	0	57	271	0	0	53	49	62	52	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	32.0		15.0	32.0		18.0	18.0		18.0	18.0	
Total Split (%)	23.1%	49.2%		23.1%	49.2%		27.7%	27.7%		27.7%	27.7%	
Maximum Green (s)	9.0	26.0		9.0	26.0		12.0	12.0		12.0	12.0	
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)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.17	0.14		0.14	0.25			0.15	0.07	0.18	0.11	
Control Delay (s/veh)	17.0	7.6		17.2	10.7			16.7	2.8	16.9	7.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay (s/veh)	17.0	7.6		17.2	10.7			16.7	2.8	16.9	7.5	
Queue Length 50th (ft)	16	18		12	48			11	0	13	1	
Queue Length 95th (ft)	42	35		31	76			33	9	44	23	
Internal Link Dist (ft)		981			380			958			380	
Turn Bay Length (ft)	50			250					170			
Base Capacity (vph)	564	2475		534	1327			543	869	540	673	
Starvation Cap Reductn	0	0		0	0			0	0	0	0	
Spillback Cap Reductn	0	0		0	0			0	0	0	0	
Storage Cap Reductn	0	0		0	0			0	0	0	0	
Reduced v/c Ratio	0.13	0.11		0.11	0.20			0.10	0.06	0.11	0.08	

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 39.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Future Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.96			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3295		1694	1771			1789	1583	1770	1605	
Flt Permitted	0.95	1.00		0.95	1.00			0.73	1.00	0.72	1.00	
Satd. Flow (perm)	1787	3295		1694	1771			1353	1583	1346	1605	
Peak-hour factor, PHF	0.76	0.76	0.76	0.68	0.68	0.68	0.77	0.77	0.77	0.90	0.90	0.90
Adj. Flow (vph)	75	195	87	57	199	72	44	9	49	62	4	48
RTOR Reduction (vph)	0	47	0	0	19	0	0	0	31	0	41	0
Lane Group Flow (vph)	75	235	0	57	252	0	0	53	18	62	11	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Actuated Green, G (s)	3.9	18.7		3.8	18.6			4.3	14.1	4.3	4.3	
Effective Green, g (s)	5.9	20.7		5.8	20.6			6.3	16.1	6.3	6.3	
Actuated g/C Ratio	0.13	0.46		0.13	0.46			0.14	0.36	0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	235	1522		219	814			190	568	189	225	
v/s Ratio Prot	c0.04	0.07		0.03	c0.14				0.01		0.01	
v/s Ratio Perm								0.04		c0.05		
v/c Ratio	0.32	0.15		0.26	0.31			0.28	0.03	0.33	0.05	
Uniform Delay, d1	17.6	7.0		17.6	7.6			17.2	9.3	17.3	16.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.0		0.6	0.2			0.8	0.0	1.0	0.1	
Delay (s)	18.4	7.0		18.2	7.8			18.0	9.3	18.4	16.7	
Level of Service	B	A		B	A			B	A	B	B	
Approach Delay (s/veh)		9.4			9.6			13.8			17.6	
Approach LOS		A			A			B			B	

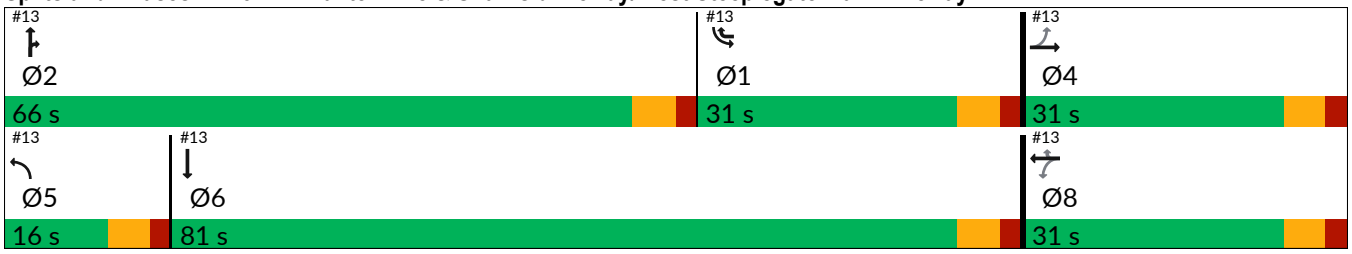
Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

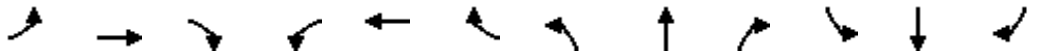
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Future Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.941				0.850			0.850		0.984	
Flt Protected		0.971			0.950		0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1865	1669	1787	3455	1546	3319	3367	0
Flt Permitted		0.758			0.700		0.950			0.950		
Satd. Flow (perm)	0	2575	0	0	1374	1669	1787	3455	1546	3319	3367	0
Satd. Flow (RTOR)		128				79			77		18	
Adj. Flow (vph)	51	0	33	118	0	79	20	253	43	66	257	30
Lane Group Flow (vph)	0	84	0	0	118	79	20	253	43	66	287	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	16.0	66.0	66.0	31.0	81.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%	24.2%	12.5%	51.6%	51.6%	24.2%	63.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	10.0	60.0	60.0	25.0	75.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.11			0.31	0.09	0.06	0.18	0.06	0.09	0.14	
Control Delay (s/veh)		1.9			15.8	1.8	16.5	13.2	2.2	15.8	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		1.9			15.8	1.8	16.5	13.2	2.2	15.8	7.6	
Queue Length 50th (ft)		0			23	0	4	25	0	6	14	
Queue Length 95th (ft)		4			19	0	18	52	9	21	57	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130		130	150		
Base Capacity (vph)		1800			938	1173	542	3455	1546	2268	3367	
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		0.05			0.13	0.07	0.04	0.07	0.03	0.03	0.09	

Intersection Summary
Cycle Length: 128
Actuated Cycle Length: 41.1
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Future Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3297			1865	1669	1787	3455	1546	3319	3368	
Flt Permitted		0.76			0.70	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2575			1374	1669	1787	3455	1546	3319	3368	
Peak-hour factor, PHF	0.78	0.78	0.78	0.33	0.33	0.33	0.87	0.87	0.87	0.90	0.90	0.90
Adj. Flow (vph)	51	0	33	118	0	79	20	253	43	66	257	30
RTOR Reduction (vph)	0	67	0	0	0	46	0	0	29	0	9	0
Lane Group Flow (vph)	0	17	0	0	118	33	20	253	14	66	278	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		7.4			7.4	15.9	1.2	13.5	13.5	8.5	20.8	
Effective Green, g (s)		9.4			9.4	19.9	3.2	15.5	15.5	10.5	22.8	
Actuated g/C Ratio		0.20			0.20	0.42	0.07	0.33	0.33	0.22	0.48	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		510			272	841	120	1129	505	735	1620	
v/s Ratio Prot						0.01	0.01	c0.07	0.01	0.02	c0.08	
v/s Ratio Perm		0.01			c0.09	0.01						
v/c Ratio		0.03			0.43	0.04	0.17	0.22	0.03	0.09	0.17	
Uniform Delay, d1		15.3			16.7	8.1	20.8	11.6	10.8	14.7	7.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			1.1	0.0	0.7	0.1	0.0	0.1	0.1	
Delay (s)		15.4			17.8	8.1	21.5	11.7	10.9	14.7	7.0	
Level of Service		B			B	A	C	B	B	B	A	
Approach Delay (s/veh)		15.4			13.9			12.2			8.4	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	14	32	514	95	42	571
Future Vol, veh/h	14	32	514	95	42	571
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	75	75	94	94	86	86
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	19	43	547	101	49	664

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1027	324	0	0	648	0
Stage 1	597	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	234	678	-	-	941	-
Stage 1	518	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	222	678	-	-	941	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	491	-	-	-	-	-
Stage 2	630	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	15.13	0	0.62
HCM LOS	C		

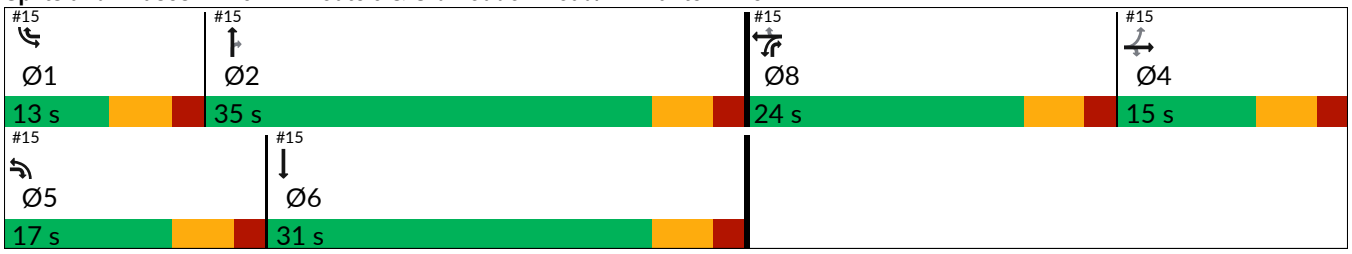
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	417	941	-
HCM Lane V/C Ratio	-	-	0.147	0.052	-
HCM Ctrl Dly (s/v)	-	-	15.1	9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Future Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.990		0.950	0.961		0.950			0.950		
Satd. Flow (prot)	0	1818	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Flt Permitted		0.889		0.950	0.961		0.950			0.950		
Satd. Flow (perm)	0	1633	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Satd. Flow (RTOR)			113			113			289		3	
Adj. Flow (vph)	8	33	75	287	30	44	51	343	289	63	404	9
Lane Group Flow (vph)	0	41	75	158	159	44	51	343	289	63	413	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	15.0	15.0	17.0	24.0	24.0	13.0	17.0	35.0	24.0	13.0	31.0	
Total Split (%)	17.2%	17.2%	19.5%	27.6%	27.6%	14.9%	19.5%	40.2%	27.6%	14.9%	35.6%	
Maximum Green (s)	9.0	9.0	11.0	18.0	18.0	7.0	11.0	29.0	18.0	7.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.14	0.14	0.37	0.36	0.06	0.15	0.28	0.23	0.11	0.43	
Control Delay (s/veh)		29.4	2.3	25.4	25.0	0.1	28.6	18.4	1.5	28.9	21.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		29.4	2.3	25.4	25.0	0.1	28.6	18.4	1.5	28.9	21.8	
Queue Length 50th (ft)		14	0	55	55	0	18	58	0	11	73	
Queue Length 95th (ft)		41	7	109	109	0	48	92	18	30	118	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		375	676	686	718	798	486	2091	1292	646	1888	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.11	0.11	0.23	0.22	0.06	0.10	0.16	0.22	0.10	0.22	

Intersection Summary

Cycle Length: 87
Actuated Cycle Length: 57.1
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

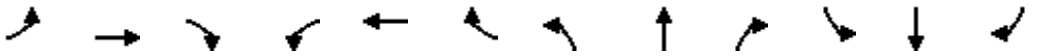
Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Future Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1819	1561	1641	1717	1492	1787	3455	1599	3433	3410	
Flt Permitted		0.89	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1632	1561	1641	1717	1492	1787	3455	1599	3433	3410	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	8	33	75	287	30	44	51	342	289	63	404	9
RTOR Reduction (vph)	0	0	58	0	0	30	0	0	128	0	2	0
Lane Group Flow (vph)	0	41	17	158	159	14	51	343	161	63	411	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		3.8	9.5	12.4	12.4	15.7	5.7	17.6	30.0	3.3	15.2	
Effective Green, g (s)		5.8	13.5	14.4	14.4	19.7	7.7	19.6	34.0	5.3	17.2	
Actuated g/C Ratio		0.09	0.22	0.24	0.24	0.32	0.13	0.32	0.56	0.09	0.28	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		154	447	386	404	481	225	1108	994	297	959	
v/s Ratio Prot			0.00	c0.10	0.09	0.00	c0.03	0.10	0.04	0.02	c0.12	
v/s Ratio Perm		c0.03	0.01			0.01			0.06			
v/c Ratio		0.27	0.04	0.41	0.39	0.03	0.23	0.31	0.16	0.21	0.43	
Uniform Delay, d1		25.7	18.7	19.8	19.7	14.2	24.0	15.6	6.6	26.0	17.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.9	0.0	0.7	0.6	0.0	0.5	0.2	0.1	0.4	0.3	
Delay (s)		26.6	18.7	20.5	20.3	14.2	24.5	15.8	6.7	26.3	18.2	
Level of Service		C	B	C	C	B	C	B	A	C	B	
Approach Delay (s/veh)		21.5			19.6			12.6			19.3	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

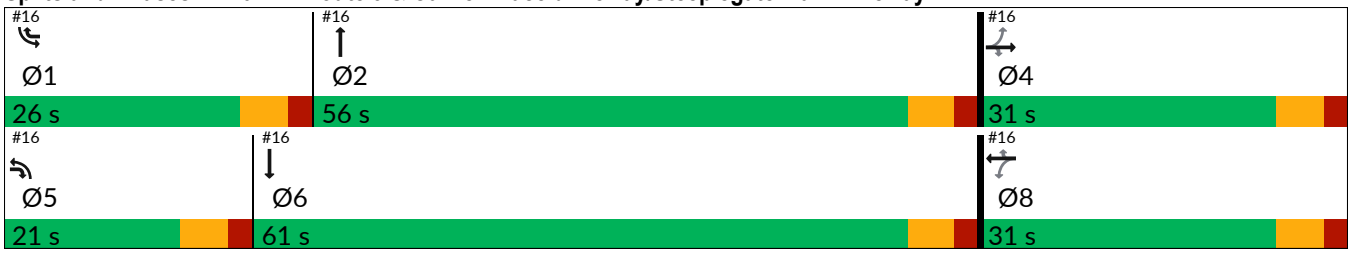
c Critical Lane Group

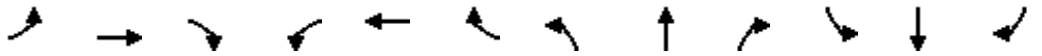


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Future Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.974			0.981	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1671	1495	0	1829	1636	1829	3332	0	1752	3324	0
Flt Permitted		0.722			0.731		0.950			0.950		
Satd. Flow (perm)	0	1270	1495	0	1407	1636	1829	3332	0	1752	3324	0
Satd. Flow (RTOR)			39			97		28			20	
Adj. Flow (vph)	40	0	39	54	0	97	66	329	68	140	375	54
Lane Group Flow (vph)	0	40	39	0	54	97	66	397	0	140	429	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	31.0	31.0	21.0	31.0	31.0	26.0	21.0	56.0		26.0	61.0	
Total Split (%)	27.4%	27.4%	18.6%	27.4%	27.4%	23.0%	18.6%	49.6%		23.0%	54.0%	
Maximum Green (s)	25.0	25.0	15.0	25.0	25.0	20.0	15.0	50.0		20.0	55.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.14	0.06		0.17	0.13	0.17	0.31		0.30	0.26	
Control Delay (s/veh)		18.2	3.3		18.2	2.1	17.9	12.4		17.0	10.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		18.2	3.3		18.2	2.1	17.9	12.4		17.0	10.5	
Queue Length 50th (ft)		9	0		12	0	15	41		31	43	
Queue Length 95th (ft)		35	13		42	16	35	59		70	72	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		808	875		895	1162	732	3268		908	3317	
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		0.05	0.04		0.06	0.08	0.09	0.12		0.15	0.13	

Intersection Summary
Cycle Length: 113
Actuated Cycle Length: 44.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Future Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671	1495		1829	1636	1829	3333		1752	3324	
Flt Permitted		0.72	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1270	1495		1407	1636	1829	3333		1752	3324	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.68	0.68	0.68	0.80	0.80	0.80
Adj. Flow (vph)	40	0	39	54	0	97	66	329	68	140	375	54
RTOR Reduction (vph)	0	0	27	0	0	60	0	18	0	0	11	0
Lane Group Flow (vph)	0	40	12	0	54	37	66	379	0	140	418	0
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		4.6	10.9		4.6	14.2	6.3	15.9		9.6	19.2	
Effective Green, g (s)		6.6	14.9		6.6	18.2	8.3	17.9		11.6	21.2	
Actuated g/C Ratio		0.14	0.31		0.14	0.38	0.17	0.37		0.24	0.44	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		174	587		193	755	315	1240		422	1465	
v/s Ratio Prot			0.00			0.01	0.04	0.11		c0.08	c0.13	
v/s Ratio Perm		0.03	0.00		c0.04	0.01						
v/c Ratio		0.23	0.02		0.28	0.05	0.21	0.31		0.33	0.29	
Uniform Delay, d1		18.5	11.5		18.6	9.5	17.1	10.7		15.1	8.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0		0.8	0.0	0.3	0.1		0.5	0.1	
Delay (s)		19.2	11.5		19.4	9.5	17.4	10.8		15.5	8.7	
Level of Service		B	B		B	A	B	B		B	A	
Approach Delay (s/veh)		15.4			13.0			11.8			10.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	12	334	14	17	444
Future Vol, veh/h	11	12	334	14	17	444
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	92	92	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	13	363	15	20	529

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	675	189	0	0	378	0
Stage 1	371	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	387	821	-	-	1177	-
Stage 1	668	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	381	821	-	-	1177	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	721	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.16	0	0.3
HCM LOS	B		

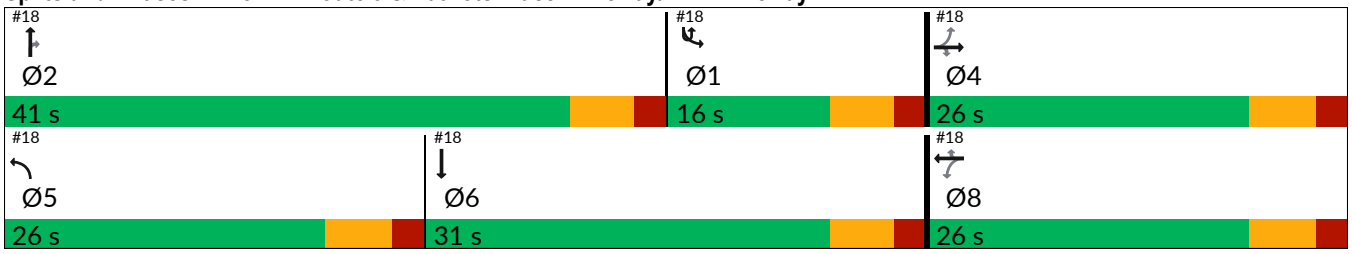
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	528	1177	-
HCM Lane V/C Ratio	-	-	0.048	0.017	-
HCM Ctrl Dly (s/v)	-	-	12.2	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Future Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.993
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3332
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3332
Satd. Flow (RTOR)			197			197			118			6
Adj. Flow (vph)	3	1	9	44	2	3	18	436	14	1	6	556
Lane Group Flow (vph)	0	4	9	0	46	3	18	436	14	0	7	582
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.12	0.01	0.04	0.16	0.01		0.02	0.22
Control Delay (s/veh)		14.3	0.0		14.3	0.0	15.5	5.7	0.0		14.4	5.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		14.3	0.0		14.3	0.0	15.5	5.7	0.0		14.4	5.2
Queue Length 50th (ft)		1	0		6	0	2	0	0		1	0
Queue Length 95th (ft)		6	0		24	0	16	68	0		9	87
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		924	1117		987	1077	1148	3198	1439		614	2760
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.05	0.00	0.02	0.14	0.01		0.01	0.21

Intersection Summary

Cycle Length: 83
Actuated Cycle Length: 36
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	26
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

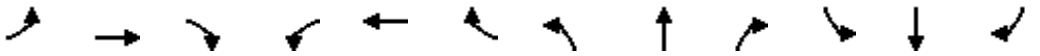
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Future Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3333
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3333
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.74	0.74	0.74	0.77	0.77	0.77
Adj. Flow (vph)	3	1	9	44	2	3	18	436	14	1	6	556
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	6	0	0	3
Lane Group Flow (vph)	0	4	1	0	46	0	18	436	8	0	7	579
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	0.9	22.8	22.8		1.3	23.2
Effective Green, g (s)		4.7	4.7		4.7	4.7	2.9	24.8	24.8		3.3	25.2
Actuated g/C Ratio		0.10	0.10		0.10	0.10	0.06	0.55	0.55		0.07	0.56
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		149	169		159	162	114	1893	847		127	1874
v/s Ratio Prot							0.01	c0.13			0.00	c0.17
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.01			
v/c Ratio		0.03	0.01		0.29	0.00	0.16	0.23	0.01		0.06	0.31
Uniform Delay, d1		18.0	18.0		18.5	18.0	19.8	5.1	4.5		19.3	5.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		1.0	0.0	0.7	0.1	0.0		0.2	0.1
Delay (s)		18.1	18.0		19.5	18.0	20.4	5.2	4.5		19.5	5.3
Level of Service		B	B		B	B	C	A	A		B	A
Approach Delay (s/veh)		18.0			19.4			5.7				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.77
Adj. Flow (vph)	26
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

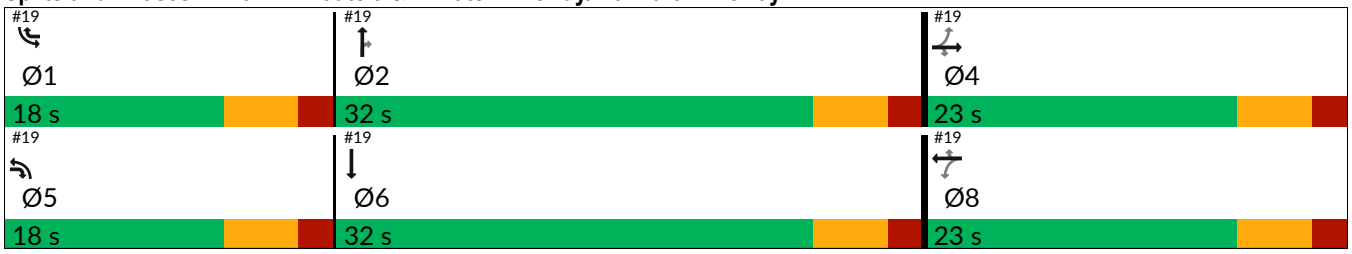
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Future Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.990	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3455	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3455	0
Satd. Flow (RTOR)			77			48			134		11	
Adj. Flow (vph)	57	13	77	25	7	48	43	274	14	61	437	30
Lane Group Flow (vph)	0	70	77	0	32	48	43	274	14	61	467	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	23.0	23.0	18.0	23.0	23.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (%)	31.5%	31.5%	24.7%	31.5%	31.5%	24.7%	24.7%	43.8%	43.8%	24.7%	43.8%	
Maximum Green (s)	17.0	17.0	12.0	17.0	17.0	12.0	12.0	26.0	26.0	12.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.19	0.11		0.09	0.07	0.10	0.14	0.01	0.14	0.23	
Control Delay (s/veh)		16.5	2.5		16.1	2.7	17.0	10.5	0.0	16.5	10.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		16.5	2.5		16.1	2.7	17.0	10.5	0.0	16.5	10.0	
Queue Length 50th (ft)		14	0		6	0	9	26	0	12	46	
Queue Length 95th (ft)		44	14		25	10	30	50	0	39	82	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		771	982		712	920	718	2596	1235	677	2599	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.09	0.08		0.04	0.05	0.06	0.11	0.01	0.09	0.18	

Intersection Summary
Cycle Length: 73
Actuated Cycle Length: 38.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Future Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3456	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3456	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	57	13	77	25	7	48	42	274	14	61	437	30
RTOR Reduction (vph)	0	0	56	0	0	35	0	0	8	0	6	0
Lane Group Flow (vph)	0	70	21	0	32	13	43	274	6	61	461	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.3	7.9		4.3	8.3	3.6	18.1	18.1	4.0	18.5	
Effective Green, g (s)		6.3	11.9		6.3	12.3	5.6	20.1	20.1	6.0	20.5	
Actuated g/C Ratio		0.14	0.27		0.14	0.28	0.13	0.45	0.45	0.14	0.46	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		200	578		185	562	225	1564	723	227	1595	
v/s Ratio Prot			0.00			0.00	0.02	0.08		c0.04	c0.13	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.35	0.04		0.17	0.02	0.19	0.18	0.01	0.27	0.29	
Uniform Delay, d1		17.2	12.0		16.8	11.7	17.4	7.2	6.7	17.2	7.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.4	0.0	0.4	0.1	0.0	0.6	0.1	
Delay (s)		18.3	12.0		17.2	11.7	17.8	7.3	6.7	17.9	7.5	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		15.0			13.9			8.6			8.7	
Approach LOS		B			B			A			A	

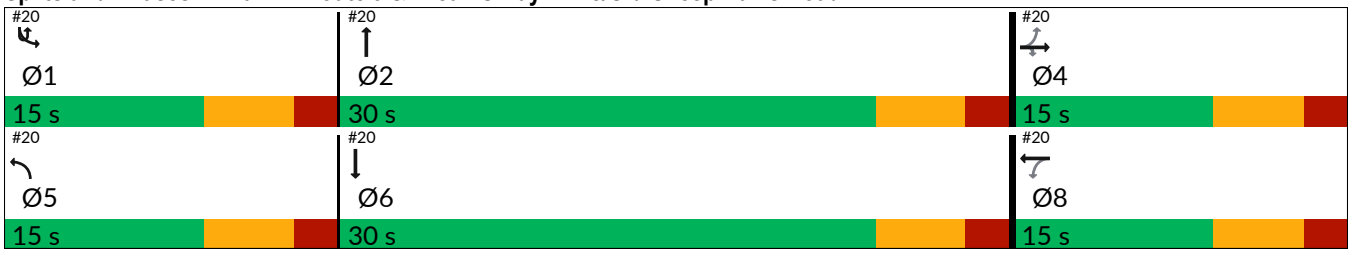
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	325	0	4	4	534
Future Volume (vph)	0	0	1	0	0	0	1	325	0	4	4	534
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850									
Flt Protected							0.950				0.950	
Satd. Flow (prot)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Flt Permitted							0.950				0.950	
Satd. Flow (perm)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Satd. Flow (RTOR)			413									
Adj. Flow (vph)	0	0	4	0	0	0	1	349	0	5	5	636
Lane Group Flow (vph)	0	0	4	0	0	0	1	349	0	0	10	636
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	15.0	15.0	15.0	15.0	15.0		15.0	30.0		15.0	15.0	30.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	50.0%		25.0%	25.0%	50.0%
Maximum Green (s)	9.0	9.0	9.0	9.0	9.0		9.0	24.0		9.0	9.0	24.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio			0.01				0.00	0.11			0.02	0.20
Control Delay (s/veh)			0.0				18.0	2.5			16.3	2.5
Queue Delay			0.0				0.0	0.0			0.0	0.0
Total Delay (s/veh)			0.0				18.0	2.5			16.3	2.5
Queue Length 50th (ft)			0				0	0			1	0
Queue Length 95th (ft)			0				4	51			14	81
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)			815				533	3132			578	3175
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			0.00				0.00	0.11			0.02	0.20

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 36.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

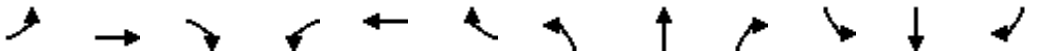
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	325	0	4	4	534
Future Volume (vph)	0	0	1	0	0	0	1	325	0	4	4	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)			4.0				4.0	4.0			4.0	4.0
Lane Util. Factor			1.00				1.00	0.95			1.00	0.95
Frt			0.85				1.00	1.00			1.00	1.00
Flt Protected			1.00				0.95	1.00			0.95	1.00
Satd. Flow (prot)			1669				1668	3455			1805	3490
Flt Permitted			1.00				0.95	1.00			0.95	1.00
Satd. Flow (perm)			1669				1668	3455			1805	3490
Peak-hour factor, PHF	0.25	0.25	0.25	0.90	0.90	0.90	0.93	0.93	0.93	0.84	0.84	0.84
Adj. Flow (vph)	0	0	4	0	0	0	1	349	0	5	5	636
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	1	349	0	0	10	636
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)			0.7				0.7	27.5			0.8	27.6
Effective Green, g (s)			2.7				2.7	29.5			2.8	29.6
Actuated g/C Ratio			0.06				0.06	0.63			0.06	0.63
Clearance Time (s)			6.0				6.0	6.0			6.0	6.0
Vehicle Extension (s)			3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			95				95	2168			107	2197
v/s Ratio Prot							0.00	0.10			c0.01	c0.18
v/s Ratio Perm			c0.00									
v/c Ratio			0.00				0.01	0.16			0.09	0.29
Uniform Delay, d1			20.9				20.9	3.6			20.9	3.9
Progression Factor			1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0				0.0	0.0			0.4	0.1
Delay (s)			20.9				20.9	3.7			21.3	4.0
Level of Service			C				C	A			C	A
Approach Delay (s/veh)		20.9			0.0			3.7				4.3
Approach LOS		C			A			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.84
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

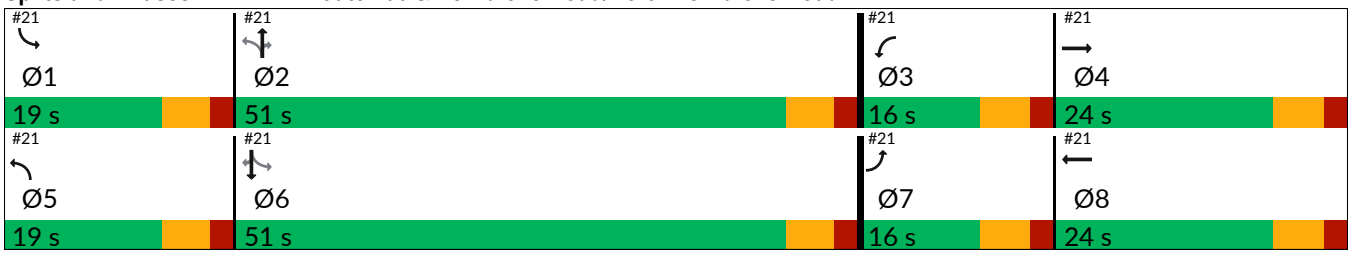


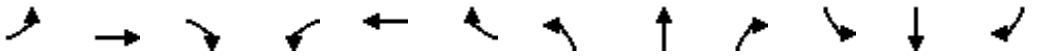
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Future Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1648	0	1770	1574	0	1776	1810	1538	1829	1863	1531
Flt Permitted	0.950			0.950			0.077			0.322		
Satd. Flow (perm)	1787	1648	0	1770	1574	0	144	1810	1538	620	1863	1531
Satd. Flow (RTOR)		122			27				149			149
Adj. Flow (vph)	54	26	122	73	99	68	75	561	31	46	999	155
Lane Group Flow (vph)	54	148	0	73	167	0	75	561	31	46	999	155
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.28	0.41		0.36	0.60		0.29	0.56	0.03	0.10	1.04	0.18
Control Delay (s/veh)	46.4	14.1		48.0	41.6		12.3	20.5	0.1	9.3	66.3	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.4	14.1		48.0	41.6		12.3	20.5	0.1	9.3	66.3	3.9
Queue Length 50th (ft)	32	14		44	84		19	265	0	11	~752	2
Queue Length 95th (ft)	67	56		77	122		37	362	0	28	#1079	38
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	236	458		234	368		360	1003	919	590	965	865
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.32		0.31	0.45		0.21	0.56	0.03	0.08	1.04	0.18

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 93.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

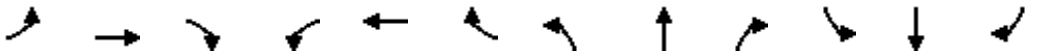




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Future Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1649		1770	1574		1776	1810	1538	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	1787	1649		1770	1574		144	1810	1538	619	1863	1531
Peak-hour factor, PHF	0.82	0.82	0.82	0.74	0.74	0.74	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	54	26	122	73	99	68	75	561	31	46	999	155
RTOR Reduction (vph)	0	103	0	0	23	0	0	0	15	0	0	73
Lane Group Flow (vph)	54	45	0	73	144	0	75	561	16	46	999	82
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	6.5	12.9		6.9	13.3		56.1	50.0	50.0	51.7	47.8	47.8
Effective Green, g (s)	8.5	14.9		8.9	15.3		60.1	52.0	52.0	55.7	49.8	49.8
Actuated g/C Ratio	0.09	0.15		0.09	0.16		0.62	0.53	0.53	0.57	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	155	251		161	246		223	963	818	425	949	780
v/s Ratio Prot	0.03	0.03		c0.04	c0.09		c0.03	0.31		0.01	c0.54	
v/s Ratio Perm							0.18		0.01	0.06		0.05
v/c Ratio	0.35	0.18		0.45	0.59		0.34	0.58	0.02	0.11	1.05	0.11
Uniform Delay, d1	42.0	36.1		42.1	38.3		19.8	15.5	10.8	10.4	24.0	12.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.3		2.0	3.5		0.9	0.9	0.0	0.1	44.1	0.1
Delay (s)	43.4	36.4		44.1	41.8		20.7	16.4	10.8	10.5	68.0	12.5
Level of Service	D	D		D	D		C	B	B	B	E	B
Approach Delay (s/veh)		38.3			42.5			16.6			58.7	
Approach LOS		D			D			B			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Future Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1718	0	1736	1930	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.730			0.525			0.153			0.487		
Satd. Flow (perm)	1360	1718	0	959	1930	0	278	1818	1599	916	1818	1546
Satd. Flow (RTOR)		24			19				66			345
Adj. Flow (vph)	157	156	68	10	23	19	132	485	43	122	632	345
Lane Group Flow (vph)	157	224	0	10	42	0	132	485	43	122	632	345
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.46	0.50		0.04	0.08		0.30	0.44	0.04	0.34	0.88	0.42
Control Delay (s/veh)	23.7	21.0		17.1	11.9		7.1	8.0	1.1	18.6	36.4	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	21.0		17.1	11.9		7.1	8.0	1.1	18.6	36.4	4.0
Queue Length 50th (ft)	48	61		3	6		16	74	0	30	209	0
Queue Length 95th (ft)	90	109		10	19		37	138	6	79	#453	49
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	450	586		318	652		487	1239	1111	364	722	822
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.38		0.03	0.06		0.27	0.39	0.04	0.34	0.88	0.42

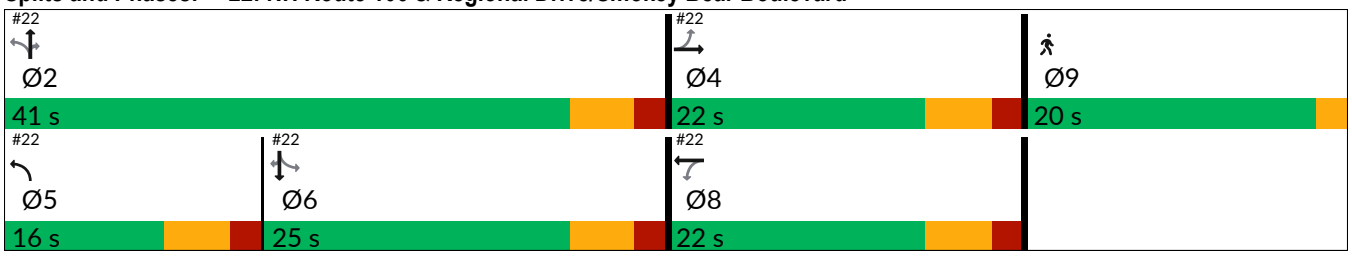
Intersection Summary
Cycle Length: 83

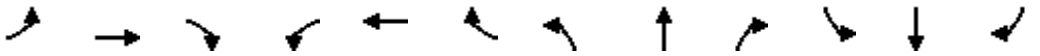
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 55.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

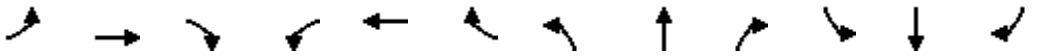




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Future Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1930		1728	1818	1599	1787	1818	1546
Flt Permitted	0.73	1.00		0.52	1.00		0.15	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1359	1719		958	1930		279	1818	1599	916	1818	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.69	0.69	0.69	0.84	0.84	0.84	0.94	0.94	0.94
Adj. Flow (vph)	157	156	68	10	23	19	132	485	43	122	632	345
RTOR Reduction (vph)	0	18	0	0	14	0	0	0	17	0	0	211
Lane Group Flow (vph)	157	206	0	10	28	0	132	485	26	122	632	134
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	11.9	11.9		11.9	11.9		33.0	33.0	33.0	20.1	20.1	20.1
Effective Green, g (s)	13.9	13.9		13.9	13.9		35.0	35.0	35.0	22.1	22.1	22.1
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.62	0.62	0.62	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	331	419		234	471		398	1118	983	355	706	600
v/s Ratio Prot		c0.12			0.01		0.05	c0.27			c0.35	
v/s Ratio Perm	0.12			0.01			0.15		0.02	0.13		0.09
v/c Ratio	0.47	0.49		0.04	0.06		0.33	0.43	0.03	0.34	0.90	0.22
Uniform Delay, d1	18.4	18.5		16.4	16.5		8.2	5.7	4.3	12.3	16.3	11.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.9		0.1	0.1		0.5	0.3	0.0	0.6	13.9	0.2
Delay (s)	19.5	19.4		16.5	16.5		8.6	6.0	4.3	12.9	30.2	11.8
Level of Service	B	B		B	B		A	A	A	B	C	B
Approach Delay (s/veh)		19.4			16.5			6.4			22.5	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

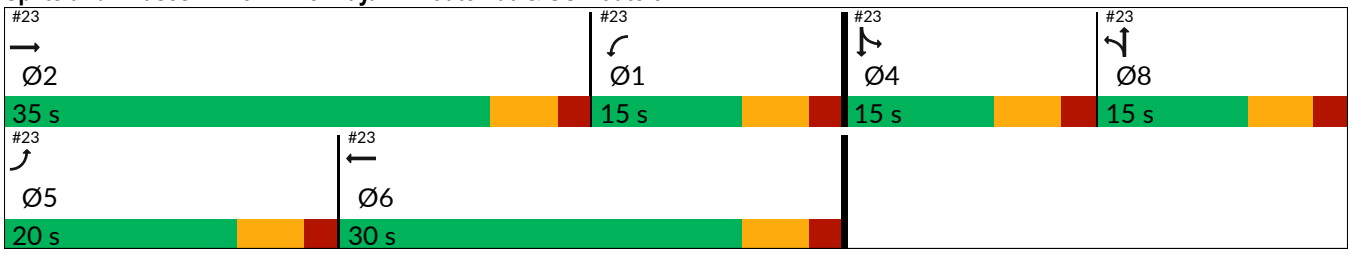
c Critical Lane Group

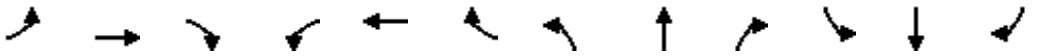


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	229	59	0	638	277	15	5	4	152	18	183
Future Volume (vph)	176	229	59	0	638	277	15	5	4	152	18	183
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Satd. Flow (RTOR)			368			368			368			368
Adj. Flow (vph)	212	276	71	0	733	318	17	6	4	169	20	203
Lane Group Flow (vph)	212	276	71	0	733	318	17	6	4	169	20	203
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	20.0	35.0		15.0	30.0		15.0	15.0		15.0	15.0	
Total Split (%)	25.0%	43.8%		18.8%	37.5%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	14.0	29.0		9.0	24.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.57	0.13	0.04		0.62	0.18	0.04	0.03	0.00	0.32	0.07	0.13
Control Delay (s/veh)	31.3	5.6	0.1		21.0	0.2	29.9	30.2	0.0	28.4	28.2	0.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.3	5.6	0.1		21.0	0.2	29.9	30.2	0.0	28.4	28.2	0.2
Queue Length 50th (ft)	68	14	0		110	0	3	2	0	28	6	0
Queue Length 95th (ft)	157	43	0		205	0	13	14	0	71	29	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150			200	250		150	250		200
Base Capacity (vph)	435	2109	1660		1500	1759	581	315	1660	581	315	1509
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.13	0.04		0.49	0.18	0.03	0.02	0.00	0.29	0.06	0.13

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 62.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

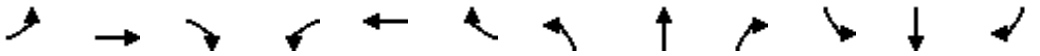




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	229	59	0	638	277	15	5	4	152	18	183
Future Volume (vph)	176	229	59	0	638	277	15	5	4	152	18	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	212	276	71	0	733	318	17	6	4	169	20	203
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	212	276	71	0	733	318	17	6	4	169	20	203
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.2	37.7	66.1		19.5	66.1	2.1	2.1	66.1	8.3	8.3	66.1
Effective Green, g (s)	14.2	39.7	66.1		21.5	66.1	4.1	4.1	66.1	10.3	10.3	66.1
Actuated g/C Ratio	0.21	0.60	1.00		0.33	1.00	0.06	0.06	1.00	0.16	0.16	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	350	1958	1660		1123	1759	196	106	1660	493	267	1509
v/s Ratio Prot	c0.13	0.08			c0.21		0.01	0.00		c0.05	0.01	
v/s Ratio Perm			0.04			c0.18			0.00			0.13
v/c Ratio	0.61	0.14	0.04		0.65	0.18	0.09	0.06	0.00	0.34	0.07	0.13
Uniform Delay, d1	23.4	5.8	0.0		19.1	0.0	29.2	29.2	0.0	24.9	23.8	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.0	0.0		1.4	0.2	0.2	0.2	0.0	0.4	0.1	0.2
Delay (s)	26.4	5.8	0.0		20.5	0.2	29.4	29.4	0.0	25.3	24.0	0.2
Level of Service	C	A	A		C	A	C	C	A	C	C	A
Approach Delay (s/veh)		12.9			14.3			25.1			12.2	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Future Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	1770	3300	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.734			0.757	
Satd. Flow (perm)	1770	3300	0	1689	3196	0	0	1395	1830	0	1299	1459
Satd. Flow (RTOR)					2				150			353
Adj. Flow (vph)	716	1043	4	0	1159	31	2	0	2	36	0	353
Lane Group Flow (vph)	716	1047	0	0	1190	0	0	2	2	0	36	353
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.13	0.39			0.91			0.01	0.01		0.26	0.75
Control Delay (s/veh)	108.9	3.1			38.1			38.0	0.0		43.9	15.5
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	108.9	3.1			38.1			38.0	0.0		43.9	15.5
Queue Length 50th (ft)	~513	68			360			1	0		21	0
Queue Length 95th (ft)	#613	83			355			4	0		51	72
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	632	2670			1311			176	361		163	492
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	1.13	0.39			0.91			0.01	0.01		0.22	0.72

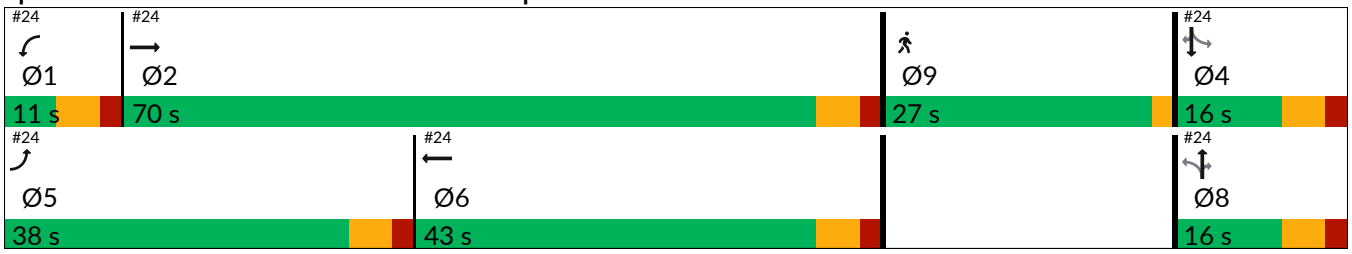
Intersection Summary
Cycle Length: 124

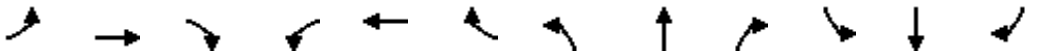
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

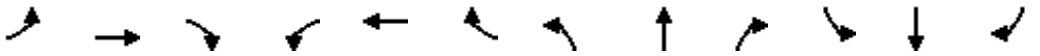




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Future Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3301			3196			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.73	1.00		0.76	1.00
Satd. Flow (perm)	1770	3301			3196			1394	1830		1299	1459
Peak-hour factor, PHF	0.79	0.79	0.79	0.75	0.75	0.75	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	716	1043	4	0	1159	31	2	0	2	36	0	353
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	2	0	0	316
Lane Group Flow (vph)	716	1047	0	0	1189	0	0	2	0	0	36	37
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	32.0	75.0			37.0			8.1	8.1		8.1	8.1
Effective Green, g (s)	34.0	77.0			39.0			10.1	10.1		10.1	10.1
Actuated g/C Ratio	0.36	0.81			0.41			0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	632	2672			1310			148	194		137	154
v/s Ratio Prot	c0.40	0.32			c0.37							
v/s Ratio Perm								0.00	0.00		c0.03	0.03
v/c Ratio	1.13	0.39			0.91			0.01	0.00		0.26	0.24
Uniform Delay, d1	30.6	2.5			26.4			38.0	38.0		39.1	39.0
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	78.3	0.1			9.3			0.0	0.0		1.0	0.8
Delay (s)	108.9	2.6			35.6			38.1	38.0		40.1	39.8
Level of Service	F	A			D			D	D		D	D
Approach Delay (s/veh)		45.8			35.6			38.0			39.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	758	7	7	1146	47	1	0	8	17	0	16
Future Volume (vph)	13	758	7	7	1146	47	1	0	8	17	0	16
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	4911	0	1652	3401	0	1805	1615	0	1727	1495	0
Flt Permitted	0.950			0.950			0.744			0.748		
Satd. Flow (perm)	1711	4911	0	1652	3401	0	1414	1615	0	1360	1495	0
Satd. Flow (RTOR)		1			5			731			186	
Adj. Flow (vph)	14	815	8	8	1302	53	2	0	14	23	0	21
Lane Group Flow (vph)	14	823	0	8	1355	0	2	14	0	23	21	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	34.0		26.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.8%	27.6%		21.1%			26.8%	26.8%		26.8%	26.8%	
Maximum Green (s)	6.0	28.0		20.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.13	0.48		0.03	0.54		0.01	0.02		0.12	0.06	
Control Delay (s/veh)	57.0	33.6		44.7	1.9		42.0	0.0		45.6	0.3	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.0	33.6		44.7	2.1		42.0	0.0		45.6	0.3	
Queue Length 50th (ft)	11	186		4	34		1	0		17	0	
Queue Length 95th (ft)	33	261		m7	m44		6	0		36	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	111	1705		302	2524		333	939		320	494	
Starvation Cap Reductn	0	0		0	473		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.48		0.03	0.66		0.01	0.01		0.07	0.04	

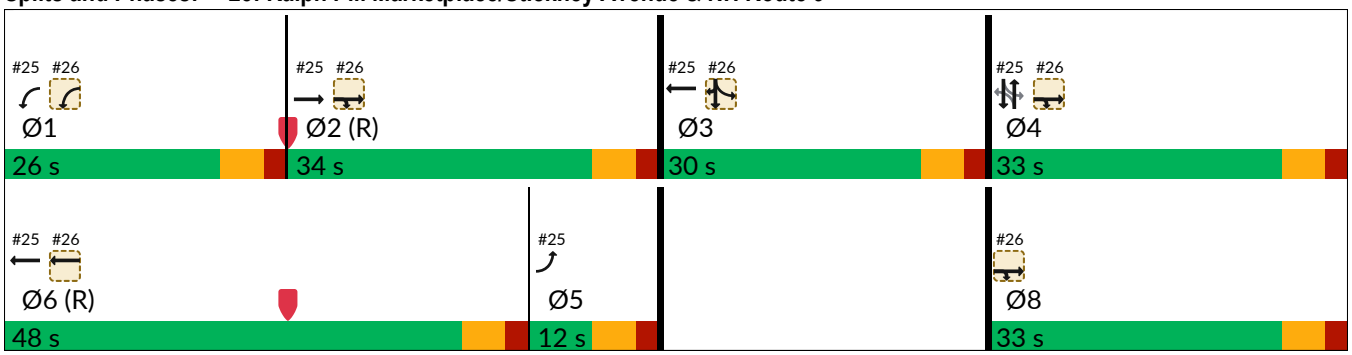
Intersection Summary
Cycle Length: 123

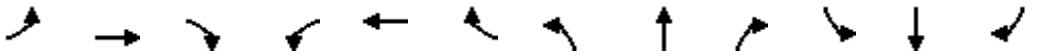
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	30.0	48.0	33.0
Total Split (%)	24%	39%	27%
Maximum Green (s)	24.0	42.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

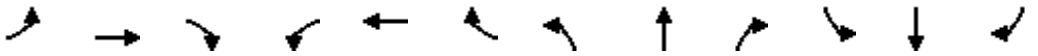




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	758	7	7	1146	47	1	0	8	17	0	16
Future Volume (vph)	13	758	7	7	1146	47	1	0	8	17	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	4909		1652	3401		1805	1615		1727	1495	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	1711	4909		1652	3401		1413	1615		1360	1495	
Peak-hour factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88	0.58	0.58	0.58	0.75	0.75	0.75
Adj. Flow (vph)	14	815	8	8	1302	53	2	0	14	23	0	21
RTOR Reduction (vph)	0	1	0	0	2	0	0	12	0	0	18	0
Lane Group Flow (vph)	14	822	0	8	1353	0	2	2	0	23	3	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	40.7		18.0	81.2		15.4	15.4		15.4	15.4	
Effective Green, g (s)	4.4	42.7		20.0	85.2		17.4	17.4		17.4	17.4	
Actuated g/C Ratio	0.04	0.35		0.16	0.69		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	61	1704		268	2355		199	228		192	211	
v/s Ratio Prot	0.01	c0.17		0.00	c0.40			0.00			0.00	
v/s Ratio Perm							0.00			c0.02		
v/c Ratio	0.23	0.48		0.03	0.57		0.01	0.01		0.12	0.01	
Uniform Delay, d1	57.7	31.5		43.3	9.6		45.4	45.4		46.1	45.4	
Progression Factor	1.00	1.00		1.08	0.24		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	1.0		0.0	0.2		0.0	0.0		0.3	0.0	
Delay (s)	59.6	32.5		47.0	2.5		45.4	45.4		46.4	45.4	
Level of Service	E	C		D	A		D	D		D	D	
Approach Delay (s/veh)		32.9			2.8			45.4			45.9	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	663	120	279	767	0	0	0	0	242	0	433
Future Volume (vph)	0	663	120	279	767	0	0	0	0	242	0	433
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Satd. Flow (RTOR)			129									265
Adj. Flow (vph)	0	713	129	332	913	0	0	0	0	303	0	541
Lane Group Flow (vph)	0	713	129	332	913	0	0	0	0	0	303	541
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				26.0	48.0					30.0	30.0	30.0
Total Split (%)				21.1%	39.0%					24.4%	24.4%	24.4%
Maximum Green (s)				20.0	42.0					24.0	24.0	24.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.30	0.14	0.64	0.55						0.78	0.98
Control Delay (s/veh)		1.4	0.3	56.4	16.3						60.9	58.4
Queue Delay		0.1	0.2	3.1	1.9						0.0	0.0
Total Delay (s/veh)		1.5	0.5	59.6	18.1						60.9	58.4
Queue Length 50th (ft)		7	0	114	176						235	252
Queue Length 95th (ft)		8	0	123	270						296	#368
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2865	1099	581	1646						387	553
Starvation Cap Reductn		734	526	156	541						0	0
Spillback Cap Reductn		56	0	0	4						0	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.33	0.23	0.78	0.83						0.78	0.98

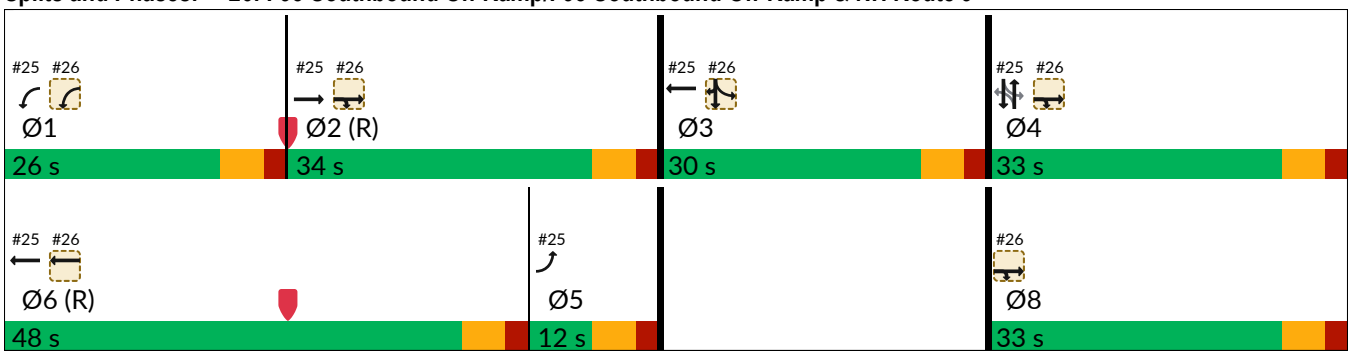
Intersection Summary
Cycle Length: 123

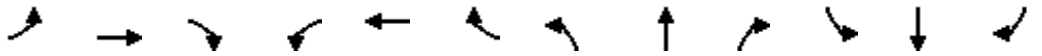
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	34.0	33.0	12.0	33.0
Total Split (%)	28%	27%	10%	27%
Maximum Green (s)	28.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

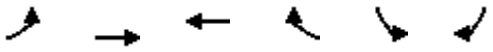




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	663	120	279	767	0	0	0	0	242	0	433
Future Volume (vph)	0	663	120	279	767	0	0	0	0	242	0	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3173	3271						1770	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3173	3271						1770	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	0	713	129	332	913	0	0	0	0	302	0	541
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	207
Lane Group Flow (vph)	0	713	63	332	913	0	0	0	0	0	303	334
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		56.1	56.1	18.0	56.3						24.9	24.9
Effective Green, g (s)		60.1	60.1	20.0	58.3						26.9	26.9
Actuated g/C Ratio		0.49	0.49	0.16	0.47						0.22	0.22
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2402	876	515	1550						387	346
v/s Ratio Prot		c0.15	0.04	c0.10	c0.28						0.17	c0.21
v/s Ratio Perm												
v/c Ratio		0.30	0.07	0.64	0.59						0.78	0.97
Uniform Delay, d1		18.8	16.7	48.2	23.6						45.3	47.6
Progression Factor		0.12	0.01	1.06	0.66						1.00	1.00
Incremental Delay, d2		0.1	0.0	2.7	1.6						9.9	38.8
Delay (s)		2.2	0.2	53.7	17.1						55.2	86.4
Level of Service		A	A	D	B						E	F
Approach Delay (s/veh)		1.9			26.9			0.0			75.2	
Approach LOS		A			C			A			E	

Intersection Summary				
HCM 2000 Control Delay (s/veh)	33.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	54.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

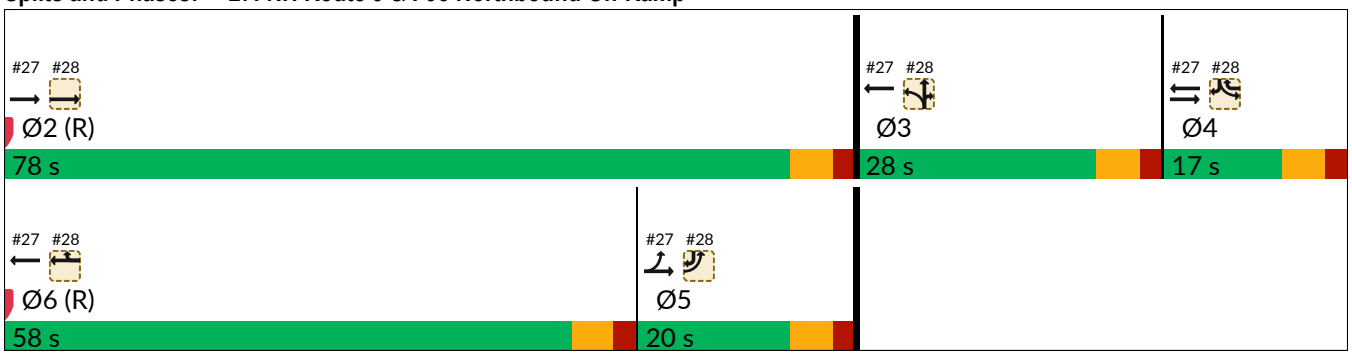


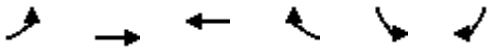
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	137	768	1046	94	0	0				
Future Volume (vph)	137	768	1046	94	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1652	3303	4700	1620	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1652	3303	4700	1620	0	0				
Satd. Flow (RTOR)				79						
Adj. Flow (vph)	154	863	1162	104	0	0				
Lane Group Flow (vph)	154	863	1162	104	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	20.0						78.0	28.0	17.0	58.0
Total Split (%)	16.3%						63%	23%	14%	47%
Maximum Green (s)	14.0						72.0	22.0	11.0	52.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.71	0.36	0.31	0.06						
Control Delay (s/veh)	59.7	7.7	1.7	0.1						
Queue Delay	5.6	0.6	0.2	0.0						
Total Delay (s/veh)	65.3	8.2	1.9	0.1						
Queue Length 50th (ft)	125	126	57	0						
Queue Length 95th (ft)	m#198	147	38	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	217	2474	3875	1620						
Starvation Cap Reductn	29	1114	1690	0						
Spillback Cap Reductn	0	50	465	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.82	0.63	0.53	0.06						

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	137	768	1046	94	0	0
Future Volume (vph)	137	768	1046	94	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	2.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1652	3303	4700	1620		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1652	3303	4700	1620		
Peak-hour factor, PHF	0.89	0.89	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	863	1162	104	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	154	863	1162	104	0	0
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	14.2	87.7	96.8	123.0		
Effective Green, g (s)	16.2	89.7	98.8	123.0		
Actuated g/C Ratio	0.13	0.73	0.80	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	217	2408	3775	1620		
v/s Ratio Prot	c0.09	c0.26	c0.25			
v/s Ratio Perm				0.06		
v/c Ratio	0.71	0.36	0.31	0.06		
Uniform Delay, d1	51.1	6.1	3.2	0.0		
Progression Factor	0.82	1.20	0.49	1.00		
Incremental Delay, d2	9.5	0.1	0.0	0.1		
Delay (s)	51.4	7.4	1.6	0.1		
Level of Service	D	A	A	A		
Approach Delay (s/veh)		14.1	1.5		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

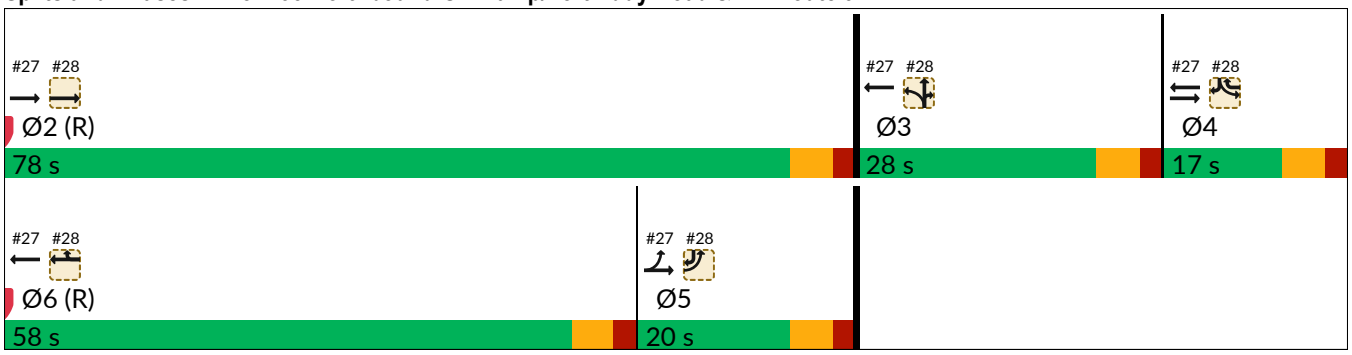
c Critical Lane Group

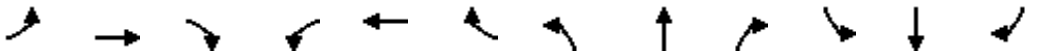
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	653	0	0	783	91	197	129	509	92	0	160
Future Volume (vph)	101	653	0	0	783	91	197	129	509	92	0	160
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.900	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3204	3421	0	0	3455	1652	1752	3022	1474	3367	0	1605
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	3421	0	0	3455	1652	1752	3022	1474	3367	0	1605
Satd. Flow (RTOR)						99		217	217			117
Adj. Flow (vph)	116	751	0	0	851	99	253	165	653	124	0	216
Lane Group Flow (vph)	116	751	0	0	851	99	253	492	326	124	0	216
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Detector Phase	5	2			6	4 6	3	3	3	4		4 5
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Minimum Split (s)	12.0	23.0			32.0		12.0	12.0	12.0	12.0		
Total Split (s)	20.0	78.0			58.0		28.0	28.0	28.0	17.0		
Total Split (%)	16.3%	63.4%			47.2%		22.8%	22.8%	22.8%	13.8%		
Maximum Green (s)	14.0	72.0			52.0		22.0	22.0	22.0	11.0		
Yellow Time (s)	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		
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0	-2.0		
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Recall Mode	None	C-Min			C-Min		None	None	None	None		
Walk Time (s)		7.0			7.0							
Flash Don't Walk (s)		10.0			19.0							
Pedestrian Calls (#/hr)		0			0							
v/c Ratio	0.28	0.38			0.59	0.10	0.70	0.62	0.69	0.32		0.45
Control Delay (s/veh)	32.5	6.6			29.4	3.5	57.7	28.5	23.8	53.2		13.1
Queue Delay	0.0	0.3			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	32.5	6.9			29.4	3.5	57.7	28.5	23.8	53.2		13.1
Queue Length 50th (ft)	46	126			267	1	196	113	89	49		42
Queue Length 95th (ft)	44	152			348	9	247	135	146	66		62
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	422	2058			1516	1009	359	793	475	386		484
Starvation Cap Reductn	0	687			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.27	0.55			0.56	0.10	0.70	0.62	0.69	0.32		0.45

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

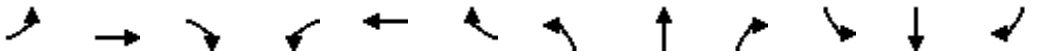




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	653	0	0	783	91	197	129	509	92	0	160
Future Volume (vph)	101	653	0	0	783	91	197	129	509	92	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3204	3421			3455	1652	1752	3023	1474	3367		1605
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3204	3421			3455	1652	1752	3023	1474	3367		1605
Peak-hour factor, PHF	0.87	0.87	0.87	0.92	0.92	0.92	0.78	0.78	0.78	0.74	0.74	0.74
Adj. Flow (vph)	116	751	0	0	851	99	253	165	653	124	0	216
RTOR Reduction (vph)	0	0	0	0	0	43	0	172	172	0	0	88
Lane Group Flow (vph)	116	751	0	0	851	56	253	320	154	124	0	128
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Actuated Green, G (s)	14.2	69.6			49.4	67.5	23.3	23.3	23.3	12.1		26.3
Effective Green, g (s)	16.2	71.6			51.4	69.5	25.3	25.3	25.3	14.1		30.3
Actuated g/C Ratio	0.13	0.58			0.42	0.57	0.21	0.21	0.21	0.11		0.25
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	421	1991			1443	933	360	621	303	385		395
v/s Ratio Prot	0.04	c0.22			c0.25	0.03	c0.14	0.11	0.10	0.04		c0.08
v/s Ratio Perm												
v/c Ratio	0.28	0.38			0.59	0.06	0.70	0.51	0.51	0.32		0.32
Uniform Delay, d1	48.1	13.8			27.7	12.0	45.4	43.4	43.3	50.1		38.0
Progression Factor	0.64	0.45			1.01	1.49	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.3	0.5			1.7	0.0	6.1	0.7	1.3	0.5		0.5
Delay (s)	31.0	6.7			29.6	17.9	51.5	44.1	44.7	50.5		38.4
Level of Service	C	A			C	B	D	D	D	D		D
Approach Delay (s/veh)		9.9			28.4			46.0			42.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

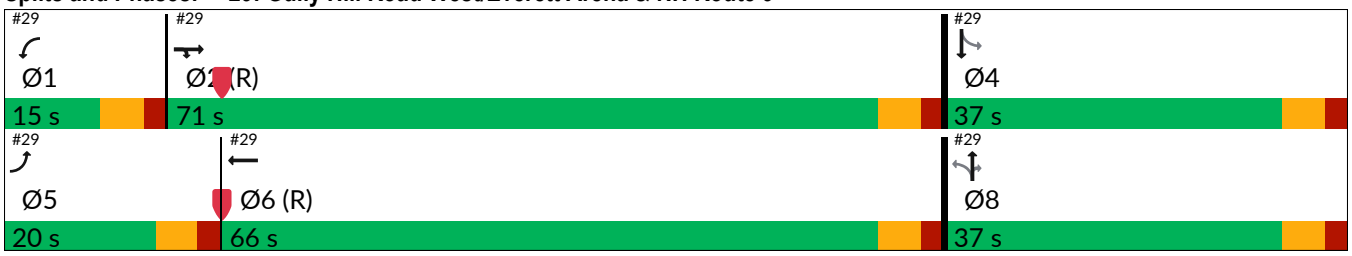


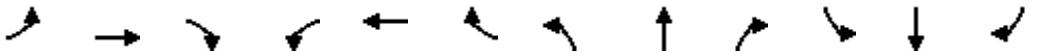
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Future Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1728	3455	1492	1728	3455	0	0	1752	1620	0	1792	0
Flt Permitted	0.950			0.950				0.748				
Satd. Flow (perm)	1728	3455	1492	1728	3455	0	0	1380	1620	0	1792	0
Satd. Flow (RTOR)			80						80		12	
Adj. Flow (vph)	4	1399	163	27	879	0	40	0	9	0	2	12
Lane Group Flow (vph)	4	1399	163	27	879	0	0	40	9	0	14	0
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0	
Total Split (s)	20.0	71.0	71.0	15.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	16.3%	57.7%	57.7%	12.2%	53.7%		30.1%	30.1%	30.1%	30.1%	30.1%	
Maximum Green (s)	14.0	65.0	65.0	9.0	60.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
v/c Ratio	0.04	0.51	0.13	0.20	0.30			0.32	0.04		0.08	
Control Delay (s/veh)	63.7	4.6	2.0	67.8	1.8			58.4	0.4		26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	63.7	4.6	2.0	67.8	1.8			58.4	0.4		26.7	
Queue Length 50th (ft)	3	167	11	21	53			31	0		1	
Queue Length 95th (ft)	m7	71	0	57	30			64	0		6	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150								
Base Capacity (vph)	224	2763	1209	156	2936			370	493		489	
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	0.02	0.51	0.13	0.17	0.30			0.11	0.02		0.03	

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 55 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Future Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	3455			1752	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	3455			1380	1620		1792	
Peak-hour factor, PHF	0.81	0.81	0.81	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	4	1399	163	27	879	0	40	0	9	0	2	12
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	8	0	11	0
Lane Group Flow (vph)	4	1399	144	27	879	0	0	40	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.3	92.0	92.0	5.1	95.8			7.9	7.9		7.9	
Effective Green, g (s)	3.3	94.0	94.0	7.1	97.8			9.9	9.9		9.9	
Actuated g/C Ratio	0.03	0.76	0.76	0.06	0.80			0.08	0.08		0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2640	1140	99	2747			111	130		144	
v/s Ratio Prot	0.00	c0.40	0.10	c0.02	c0.25						0.00	
v/s Ratio Perm								c0.03	0.00			
v/c Ratio	0.09	0.53	0.13	0.27	0.32			0.36	0.01		0.02	
Uniform Delay, d1	58.4	5.7	3.8	55.5	3.5			53.6	52.0		52.1	
Progression Factor	1.17	0.63	0.66	1.22	0.51			1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.7	0.2	1.4	0.3			2.0	0.0		0.1	
Delay (s)	69.3	4.3	2.7	69.4	2.1			55.5	52.0		52.1	
Level of Service	E	A	A	E	A			E	D		D	
Approach Delay (s/veh)		4.3			4.1			54.9			52.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Future Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.998							0.850			
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Satd. Flow (RTOR)		1							540			
Adj. Flow (vph)	4	1476	21	1	46	924	1	31	0	40	4	0
Lane Group Flow (vph)	4	1497	0	0	47	925	0	31	40	0	4	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	15.0	50.0		15.0	15.0	50.0		14.0	15.0		14.0	15.0
Total Split (%)	12.2%	40.7%		12.2%	12.2%	40.7%		11.4%	12.2%		11.4%	12.2%
Maximum Green (s)	9.0	44.0		9.0	9.0	44.0		8.0	9.0		8.0	9.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.57			0.31	0.32		0.19	0.07		0.03	
Control Delay (s/veh)	61.0	6.1			57.2	3.9		52.0	0.2		54.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	
Total Delay (s/veh)	61.0	6.1			57.2	3.9		52.0	0.2		54.0	
Queue Length 50th (ft)	3	30			36	54		25	0		3	
Queue Length 95th (ft)	m7	151			74	203		54	0		5	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	154	2646			165	2928		170	628		151	
Starvation Cap Reductn	0	0			0	0		0	0		0	
Spillback Cap Reductn	0	0			0	0		0	0		0	
Storage Cap Reductn	0	0			0	0		0	0		0	
Reduced v/c Ratio	0.03	0.57			0.28	0.32		0.18	0.06		0.03	

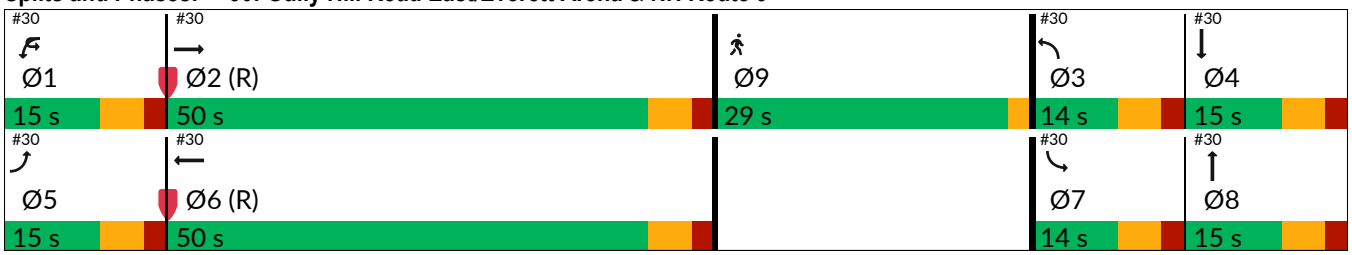
Intersection Summary
Cycle Length: 123

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		24%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 123
Offset: 61 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



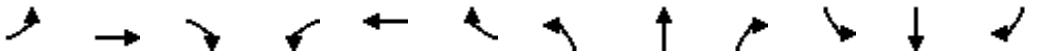
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Future Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	
Frt	1.00	1.00			1.00	1.00		1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (prot)	1728	3448			1728	3455		1703	1524		1865	
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (perm)	1728	3448			1728	3455		1703	1524		1865	
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	4	1476	21	1	46	924	1	31	0	40	4	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	37	0	0	0
Lane Group Flow (vph)	4	1497	0	0	47	925	0	31	3	0	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.3	83.2			7.6	89.5		7.0	6.9		1.3	
Effective Green, g (s)	3.3	85.2			9.6	91.5		9.0	8.9		3.3	
Actuated g/C Ratio	0.03	0.69			0.08	0.74		0.07	0.07		0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2388			134	2570		124	110		50	
v/s Ratio Prot	0.00	c0.43			c0.03	0.27		c0.02	c0.00		0.00	
v/s Ratio Perm												
v/c Ratio	0.09	0.63			0.35	0.36		0.25	0.03		0.08	
Uniform Delay, d1	58.4	10.3			53.7	5.5		53.8	53.0		58.4	
Progression Factor	1.13	0.60			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.7	1.1			1.6	0.4		1.1	0.1		0.7	
Delay (s)	66.4	7.3			55.3	5.9		54.9	53.1		59.1	
Level of Service	E	A			E	A		D	D		E	
Approach Delay (s/veh)		7.5				8.3			53.9			59.1
Approach LOS		A				A			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

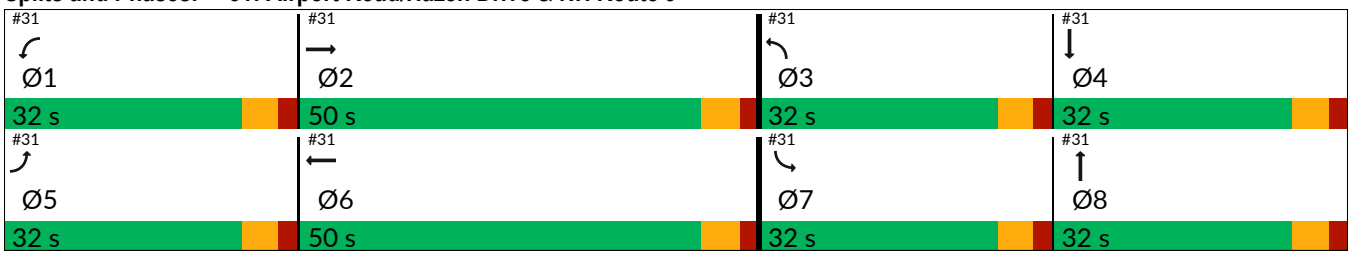


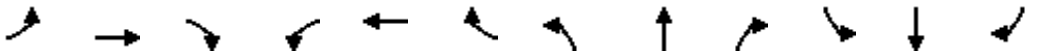
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Future Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			283			157			157			157
Adj. Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
Lane Group Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.78	0.60	0.18	0.56	0.73	0.08	0.51	0.31	0.08	0.19	0.56	0.06
Control Delay (s/veh)	54.8	31.1	0.2	53.9	40.3	0.1	54.9	38.6	0.1	56.6	53.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.8	31.1	0.2	53.9	40.3	0.1	54.9	38.6	0.1	56.6	53.9	0.1
Queue Length 50th (ft)	237	243	0	105	252	0	83	90	0	19	106	0
Queue Length 95th (ft)	#386	322	0	204	377	0	162	165	0	50	175	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	457	1464	1599	457	1451	1652	433	492	1568	429	451	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.56	0.18	0.35	0.52	0.08	0.28	0.29	0.08	0.07	0.34	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 112
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

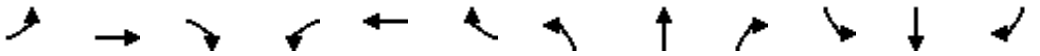




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Future Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.75	0.75	0.75	0.93	0.93	0.93	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	26.6	42.4	114.3	15.6	31.4	114.3	13.8	27.5	114.3	4.8	18.5	114.3
Effective Green, g (s)	28.6	44.4	114.3	17.6	33.4	114.3	15.8	29.5	114.3	6.8	20.5	114.3
Actuated g/C Ratio	0.25	0.39	1.00	0.15	0.29	1.00	0.14	0.26	1.00	0.06	0.18	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	447	1342	1599	275	1009	1652	234	460	1568	99	316	1501
v/s Ratio Prot	c0.20	0.24		0.09	c0.22		c0.07	0.08		0.02	c0.09	
v/s Ratio Perm			0.18			0.08			0.08			0.06
v/c Ratio	0.80	0.62	0.18	0.57	0.74	0.08	0.52	0.32	0.08	0.28	0.49	0.06
Uniform Delay, d1	40.1	28.1	0.0	44.9	36.6	0.0	45.7	34.2	0.0	51.4	42.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.5	0.8	0.2	2.9	3.0	0.1	2.1	0.4	0.1	1.6	1.2	0.1
Delay (s)	49.6	28.9	0.2	47.8	39.6	0.1	47.8	34.6	0.1	53.0	43.4	0.1
Level of Service	D	C	A	D	D	A	D	C	A	D	D	A
Approach Delay (s/veh)		28.4			35.7			28.2			29.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	114.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Future Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.994			0.963			0.985			0.946	
Flt Protected	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (prot)	1787	3316	0	1652	3295	0	1652	1712	0	1585	1686	0
Flt Permitted	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (perm)	1787	3316	0	1652	3295	0	1652	1712	0	1585	1686	0
Satd. Flow (RTOR)		3			29			3			17	
Adj. Flow (vph)	50	571	23	11	648	210	120	141	16	210	214	134
Lane Group Flow (vph)	50	594	0	11	858	0	120	157	0	189	369	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.26	0.40		0.08	0.72		0.44	0.55		0.52	0.92	
Control Delay (s/veh)	45.5	19.8		45.1	31.5		42.3	44.5		40.6	65.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	45.5	19.8		45.1	31.5		42.3	44.5		40.6	65.7	
Queue Length 50th (ft)	30	116		7	241		70	91		111	232	
Queue Length 95th (ft)	69	223		26	357		97	120		195	#448	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125			130			350		
Base Capacity (vph)	319	1496		295	1196		382	398		366	403	
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	0.16	0.40		0.04	0.72		0.31	0.39		0.52	0.92	

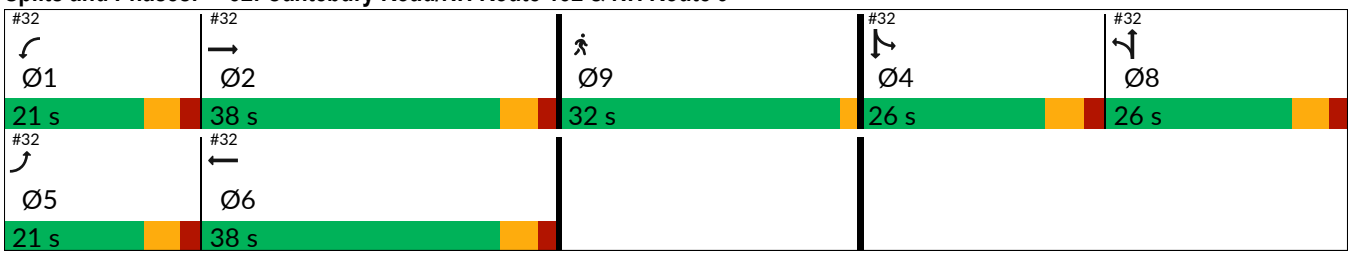
Intersection Summary
Cycle Length: 143

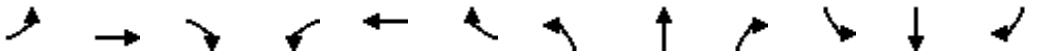
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 96.2
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9

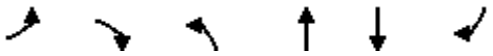




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Future Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frt	1.00	0.99		1.00	0.96		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3317		1652	3296		1652	1712		1585	1685	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3317		1652	3296		1652	1712		1585	1685	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.70	0.70	0.70	0.87	0.87	0.87
Adj. Flow (vph)	50	571	23	11	648	210	120	141	16	210	214	134
RTOR Reduction (vph)	0	2	0	0	18	0	0	3	0	0	13	0
Lane Group Flow (vph)	50	592	0	11	840	0	120	154	0	189	356	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	6.8	41.3		1.3	35.8		14.0	14.0		20.2	20.2	
Effective Green, g (s)	8.8	43.3		3.3	37.8		16.0	16.0		22.2	22.2	
Actuated g/C Ratio	0.09	0.43		0.03	0.38		0.16	0.16		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	156	1424		54	1236		262	271		349	371	
v/s Ratio Prot	c0.03	0.18		0.01	c0.25		0.07	c0.09		0.12	c0.21	
v/s Ratio Perm												
v/c Ratio	0.32	0.42		0.20	0.68		0.46	0.57		0.54	0.96	
Uniform Delay, d1	43.2	20.0		47.5	26.4		38.5	39.2		34.8	38.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.2		1.9	1.5		1.3	2.9		1.7	35.6	
Delay (s)	44.4	20.2		49.3	27.9		39.7	42.1		36.5	74.4	
Level of Service	D	C		D	C		D	D		D	E	
Approach Delay (s/veh)		22.0			28.2			41.1			61.6	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

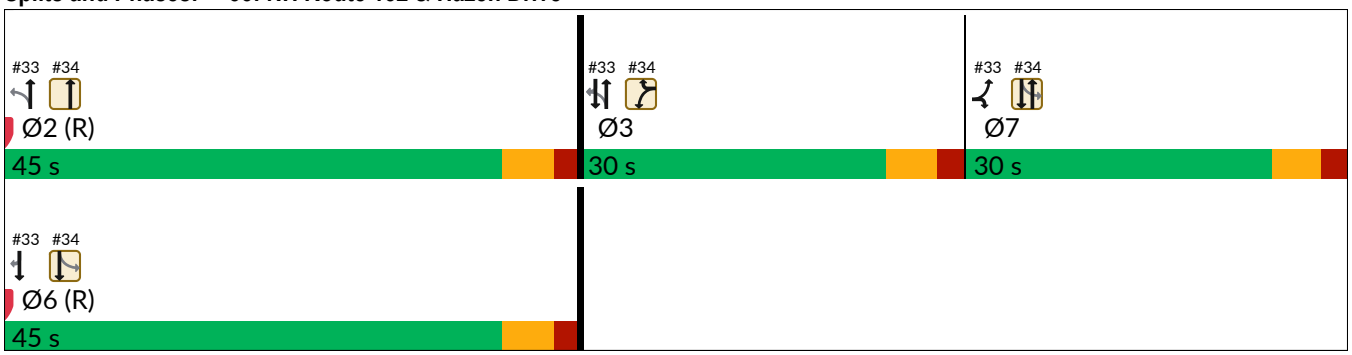


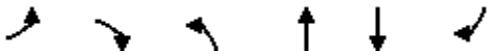
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	104	11	28	303	440	521			
Future Volume (vph)	104	11	28	303	440	521			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	1719	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.933					
Satd. Flow (perm)	1719	1538	0	1664	1881	1546			
Satd. Flow (RTOR)		16				628			
Adj. Flow (vph)	149	16	34	365	530	628			
Lane Group Flow (vph)	149	16	0	399	530	628			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.34	0.04		0.36	0.42	0.51			
Control Delay (s/veh)	35.0	13.6		8.5	9.2	3.1			
Queue Delay	0.0	0.0		0.0	1.4	0.7			
Total Delay (s/veh)	35.0	13.6		8.5	10.6	3.7			
Queue Length 50th (ft)	86	0		105	178	51			
Queue Length 95th (ft)	111	12		139	218	36			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	436	402		1111	1255	1240			
Starvation Cap Reductn	0	0		0	507	292			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.34	0.04		0.36	0.71	0.66			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	11	28	303	440	521
Future Volume (vph)	104	11	28	303	440	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1719	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.93	1.00	1.00
Satd. Flow (perm)	1719	1538		1663	1881	1546
Peak-hour factor, PHF	0.70	0.70	0.83	0.83	0.83	0.83
Adj. Flow (vph)	149	16	34	365	530	628
RTOR Reduction (vph)	0	12	0	0	0	208
Lane Group Flow (vph)	149	4	0	399	530	420
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	24.7	24.7		68.3	68.3	68.3
Effective Green, g (s)	26.7	26.7		70.3	70.3	70.3
Actuated g/C Ratio	0.25	0.25		0.67	0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	437	391		1113	1259	1035
v/s Ratio Prot	c0.09	0.00			c0.28	
v/s Ratio Perm				0.24		0.27
v/c Ratio	0.34	0.01		0.36	0.42	0.41
Uniform Delay, d1	32.0	29.3		7.5	8.0	7.9
Progression Factor	1.00	1.00		1.00	1.05	3.51
Incremental Delay, d2	0.5	0.0		0.2	0.2	0.2
Delay (s)	32.4	29.3		7.7	8.5	27.9
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	32.1			7.7	19.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

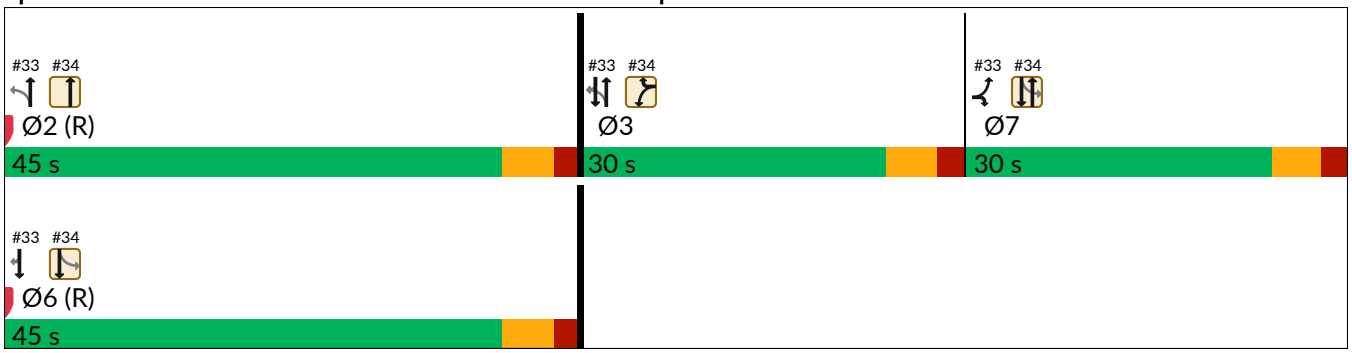
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	275	137	377	48	33	701			
Future Volume (vph)	275	137	377	48	33	701			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.983						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3267	0	1728	1818			
Flt Permitted	0.950				0.432				
Satd. Flow (perm)	1770	1583	3267	0	786	1818			
Satd. Flow (RTOR)		145	29						
Adj. Flow (vph)	320	159	483	62	39	825			
Lane Group Flow (vph)	320	159	545	0	39	825			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.71	0.31	0.25		0.07	0.68			
Control Delay (s/veh)	46.0	8.6	4.6		6.4	14.0			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	46.0	8.6	4.9		6.4	14.0			
Queue Length 50th (ft)	201	7	44		8	297			
Queue Length 95th (ft)	286	53	49		18	379			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	450	511	2239		536	1241			
Starvation Cap Reductn	0	0	962		0	0			
Spillback Cap Reductn	0	0	0		0	7			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.71	0.31	0.43		0.07	0.67			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

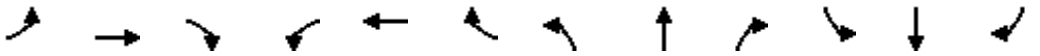


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	137	377	48	33	701
Future Volume (vph)	275	137	377	48	33	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3267		1728	1818
Flt Permitted	0.95	1.00	1.00		0.43	1.00
Satd. Flow (perm)	1770	1583	3267		786	1818
Peak-hour factor, PHF	0.86	0.86	0.78	0.78	0.85	0.85
Adj. Flow (vph)	320	159	483	62	39	825
RTOR Reduction (vph)	0	108	10	0	0	0
Lane Group Flow (vph)	320	51	535	0	39	825
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	24.6	24.6	68.4		68.4	68.4
Effective Green, g (s)	26.6	26.6	70.4		70.4	70.4
Actuated g/C Ratio	0.25	0.25	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	448	401	2190		526	1218
v/s Ratio Prot	c0.18	0.03	0.16			c0.45
v/s Ratio Perm					0.05	
v/c Ratio	0.71	0.13	0.24		0.07	0.68
Uniform Delay, d1	35.7	30.2	6.8		6.0	10.4
Progression Factor	1.00	1.00	0.67		1.00	1.00
Incremental Delay, d2	5.3	0.1	0.1		0.1	1.5
Delay (s)	41.1	30.4	4.7		6.1	12.0
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	37.5		4.7			11.7
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

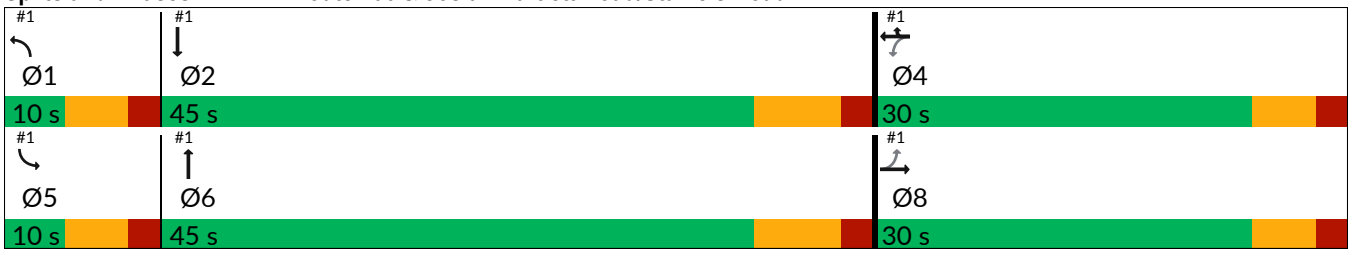
2027 Opening Year Build Weekday Evening Peak-Hour

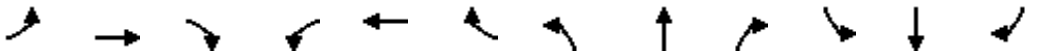


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Future Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910				0.850		0.985			0.999	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1775	1583	1787	3521	0	1770	3536	0
Flt Permitted					0.723		0.950			0.950		
Satd. Flow (perm)	0	1662	0	0	1347	1583	1787	3521	0	1770	3536	0
Satd. Flow (RTOR)		6				135		18			1	
Adj. Flow (vph)	0	3	6	76	1	69	1	1243	137	33	695	6
Lane Group Flow (vph)	0	9	0	0	77	69	1	1380	0	33	701	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.31	0.17	0.01	0.57		0.27	0.28	
Control Delay (s/veh)		17.5			28.0	1.5	32.0	9.7		37.5	5.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.5			28.0	1.5	32.0	9.7		37.5	5.9	
Queue Length 50th (ft)		1			25	0	0	120		12	47	
Queue Length 95th (ft)		8			68	5	5	313		42	128	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		760			613	795	125	2417		123	2521	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.13	0.09	0.01	0.57		0.27	0.28	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 60.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

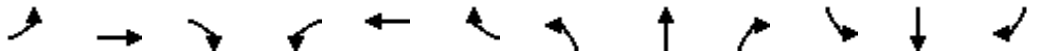
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Future Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.91			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1663			1775	1583	1787	3521		1770	3535	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1663			1347	1583	1787	3521		1770	3535	
Peak-hour factor, PHF	0.63	0.63	0.63	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	3	6	76	1	69	1	1243	137	33	695	6
RTOR Reduction (vph)	0	5	0	0	0	59	0	7	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	77	10	1	1373	0	33	701	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.3			7.3	7.3	0.7	38.4		1.3	39.0	
Effective Green, g (s)		9.3			9.3	9.3	0.7	40.4		1.3	41.0	
Actuated g/C Ratio		0.14			0.14	0.14	0.01	0.61		0.02	0.62	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		232			188	221	18	2139		34	2179	
v/s Ratio Prot		0.00				0.01	0.00	c0.39		c0.02	0.20	
v/s Ratio Perm					c0.06							
v/c Ratio		0.02			0.41	0.04	0.06	0.64		0.97	0.32	
Uniform Delay, d1		24.7			26.1	24.8	32.6	8.4		32.6	6.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.5	0.1	1.3	0.7		141.9	0.1	
Delay (s)		24.7			27.5	24.8	33.9	9.1		174.5	6.2	
Level of Service		C			C	C	C	A		F	A	
Approach Delay (s/veh)		24.7			26.3			9.1			13.8	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

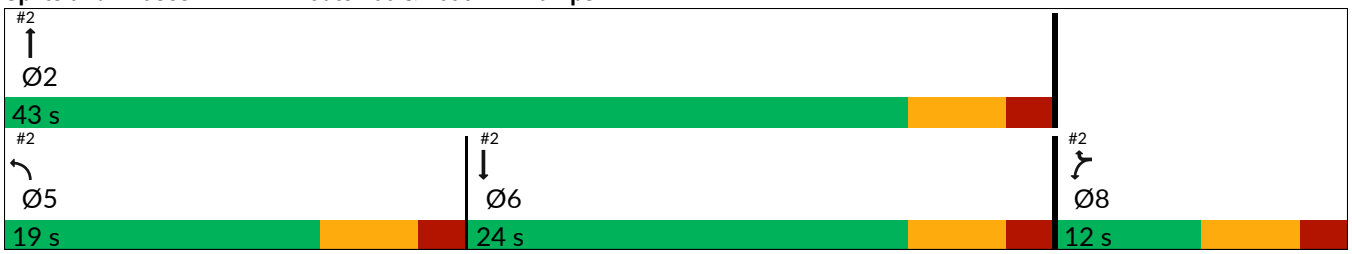


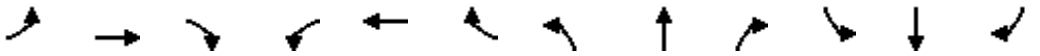
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	0	15	752	1558	0	0	530	384
Future Volume (vph)	0	0	0	7	0	15	752	1558	0	0	530	384
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Satd. Flow (RTOR)						179						400
Adj. Flow (vph)	0	0	0	10	0	22	792	1640	0	0	552	400
Lane Group Flow (vph)	0	0	0	10	0	22	792	1640	0	0	552	400
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.03		0.05	0.65	0.53			0.46	0.26
Control Delay (s/veh)				19.4		0.2	18.2	3.2			12.7	0.4
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.4		0.2	18.2	3.2			12.7	0.4
Queue Length 50th (ft)				2		0	58	0			41	0
Queue Length 95th (ft)				10		0	#214	164			108	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				369		463	1270	3084			1711	1531
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				0.03		0.05	0.62	0.53			0.32	0.26

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 42.4
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

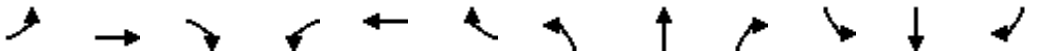




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	0	15	752	1558	0	0	530	384
Future Volume (vph)	0	0	0	7	0	15	752	1558	0	0	530	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1847		1599	3385	3490			3421	1531
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1847		1599	3385	3490			3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	10	0	22	792	1640	0	0	552	400
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	10	0	2	792	1640	0	0	552	400
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.9		1.9	13.1	32.3			13.2	46.2
Effective Green, g (s)				3.9		3.9	15.1	34.3			15.2	46.2
Actuated g/C Ratio				0.08		0.08	0.33	0.74			0.33	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				155		134	1106	2591			1125	1531
v/s Ratio Prot				0.01		0.00	c0.23	c0.47			0.16	
v/s Ratio Perm												c0.26
v/c Ratio				0.06		0.01	0.72	0.63			0.49	0.26
Uniform Delay, d1				19.5		19.4	13.7	2.9			12.4	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		0.0	2.2	0.5			0.3	0.4
Delay (s)				19.6		19.4	15.9	3.4			12.7	0.4
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			19.5			7.5			7.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

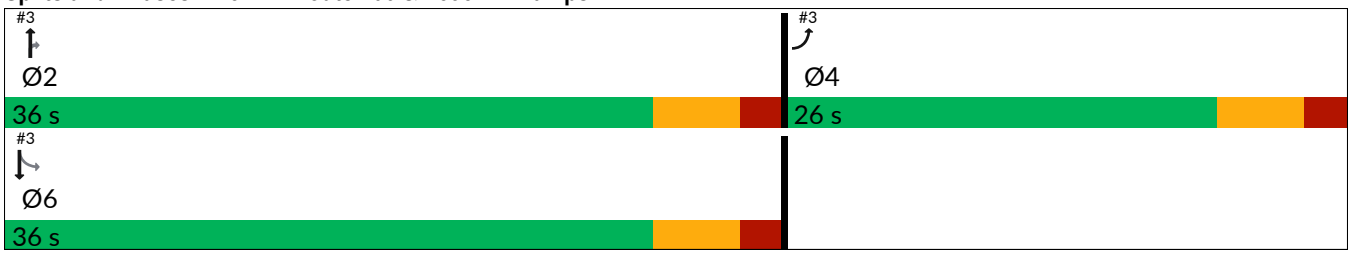


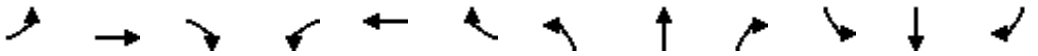
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	763	0	897	0	0	0	0	1547	8	8	529	0
Future Volume (vph)	763	0	897	0	0	0	0	1547	8	8	529	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.872	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3043	0
Satd. Flow (RTOR)			906						53			
Adj. Flow (vph)	771	0	906	0	0	0	0	1700	9	10	637	0
Lane Group Flow (vph)	771	0	906	0	0	0	0	1700	9	0	647	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.68		0.32					0.91	0.01		0.40	
Control Delay (s/veh)	20.7		0.3					23.4	0.0		9.4	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	20.7		0.3					23.4	0.0		9.4	
Queue Length 50th (ft)	121		0					286	0		69	
Queue Length 95th (ft)	174		0					#472	0		95	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1282		2814					1859	856		1637	
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	0.60		0.32					0.91	0.01		0.40	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 59.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

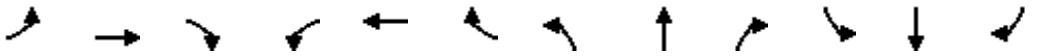




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	763	0	897	0	0	0	0	1547	8	8	529	0
Future Volume (vph)	763	0	897	0	0	0	0	1547	8	8	529	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3487	
Flt Permitted	0.95		1.00					1.00	1.00		0.87	
Satd. Flow (perm)	3467		2814					3455	1546		3044	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.91	0.91	0.91	0.83	0.83	0.83
Adj. Flow (vph)	771	0	906	0	0	0	0	1700	9	10	637	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	771	0	906	0	0	0	0	1700	5	0	647	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	17.5		59.6					30.1	30.1		30.1	
Effective Green, g (s)	19.5		59.6					32.1	32.1		32.1	
Actuated g/C Ratio	0.33		1.00					0.54	0.54		0.54	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1134		2814					1860	832		1639	
v/s Ratio Prot	c0.22							c0.49				
v/s Ratio Perm			0.32						0.00		0.21	
v/c Ratio	0.68		0.32					0.91	0.01		0.39	
Uniform Delay, d1	17.3		0.0					12.5	6.4		8.1	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	1.6		0.3					7.4	0.0		0.2	
Delay (s)	19.0		0.3					19.9	6.4		8.2	
Level of Service	B		A					B	A		A	
Approach Delay (s/veh)		8.9			0.0			19.8			8.2	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

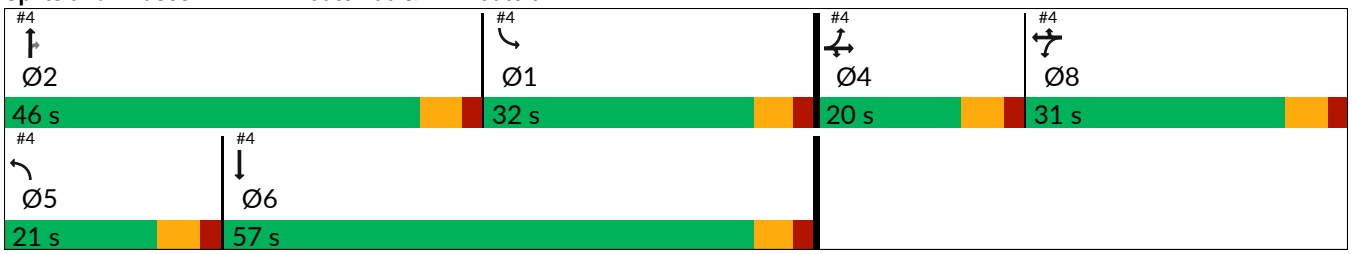


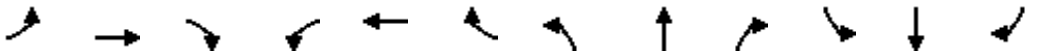
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Future Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.985		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1557	3228	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.985		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1557	3228	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			545			540
Adj. Flow (vph)	742	369	58	344	311	51	58	921	545	97	781	723
Lane Group Flow (vph)	742	369	58	213	442	51	58	921	545	97	781	723
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	1.48	1.35	0.15	0.65	0.65	0.11	0.33	0.74	0.60	0.45	0.55	0.40
Control Delay (s/veh)	258.0	217.6	0.8	50.0	44.5	0.5	52.6	34.8	5.4	52.4	27.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total Delay (s/veh)	258.0	217.6	0.8	50.0	44.5	0.5	52.6	34.8	5.4	52.4	27.6	0.7
Queue Length 50th (ft)	~390	~361	0	156	162	0	40	295	0	66	227	0
Queue Length 95th (ft)	#554	#593	0	241	215	0	84	411	80	123	317	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	503	273	383	395	819	521	275	1363	940	454	1720	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	248	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.48	1.35	0.15	0.54	0.54	0.10	0.21	0.68	0.58	0.21	0.53	0.40

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 107.8
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Future Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1557	3229	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1557	3229	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	742	369	58	344	311	51	58	921	545	97	781	723
RTOR Reduction (vph)	0	0	49	0	0	40	0	0	350	0	0	0
Lane Group Flow (vph)	742	369	9	213	442	11	58	921	195	97	781	723
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.2	14.2	14.2	20.7	20.7	20.7	7.6	37.0	37.0	13.0	42.4	108.9
Effective Green, g (s)	16.2	16.2	16.2	22.7	22.7	22.7	9.6	39.0	39.0	15.0	44.4	108.9
Actuated g/C Ratio	0.15	0.15	0.15	0.21	0.21	0.21	0.09	0.36	0.36	0.14	0.41	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	498	270	229	324	673	319	152	1237	553	238	1408	1812
v/s Ratio Prot	c0.22	0.20	0.01	0.14	c0.14	0.01	0.03	c0.27		0.06	c0.23	
v/s Ratio Perm									0.13			0.40
v/c Ratio	1.49	1.37	0.04	0.66	0.66	0.03	0.38	0.74	0.35	0.41	0.55	0.40
Uniform Delay, d1	46.4	46.4	39.7	39.5	39.5	34.4	46.8	30.6	25.7	42.9	24.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	231.0	186.9	0.1	4.8	2.3	0.0	1.6	2.5	0.4	1.1	0.5	0.7
Delay (s)	277.3	233.3	39.7	44.3	41.8	34.4	48.4	33.1	26.1	44.0	25.2	0.7
Level of Service	F	F	D	D	D	C	D	C	C	D	C	A
Approach Delay (s/veh)		251.6			42.0			31.1			15.2	
Approach LOS		F			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	79.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	108.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	73.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1	15	73	1	159	11	929	20	98	854	5
Future Vol, veh/h	4	1	15	73	1	159	11	929	20	98	854	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	32	32	32	85	85	85	84	84	84	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	3	3	3
Mvmt Flow	13	3	47	86	1	187	13	1106	24	100	871	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2207	2230	874	2205	2209	1106	877	0	0	1130	0	0
Stage 1	1074	1074	-	1132	1132	-	-	-	-	-	-	-
Stage 2	1133	1156	-	1073	1077	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.13	-	-
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	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	32	43	352	~ 32	45	258	775	-	-	615	-	-
Stage 1	269	299	-	249	281	-	-	-	-	-	-	-
Stage 2	249	273	-	269	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	36	352	~ 21	37	258	775	-	-	615	-	-
Mov Cap-2 Maneuver	~ 7	36	-	~ 21	37	-	-	-	-	-	-	-
Stage 1	225	250	-	245	276	-	-	-	-	-	-	-
Stage 2	67	269	-	193	249	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	$ 323.09	$ 577.72	0.11	1.23
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	775	-	-	8	352	21	258	615	-	-
HCM Lane V/C Ratio	0.017	-	-	1.843	0.133	4.024	0.724	0.163	-	-
HCM Ctrl Dly (s/v)	9.7	-	-	$ 1242	16.$	1730.5	48.4	12	-	-
HCM Lane LOS	A	-	-	F	C	F	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	0.5	11	5	0.6	-	-

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

Intersection	
Int Delay, s/veh	10.6

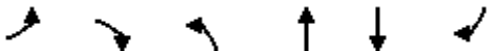
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	144	148	1165	807	135
Future Vol, veh/h	37	144	148	1165	807	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	90	90	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	39	150	164	1294	849	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2473	849	992	0	-	0
Stage 1	849	-	-	-	-	-
Stage 2	1623	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 33	362	701	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 25	362	701	-	-	-
Mov Cap-2 Maneuver	~ 25	-	-	-	-	-
Stage 1	322	-	-	-	-	-
Stage 2	178	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	138.62	1.32	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	701	-	25	362	-	-
HCM Lane V/C Ratio	0.234	-	1.514	0.414	-	-
HCM Ctrl Dly (s/v)	11.7	-	$ 593.3	21.8	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.9	-	4.7	2	-	-

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

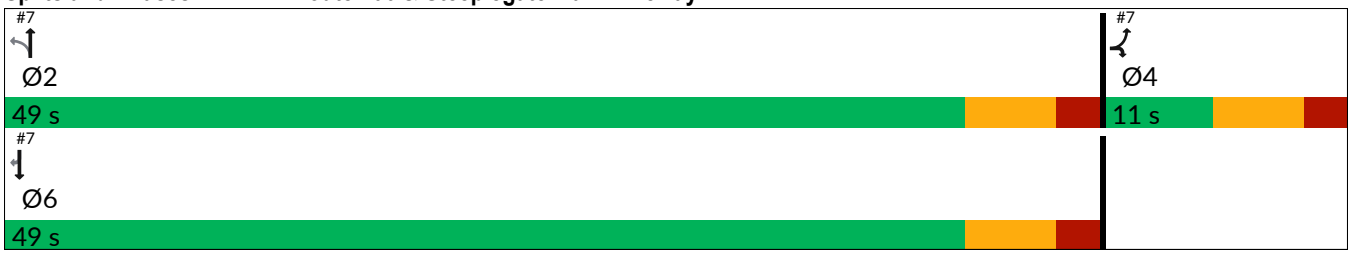


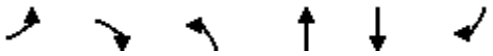
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	127	99	108	1186	825	127
Future Volume (vph)	127	99	108	1186	825	127
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1583	1728	1881	1845	1516
Flt Permitted	0.950		0.261			
Satd. Flow (perm)	1888	1583	475	1881	1845	1516
Satd. Flow (RTOR)		110				138
Adj. Flow (vph)	141	110	123	1348	897	138
Lane Group Flow (vph)	141	110	123	1348	897	138
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	16.0	16.0	16.0	16.0
Total Split (s)	11.0	11.0	49.0	49.0	49.0	49.0
Total Split (%)	18.3%	18.3%	81.7%	81.7%	81.7%	81.7%
Maximum Green (s)	5.0	5.0	43.0	43.0	43.0	43.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
v/c Ratio	0.62	0.38	0.32	0.90	0.61	0.11
Control Delay (s/veh)	39.7	10.6	5.3	17.6	5.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.7	10.6	5.3	17.6	5.5	0.7
Queue Length 50th (ft)	51	0	11	301	112	0
Queue Length 95th (ft)	#121	39	29	#700	196	9
Internal Link Dist (ft)	425			617	959	
Turn Bay Length (ft)		140	250			275
Base Capacity (vph)	227	287	380	1504	1475	1240
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	0.62	0.38	0.32	0.90	0.61	0.11

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 58.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 7: NH Route 106 & Steeplegate Mall Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	127	99	108	1186	825	127
Future Volume (vph)	127	99	108	1186	825	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	12	11	12	12	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1888	1583	1728	1881	1845	1516
Flt Permitted	0.95	1.00	0.26	1.00	1.00	1.00
Satd. Flow (perm)	1888	1583	474	1881	1845	1516
Peak-hour factor, PHF	0.90	0.90	0.88	0.88	0.92	0.92
Adj. Flow (vph)	141	110	123	1348	897	138
RTOR Reduction (vph)	0	99	0	0	0	32
Lane Group Flow (vph)	141	11	123	1348	897	106
Heavy Vehicles (%)	2%	2%	1%	1%	3%	3%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	3.9	3.9	43.8	43.8	43.8	43.8
Effective Green, g (s)	5.9	5.9	45.8	45.8	45.8	45.8
Actuated g/C Ratio	0.10	0.10	0.77	0.77	0.77	0.77
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	186	156	363	1443	1415	1163
v/s Ratio Prot	c0.07	0.01		c0.72	0.49	
v/s Ratio Perm			0.26			0.07
v/c Ratio	0.76	0.07	0.34	0.93	0.63	0.09
Uniform Delay, d1	26.2	24.4	2.2	5.7	3.2	1.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.1	0.2	0.6	11.4	0.9	0.0
Delay (s)	42.3	24.6	2.7	17.1	4.1	1.8
Level of Service	D	C	A	B	A	A
Approach Delay (s/veh)	34.6			15.9	3.8	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

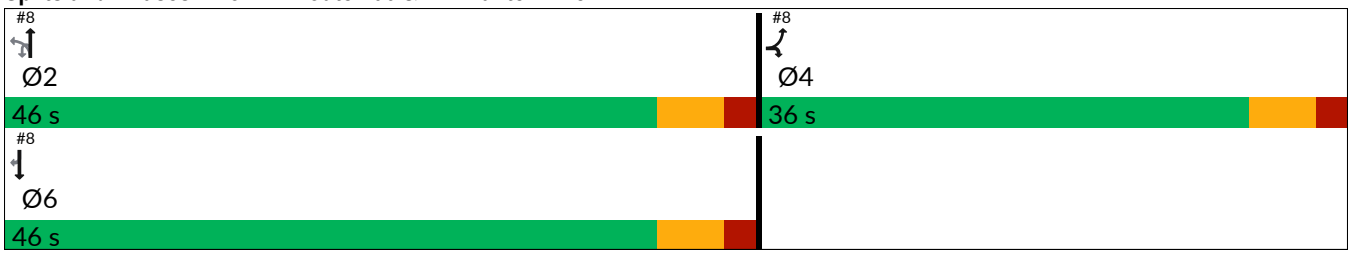
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	382	131	1	189	911	634	290
Future Volume (vph)	382	131	1	189	911	634	290
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1711	1863	1783	1568
Flt Permitted	0.950			0.258			
Satd. Flow (perm)	1745	1561	0	465	1863	1783	1568
Satd. Flow (RTOR)		132					315
Adj. Flow (vph)	386	132	1	222	1072	689	315
Lane Group Flow (vph)	386	132	0	223	1072	689	315
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.71	0.23		0.83	1.00	0.67	0.30
Control Delay (s/veh)	29.5	4.5		45.1	46.4	16.3	2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.5	4.5		45.1	46.4	16.3	2.2
Queue Length 50th (ft)	152	0		75	444	199	0
Queue Length 95th (ft)	239	32		#230	#813	419	38
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	766	759		268	1074	1028	1037
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	0.50	0.17		0.83	1.00	0.67	0.30

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 73.3
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	382	131	1	189	911	634	290
Future Volume (vph)	382	131	1	189	911	634	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1711	1863	1783	1568
Flt Permitted	0.95	1.00		0.26	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		464	1863	1783	1568
Peak-hour factor, PHF	0.99	0.99	0.85	0.85	0.85	0.92	0.92
Adj. Flow (vph)	386	132	1	222	1072	689	315
RTOR Reduction (vph)	0	91	0	0	0	0	133
Lane Group Flow (vph)	386	41	0	223	1072	689	182
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	21.0	21.0		40.2	40.2	40.2	40.2
Effective Green, g (s)	23.0	23.0		42.2	42.2	42.2	42.2
Actuated g/C Ratio	0.31	0.31		0.58	0.58	0.58	0.58
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	548	490		267	1074	1027	903
v/s Ratio Prot	c0.22	0.03			c0.58	0.39	
v/s Ratio Perm				0.48			0.12
v/c Ratio	0.70	0.08		0.84	1.00	0.67	0.20
Uniform Delay, d1	22.1	17.7		12.7	15.5	10.7	7.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	0.1		19.7	26.8	1.7	0.1
Delay (s)	26.2	17.8		32.3	42.3	12.4	7.5
Level of Service	C	B		C	D	B	A
Approach Delay (s/veh)	24.1				40.5	10.9	
Approach LOS	C				D	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	27.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	186	176	1084	823	33
Future Vol, veh/h	15	186	176	1084	823	33
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	91	91	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	230	193	1191	895	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2473	895	930	0	-	0
Stage 1	895	-	-	-	-	-
Stage 2	1578	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	33	341	739	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	25	341	739	-	-	-
Mov Cap-2 Maneuver	25	-	-	-	-	-
Stage 1	296	-	-	-	-	-
Stage 2	188	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	271.94	1.62	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	739	-	174	-	-
HCM Lane V/C Ratio	0.262	-	1.427	-	-
HCM Ctrl Dly (s/v)	11.6	-	271.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1	-	15.3	-	-

Intersection	
Int Delay, s/veh	17.9

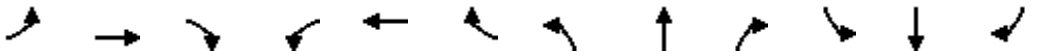
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	386	85	120	242	111	130	0	127	0	0	81
Future Vol, veh/h	41	386	85	120	242	111	130	0	127	0	0	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	0	-	50	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	91	91	91	96	96	96	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	2	2	2
Mvmt Flow	48	449	99	132	266	122	135	0	132	0	0	90

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	388	0	0	548	0	0	1123	-	274	-	-	266
Stage 1	-	-	-	-	-	-	594	-	-	-	-	-
Stage 2	-	-	-	-	-	-	530	-	-	-	-	-
Critical Hdwy	4.115	-	-	4.115	-	-	7.315	-	6.915	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.515	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.115	-	-	-	-	-
Follow-up Hdwy	2.2095	-	-	2.2095	-	-	3.5095	-	3.3095	-	-	3.319
Pot Cap-1 Maneuver	1175	-	-	1026	-	-	172	0	727	0	0	772
Stage 1	-	-	-	-	-	-	461	0	-	0	0	-
Stage 2	-	-	-	-	-	-	534	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1175	-	-	1026	-	-	~ 127	-	727	-	-	772
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 127	-	-	-	-	-
Stage 1	-	-	-	-	-	-	443	-	-	-	-	-
Stage 2	-	-	-	-	-	-	411	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.66	2.29	88.99	10.28
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	127	727	1175	-	-	1026	-	-	772
HCM Lane V/C Ratio	1.064	0.182	0.041	-	-	0.129	-	-	0.117
HCM Ctrl Dly (s/v)	165.1	11	8.2	-	-	9	-	-	10.3
HCM Lane LOS	F	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	7.7	0.7	0.1	-	-	0.4	-	-	0.4

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

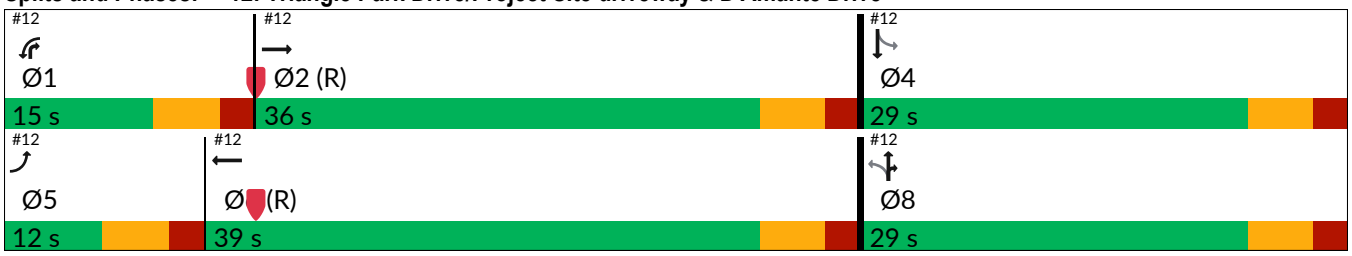


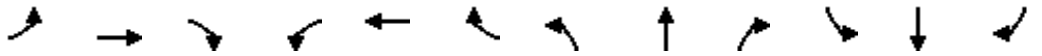
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Future Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.960				0.850		0.869	
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1787	3300	0	1728	1806	0	0	1804	1599	1770	1619	0
Flt Permitted	0.950			0.950				0.612		0.609		
Satd. Flow (perm)	1787	3300	0	1728	1806	0	0	1151	1599	1134	1619	0
Satd. Flow (RTOR)		99			29				81		130	
Adj. Flow (vph)	142	309	132	55	344	125	129	23	81	199	19	130
Lane Group Flow (vph)	142	441	0	55	469	0	0	152	81	199	149	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0		11.0	11.0		28.0	28.0	
Total Split (s)	12.0	36.0		15.0	39.0		29.0	29.0		29.0	29.0	
Total Split (%)	15.0%	45.0%		18.8%	48.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	6.0	30.0		9.0	33.0		23.0	23.0		23.0	23.0	
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)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.54	0.26		0.26	0.56			0.53	0.11	0.71	0.30	
Control Delay (s/veh)	48.4	7.9		34.8	19.1			32.0	3.2	40.7	7.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay (s/veh)	48.4	7.9		34.8	19.1			32.0	3.2	40.7	7.2	
Queue Length 50th (ft)	65	24		26	170			65	0	91	7	
Queue Length 95th (ft)	#170	32		56	241			91	13	154	47	
Internal Link Dist (ft)		981			380			958			344	
Turn Bay Length (ft)	50			250					170			
Base Capacity (vph)	261	1729		237	864			359	732	354	595	
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	0.54	0.26		0.23	0.54			0.42	0.11	0.56	0.25	

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 80
Offset: 15 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive

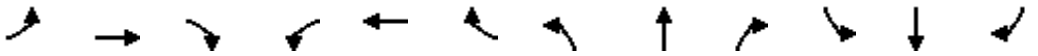




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Future Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3300		1728	1806			1805	1599	1770	1619	
Flt Permitted	0.95	1.00		0.95	1.00			0.61	1.00	0.61	1.00	
Satd. Flow (perm)	1787	3300		1728	1806			1150	1599	1135	1619	
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.75	0.75	0.75	0.90	0.90	0.90
Adj. Flow (vph)	142	309	132	55	344	125	129	23	81	199	19	130
RTOR Reduction (vph)	0	50	0	0	16	0	0	0	48	0	98	0
Lane Group Flow (vph)	142	391	0	55	453	0	0	152	33	199	51	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Actuated Green, G (s)	9.7	37.6		6.5	34.4			17.9	30.4	17.9	17.9	
Effective Green, g (s)	11.7	39.6		8.5	36.4			19.9	32.4	19.9	19.9	
Actuated g/C Ratio	0.15	0.50		0.11	0.45			0.25	0.41	0.25	0.25	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	261	1633		183	821			286	647	282	402	
v/s Ratio Prot	c0.08	c0.12		0.03	c0.25				0.02		0.03	
v/s Ratio Perm								0.13		c0.18		
v/c Ratio	0.54	0.24		0.30	0.55			0.53	0.05	0.71	0.13	
Uniform Delay, d1	31.7	11.6		33.0	15.9			26.0	14.5	27.4	23.3	
Progression Factor	1.21	0.72		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	0.3		0.9	2.7			1.9	0.0	7.8	0.1	
Delay (s)	40.7	8.7		33.9	18.5			27.9	14.5	35.2	23.5	
Level of Service	D	A		C	B			C	B	D	C	
Approach Delay (s/veh)		16.5			20.1			23.2			30.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



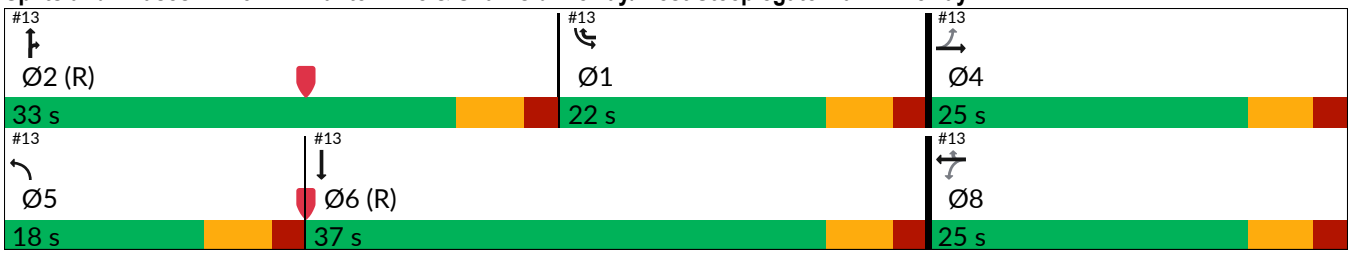
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Future Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.954				0.850			0.850		0.985	
Flt Protected		0.966			0.950		0.950			0.950		
Satd. Flow (prot)	0	3327	0	0	1829	1636	1787	3455	1546	3351	3403	0
Flt Permitted		0.694			0.660		0.950			0.950		
Satd. Flow (perm)	0	2390	0	0	1270	1636	1787	3455	1546	3351	3403	0
Satd. Flow (RTOR)		205				123			123		18	
Adj. Flow (vph)	101	0	44	140	0	123	46	465	88	165	494	56
Lane Group Flow (vph)	0	145	0	0	140	123	46	465	88	165	550	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	25.0	25.0		25.0	25.0	22.0	18.0	33.0	33.0	22.0	37.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%	27.5%	22.5%	41.3%	41.3%	27.5%	46.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	16.0	12.0	27.0	27.0	16.0	31.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.23			0.55	0.16	0.22	0.28	0.11	0.29	0.27	
Control Delay (s/veh)		2.1			36.2	2.8	29.2	9.6	1.6	30.0	10.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		2.1			36.2	2.8	29.2	9.6	1.6	30.0	10.5	
Queue Length 50th (ft)		0			64	0	18	55	4	37	73	
Queue Length 95th (ft)		8			111	24	m40	111	m14	60	123	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130		130	150		
Base Capacity (vph)		784			336	754	312	1651	803	753	2017	
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		0.18			0.42	0.16	0.15	0.28	0.11	0.22	0.27	

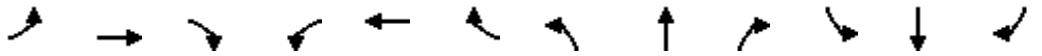
Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Future Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3330			1829	1636	1787	3455	1546	3351	3402	
Flt Permitted		0.69			0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2391			1270	1636	1787	3455	1546	3351	3402	
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.94	0.94	0.94	0.85	0.85	0.85
Adj. Flow (vph)	101	0	44	140	0	123	46	465	88	165	494	56
RTOR Reduction (vph)	0	116	0	0	0	73	0	0	49	0	8	0
Lane Group Flow (vph)	0	29	0	0	140	50	46	465	39	165	542	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		14.0			14.0	28.3	5.2	33.7	33.7	14.3	42.8	
Effective Green, g (s)		16.0			16.0	32.3	7.2	35.7	35.7	16.3	44.8	
Actuated g/C Ratio		0.20			0.20	0.40	0.09	0.45	0.45	0.20	0.56	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		478			254	742	160	1541	689	682	1905	
v/s Ratio Prot						0.01	0.03	c0.13	0.03	0.05	c0.16	
v/s Ratio Perm		0.01			c0.11	0.02						
v/c Ratio		0.06			0.55	0.07	0.29	0.30	0.06	0.24	0.28	
Uniform Delay, d1		25.9			28.8	14.6	34.0	14.2	12.6	26.7	9.2	
Progression Factor		1.00			1.00	1.00	0.86	0.66	0.85	1.00	1.00	
Incremental Delay, d2		0.1			2.6	0.0	0.9	0.5	0.1	0.2	0.4	
Delay (s)		26.0			31.3	14.7	30.3	9.9	10.8	26.9	9.6	
Level of Service		C			C	B	C	A	B	C	A	
Approach Delay (s/veh)		26.0			23.5			11.6			13.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

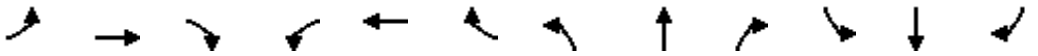
Intersection	
Int Delay, s/veh	0.5

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	61	1098	129	19	1127
Future Vol, veh/h	0	61	1098	129	19	1127
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	85	85	85	85	93	93
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	72	1292	152	20	1212

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2014	722	0	0	1444	0
Stage 1	1368	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	52	374	-	-	471	-
Stage 1	205	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	50	374	-	-	471	-
Mov Cap-2 Maneuver	50	-	-	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	16.9	0	0.22
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	374	471	-
HCM Lane V/C Ratio	-	-	0.192	0.043	-
HCM Ctrl Dly (s/v)	-	-	16.9	13	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

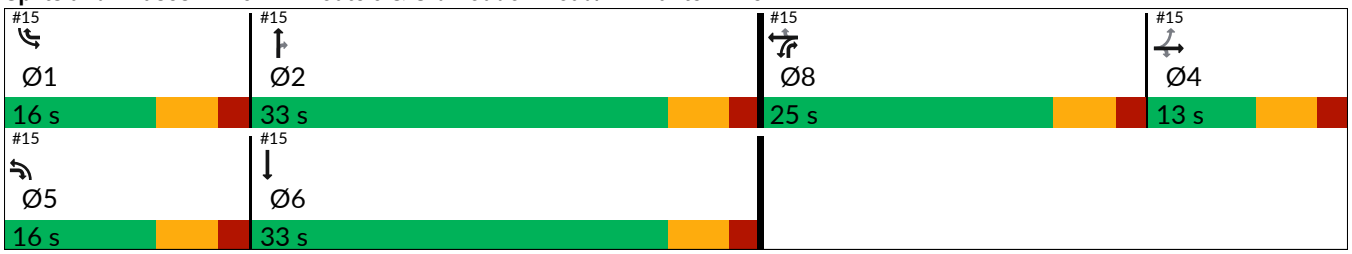


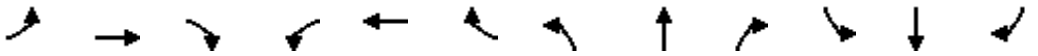
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Future Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.988		0.950	0.965		0.950			0.950		
Satd. Flow (prot)	0	1815	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Flt Permitted		0.817		0.950	0.965		0.950			0.950		
Satd. Flow (perm)	0	1501	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Satd. Flow (RTOR)			113			137			507		3	
Adj. Flow (vph)	13	40	90	518	83	137	111	664	526	108	660	14
Lane Group Flow (vph)	0	53	90	300	301	137	111	664	526	108	674	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	16.0	25.0	25.0	16.0	16.0	33.0	25.0	16.0	33.0	
Total Split (%)	14.9%	14.9%	18.4%	28.7%	28.7%	18.4%	18.4%	37.9%	28.7%	18.4%	37.9%	
Maximum Green (s)	7.0	7.0	10.0	19.0	19.0	10.0	10.0	27.0	19.0	10.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.29	0.19	0.66	0.63	0.19	0.41	0.60	0.43	0.23	0.55	
Control Delay (s/veh)		39.0	4.3	35.4	33.7	2.7	37.6	24.4	2.0	33.5	23.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		39.0	4.3	35.4	33.7	2.7	37.6	24.4	2.0	33.5	23.6	
Queue Length 50th (ft)		26	0	150	149	0	54	151	3	26	160	
Queue Length 95th (ft)		62	22	#271	#251	21	108	210	38	51	216	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		195	498	499	525	788	310	1453	1251	603	1450	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.27	0.18	0.60	0.57	0.17	0.36	0.46	0.42	0.18	0.46	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 72.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

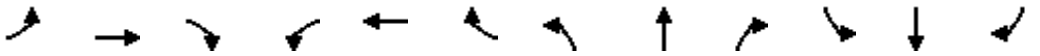




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Future Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1814	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Flt Permitted		0.82	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1500	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	13	40	90	518	83	137	111	664	526	108	660	14
RTOR Reduction (vph)	0	0	73	0	0	83	0	0	209	0	2	0
Lane Group Flow (vph)	0	53	17	300	301	54	111	664	317	108	672	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		3.6	10.7	18.0	18.0	25.9	7.1	23.0	41.0	7.9	23.8	
Effective Green, g (s)		5.6	14.7	20.0	20.0	29.9	9.1	25.0	45.0	9.9	25.8	
Actuated g/C Ratio		0.07	0.19	0.26	0.26	0.39	0.12	0.33	0.59	0.13	0.34	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		109	381	429	450	583	212	1129	1024	448	1161	
v/s Ratio Prot			0.01	c0.18	0.17	0.01	c0.06	0.19	0.08	0.03	c0.20	
v/s Ratio Perm		c0.04	0.01			0.02			0.12			
v/c Ratio		0.49	0.05	0.70	0.67	0.09	0.52	0.59	0.31	0.24	0.58	
Uniform Delay, d1		34.1	25.2	25.5	25.3	14.7	31.7	21.5	7.9	29.9	20.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.4	0.0	4.9	3.8	0.1	2.3	0.8	0.2	0.3	0.7	
Delay (s)		37.5	25.2	30.5	29.0	14.8	34.0	22.2	8.1	30.2	21.6	
Level of Service		D	C	C	C	B	C	C	A	C	C	
Approach Delay (s/veh)		29.8			27.0			17.5			22.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

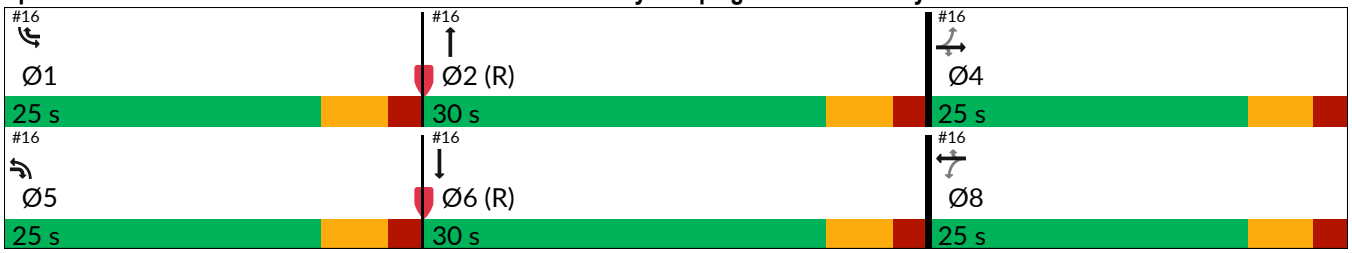


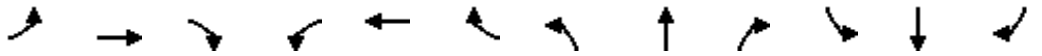
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Future Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.975			0.984	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3369	0	1787	3400	0
Flt Permitted		0.611			0.694		0.950			0.950		
Satd. Flow (perm)	0	1161	1615	0	1336	1636	1847	3369	0	1787	3400	0
Satd. Flow (RTOR)			78			106		31			17	
Adj. Flow (vph)	97	0	84	137	0	291	80	572	116	322	643	78
Lane Group Flow (vph)	0	97	84	0	137	291	80	688	0	322	721	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	30.0		25.0	30.0	
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	37.5%		31.3%	37.5%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	19.0	24.0		19.0	24.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.44	0.13		0.54	0.34	0.32	0.49		0.72	0.38	
Control Delay (s/veh)		33.5	4.1		36.0	7.6	33.9	19.8		34.2	16.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		33.5	4.1		36.0	7.6	33.9	19.8		34.2	16.4	
Queue Length 50th (ft)		43	2		63	49	37	129		165	112	
Queue Length 95th (ft)		81	23		109	81	74	202		223	216	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		304	853		350	891	484	1391		485	1884	
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		0.32	0.10		0.39	0.33	0.17	0.49		0.66	0.38	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Future Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615		1829	1636	1847	3368		1787	3399	
Flt Permitted		0.61	1.00		0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1161	1615		1336	1636	1847	3368		1787	3399	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.83	0.83	0.83
Adj. Flow (vph)	97	0	84	137	0	291	80	572	116	322	643	78
RTOR Reduction (vph)	0	0	54	0	0	59	0	18	0	0	8	0
Lane Group Flow (vph)	0	97	30	0	137	232	80	670	0	322	713	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		13.3	21.0		13.3	31.3	7.7	30.7		18.0	41.0	
Effective Green, g (s)		15.3	25.0		15.3	35.3	9.7	32.7		20.0	43.0	
Actuated g/C Ratio		0.19	0.31		0.19	0.44	0.12	0.41		0.25	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		222	585		255	803	223	1376		446	1826	
v/s Ratio Prot			0.01			0.07	0.04	c0.20		c0.18	0.21	
v/s Ratio Perm		0.08	0.01		c0.10	0.07						
v/c Ratio		0.44	0.05		0.54	0.29	0.36	0.49		0.72	0.39	
Uniform Delay, d1		28.5	19.2		29.2	14.3	32.3	17.5		27.5	10.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.91	1.30	
Incremental Delay, d2		1.4	0.0		2.2	0.2	1.0	1.2		5.4	0.6	
Delay (s)		29.9	19.3		31.3	14.5	33.3	18.7		30.4	14.6	
Level of Service		C	B		C	B	C	B		C	B	
Approach Delay (s/veh)		25.0			19.9			20.2			19.5	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

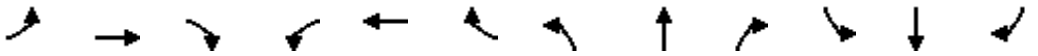
Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	33	858	29	37	835
Future Vol, veh/h	32	33	858	29	37	835
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	97	97	88	88
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	36	37	885	30	42	949

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1458	457	0	0	914	0
Stage 1	899	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.12	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.21	-
Pot Cap-1 Maneuver	120	550	-	-	748	-
Stage 1	357	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	113	550	-	-	748	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	35.1	0	0.43
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	190	748	-
HCM Lane V/C Ratio	-	-	0.38	0.056	-
HCM Ctrl Dly (s/v)	-	-	35.1	10.1	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	1.7	0.2	-



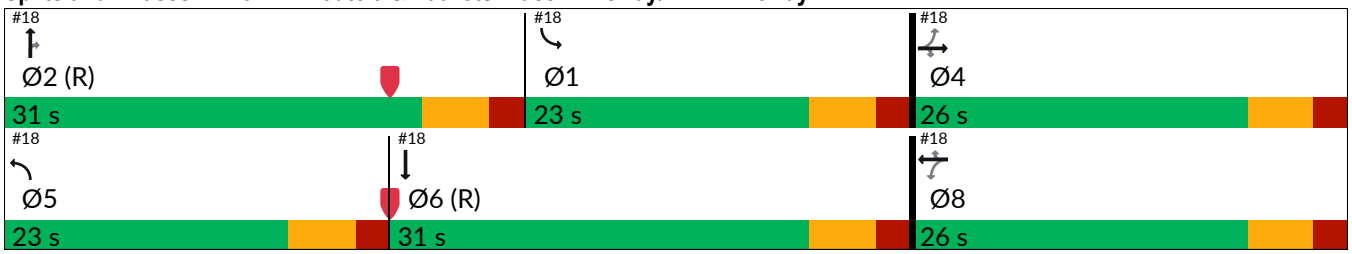
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Future Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3427	0
Flt Permitted		0.638			0.688		0.950			0.950		
Satd. Flow (perm)	0	1200	1599	0	1294	1599	1805	3490	1561	1787	3427	0
Satd. Flow (RTOR)			205			205			123		7	
Adj. Flow (vph)	62	8	93	109	7	31	74	788	47	19	836	44
Lane Group Flow (vph)	0	70	93	0	116	31	74	788	47	19	880	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	23.0	31.0	31.0	23.0	31.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	28.8%	38.8%	38.8%	28.8%	38.8%	
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	25.0	25.0	17.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.21		0.50	0.07	0.31	0.36	0.05	0.06	0.42	
Control Delay (s/veh)		31.3	1.0		36.1	0.3	33.3	17.6	4.3	42.1	21.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.3	1.0		36.1	0.3	33.3	17.6	4.3	42.1	21.1	
Queue Length 50th (ft)		31	0		53	0	38	70	0	10	142	
Queue Length 95th (ft)		59	0		68	0	m78	271	m10	m0	301	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		330	588		355	588	428	2212	1034	450	2088	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.21	0.16		0.33	0.05	0.17	0.36	0.05	0.04	0.42	

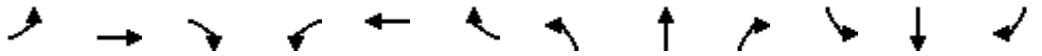
Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

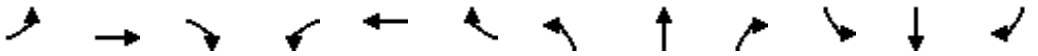




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Future Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3429	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1201	1599		1295	1599	1805	3490	1561	1787	3429	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	62	8	93	109	7	31	74	788	47	19	836	44
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	21	0	3	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	788	26	19	877	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.0	11.0		11.0	11.0	7.5	43.0	43.0	8.0	43.5	
Effective Green, g (s)		13.0	13.0		13.0	13.0	9.5	45.0	45.0	10.0	45.5	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.12	0.56	0.56	0.13	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	259		210	259	214	1963	878	223	1950	
v/s Ratio Prot							0.04	c0.23		0.01	c0.26	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.36	0.06		0.55	0.02	0.35	0.40	0.03	0.09	0.45	
Uniform Delay, d1		29.8	28.3		30.8	28.1	32.4	9.9	7.8	31.0	10.0	
Progression Factor		1.00	1.00		1.00	1.00	0.99	1.35	1.00	1.71	1.71	
Incremental Delay, d2		1.1	0.1		3.1	0.0	0.9	0.6	0.1	0.2	0.7	
Delay (s)		30.9	28.4		33.9	28.2	32.9	13.9	7.8	53.2	17.8	
Level of Service		C	C		C	C	C	B	A	D	B	
Approach Delay (s/veh)		29.5			32.7			15.2			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Future Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.990	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3455	0
Flt Permitted		0.655			0.655		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1191	1546	1787	3455	1599	1685	3455	0
Satd. Flow (RTOR)			42			42			123		11	
Adj. Flow (vph)	100	20	42	89	26	213	73	875	25	145	788	58
Lane Group Flow (vph)	0	120	42	0	115	213	73	875	25	145	846	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	21.0	26.0	26.0	21.0	21.0	33.0	33.0	21.0	33.0	
Total Split (%)	32.5%	32.5%	26.3%	32.5%	32.5%	26.3%	26.3%	41.3%	41.3%	26.3%	41.3%	
Maximum Green (s)	20.0	20.0	15.0	20.0	20.0	15.0	15.0	27.0	27.0	15.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.07		0.53	0.35	0.31	0.48	0.03	0.49	0.40	
Control Delay (s/veh)		37.5	4.6		38.0	13.4	40.3	13.7	1.2	34.5	12.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		37.5	4.6		38.0	13.4	40.3	13.7	1.2	34.5	12.4	
Queue Length 50th (ft)		55	0		53	56	31	126	0	66	125	
Queue Length 95th (ft)		93	15		89	73	54	277	5	104	196	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		342	689		327	667	379	1810	896	365	2102	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.35	0.06		0.35	0.32	0.19	0.48	0.03	0.40	0.40	

Intersection Summary

Cycle Length: 80

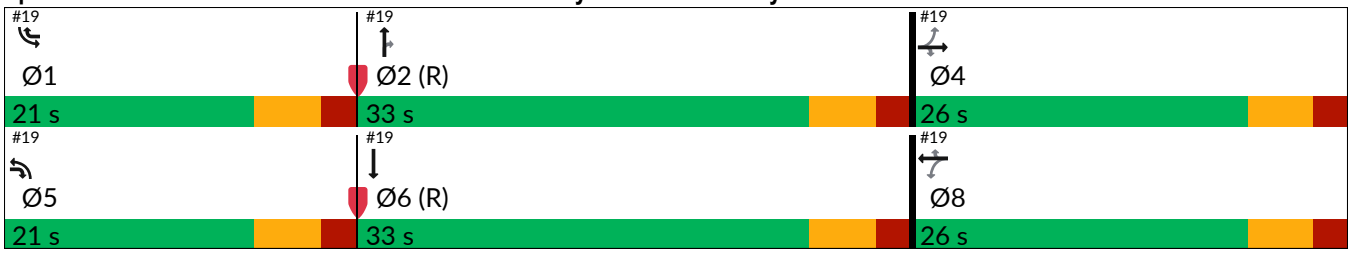
Actuated Cycle Length: 80

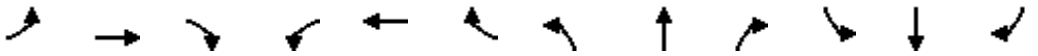
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Future Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3454	
Flt Permitted		0.65	1.00		0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1192	1546	1787	3455	1599	1685	3454	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	100	20	42	89	26	213	72	875	25	145	788	58
RTOR Reduction (vph)	0	0	30	0	0	28	0	0	12	0	5	0
Lane Group Flow (vph)	0	120	12	0	115	185	73	875	13	145	841	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.1	18.6		11.1	23.3	7.5	38.7	38.7	12.2	43.4	
Effective Green, g (s)		13.1	22.6		13.1	27.3	9.5	40.7	40.7	14.2	45.4	
Actuated g/C Ratio		0.16	0.28		0.16	0.34	0.12	0.51	0.51	0.18	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	536		195	604	212	1757	813	299	1960	
v/s Ratio Prot			0.00			0.05	0.04	c0.25		c0.09	0.24	
v/s Ratio Perm		0.10	0.00		c0.10	0.07			0.01			
v/c Ratio		0.59	0.02		0.59	0.31	0.34	0.50	0.02	0.48	0.43	
Uniform Delay, d1		31.0	20.7		31.0	19.4	32.4	12.9	9.7	29.6	9.9	
Progression Factor		1.00	1.00		1.00	1.00	1.21	0.85	1.00	1.00	1.00	
Incremental Delay, d2		4.6	0.0		4.5	0.3	0.9	1.0	0.0	1.2	0.7	
Delay (s)		35.5	20.7		35.5	19.7	40.2	11.9	9.8	30.8	10.6	
Level of Service		D	C		D	B	D	B	A	C	B	
Approach Delay (s/veh)		31.7			25.2			14.0			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	138	0	13	0	0	1	10	922	1	3	1	802
Future Volume (vph)	138	0	13	0	0	1	10	922	1	3	1	802
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.865							0.977
Flt Protected		0.950					0.950				0.950	
Satd. Flow (prot)	0	2046	1669	0	1863	0	1668	3455	0	0	1787	3376
Flt Permitted		0.755					0.950				0.950	
Satd. Flow (perm)	0	1626	1669	0	1863	0	1668	3455	0	0	1787	3376
Satd. Flow (RTOR)			164		261							36
Adj. Flow (vph)	153	0	14	0	0	4	11	981	1	3	1	853
Lane Group Flow (vph)	0	153	14	0	4	0	11	982	0	0	4	1009
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		11.0	22.0		11.0	11.0	22.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		18.3%	36.7%		18.3%	18.3%	36.7%
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0		5.0	16.0		5.0	5.0	16.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio		0.34	0.02		0.01		0.04	0.49			0.01	0.52
Control Delay (s/veh)		14.7	0.1		0.0		17.1	10.8			17.0	10.9
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)		14.7	0.1		0.0		17.1	10.8			17.0	10.9
Queue Length 50th (ft)		24	0		0		2	63			1	63
Queue Length 95th (ft)		76	0		0		14	#244			8	#253
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)		935	1029		1182		292	1989			312	1959
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.16	0.01		0.00		0.04	0.49			0.01	0.52

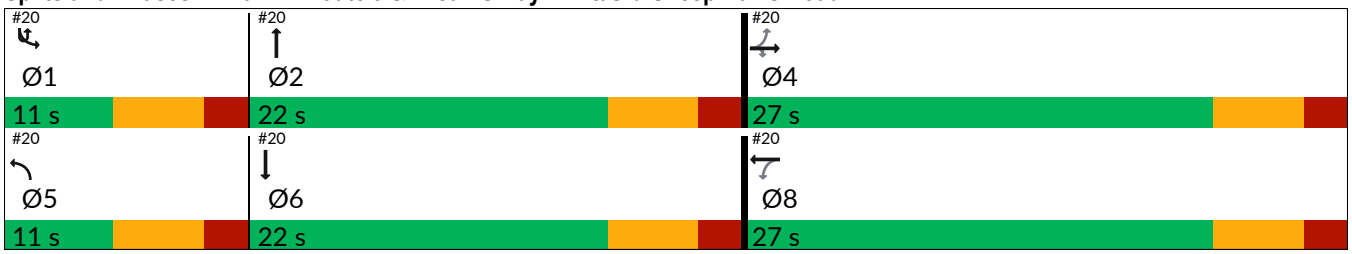
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 40.8
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	156
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



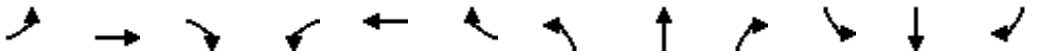
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	138	0	13	0	0	1	10	922	1	3	1	802
Future Volume (vph)	138	0	13	0	0	1	10	922	1	3	1	802
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	16	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frt		1.00	0.85		0.87		1.00	1.00			1.00	0.98
Flt Protected		0.95	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)		2046	1669		1863		1668	3455			1787	3375
Flt Permitted		0.76	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1626	1669		1863		1668	3455			1787	3375
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.90	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	153	0	14	0	0	4	11	981	1	3	1	853
RTOR Reduction (vph)	0	0	11	0	3	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	153	3	0	1	0	11	982	0	0	4	990
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)		7.7	7.7		7.7		0.8	20.5			0.8	20.5
Effective Green, g (s)		9.7	9.7		9.7		2.8	22.5			2.8	22.5
Actuated g/C Ratio		0.21	0.21		0.21		0.06	0.48			0.06	0.48
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		335	344		384		99	1653			106	1615
v/s Ratio Prot					0.00		c0.01	0.28			0.00	c0.29
v/s Ratio Perm		c0.09	0.00									
v/c Ratio		0.46	0.01		0.00		0.11	0.59			0.04	0.61
Uniform Delay, d1		16.3	14.8		14.8		20.9	8.9			20.8	9.0
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		1.0	0.0		0.0		0.5	0.6			0.1	0.7
Delay (s)		17.3	14.8		14.8		21.4	9.5			21.0	9.7
Level of Service		B	B		B		C	A			C	A
Approach Delay (s/veh)		17.1			14.8			9.6				9.8
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	156
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

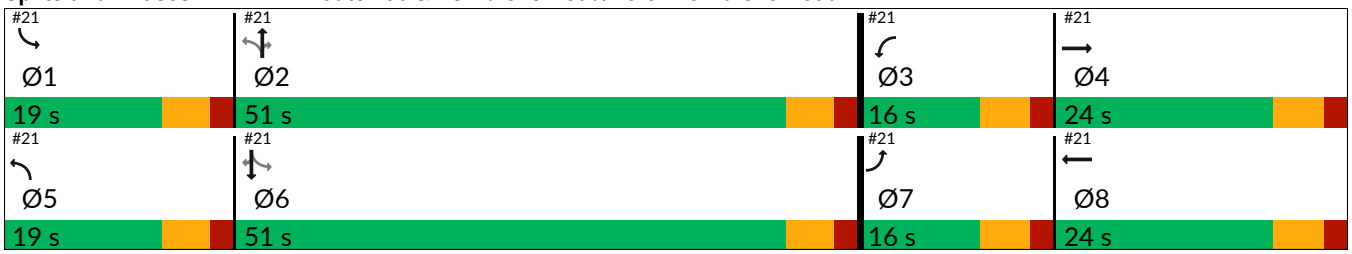


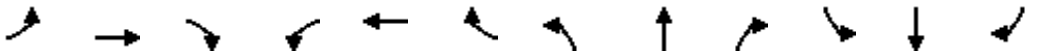
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Future Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915			0.912				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1721	0	1736	1500	0	1811	1845	1568	1829	1863	1531
Flt Permitted	0.950			0.950			0.084			0.084		
Satd. Flow (perm)	1787	1721	0	1736	1500	0	160	1845	1568	162	1863	1531
Satd. Flow (RTOR)		52			57				149			149
Adj. Flow (vph)	271	84	110	36	53	76	77	1077	60	90	834	160
Lane Group Flow (vph)	271	194	0	36	129	0	77	1077	60	90	834	160
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	1.20	0.46		0.21	0.51		0.31	1.18	0.07	0.34	0.90	0.19
Control Delay (s/veh)	163.3	30.6		45.3	30.0		12.1	117.0	0.2	13.1	38.2	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	163.3	30.6		45.3	30.0		12.1	117.0	0.2	13.1	38.2	4.1
Queue Length 50th (ft)	~210	83		22	43		18	~838	0	21	469	3
Queue Length 95th (ft)	#363	143		45	72		43	#1245	0	51	#849	42
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	226	440		220	361		358	916	853	362	931	839
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.20	0.44		0.16	0.36		0.22	1.18	0.07	0.25	0.90	0.19

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 95.8
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

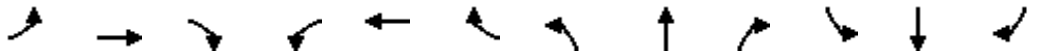




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Future Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1721		1736	1499		1811	1845	1568	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1787	1721		1736	1499		161	1845	1568	161	1863	1531
Peak-hour factor, PHF	0.82	0.82	0.82	0.72	0.72	0.72	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	271	84	110	36	53	76	77	1077	60	90	834	160
RTOR Reduction (vph)	0	41	0	0	48	0	0	0	31	0	0	78
Lane Group Flow (vph)	271	153	0	36	81	0	77	1077	29	90	834	82
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	19.1		4.9	13.9		51.4	45.5	45.5	52.0	45.8	45.8
Effective Green, g (s)	12.1	21.1		6.9	15.9		55.4	47.5	47.5	56.0	47.8	47.8
Actuated g/C Ratio	0.12	0.21		0.07	0.16		0.56	0.48	0.48	0.56	0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	364		120	239		220	879	747	227	893	734
v/s Ratio Prot	c0.15	c0.09		0.02	0.05		0.03	c0.58		c0.03	0.45	
v/s Ratio Perm							0.17		0.02	0.19		0.05
v/c Ratio	1.25	0.42		0.30	0.34		0.35	1.23	0.04	0.40	0.93	0.11
Uniform Delay, d1	43.8	34.0		44.1	37.2		19.1	26.1	13.9	20.2	24.5	14.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	146.7	0.8		1.4	0.8		1.0	111.5	0.0	1.1	16.3	0.1
Delay (s)	190.5	34.8		45.5	38.1		20.1	137.6	13.9	21.3	40.8	14.3
Level of Service	F	C		D	D		C	F	B	C	D	B
Approach Delay (s/veh)		125.5			39.7			124.0			35.3	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	86.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Future Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.862			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1568	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.693			0.674			0.144			0.340		
Satd. Flow (perm)	1304	1568	0	1281	1981	0	262	1818	1599	640	1818	1546
Satd. Flow (RTOR)		120			53				66			320
Adj. Flow (vph)	450	10	120	15	46	53	57	711	1	9	649	320
Lane Group Flow (vph)	450	130	0	15	99	0	57	711	1	9	649	320
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.09	0.22		0.04	0.15		0.16	0.72	0.00	0.03	0.86	0.39
Control Delay (s/veh)	96.2	5.9		16.5	9.9		6.8	14.6	0.0	13.0	32.1	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	96.2	5.9		16.5	9.9		6.8	14.6	0.0	13.0	32.1	3.5
Queue Length 50th (ft)	~197	3		4	12		8	164	0	2	~234	0
Queue Length 95th (ft)	#330	30		16	42		21	272	0	10	#437	44
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	414	579		407	665		452	1187	1067	266	756	829
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.22		0.04	0.15		0.13	0.60	0.00	0.03	0.86	0.39

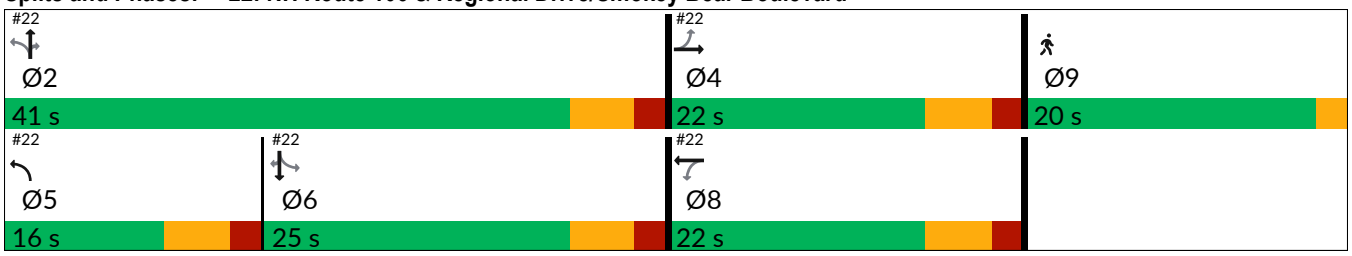
Intersection Summary
Cycle Length: 83

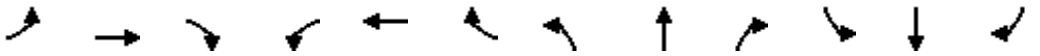
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 57.3
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

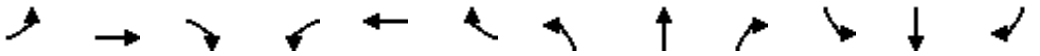




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Future Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.69	1.00		0.67	1.00		0.14	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	1304	1567		1280	1980		262	1818	1599	640	1818	1546
Peak-hour factor, PHF	0.82	0.82	0.82	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	450	10	120	15	46	53	57	711	1	9	649	320
RTOR Reduction (vph)	0	83	0	0	37	0	0	0	0	0	0	193
Lane Group Flow (vph)	450	47	0	15	62	0	57	711	1	9	649	127
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		31.6	31.6	31.6	21.8	21.8	21.8
Effective Green, g (s)	18.2	18.2		18.2	18.2		33.6	33.6	33.6	23.8	23.8	23.8
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.56	0.56	0.56	0.40	0.40	0.40
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	396	476		389	602		289	1021	898	254	723	615
v/s Ratio Prot		0.03			0.03		0.02	c0.39			c0.36	
v/s Ratio Perm	c0.35			0.01			0.09		0.00	0.01		0.08
v/c Ratio	1.14	0.10		0.04	0.10		0.20	0.70	0.00	0.04	0.90	0.21
Uniform Delay, d1	20.8	14.9		14.6	14.9		9.6	9.4	5.7	11.0	16.9	11.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	87.8	0.1		0.0	0.1		0.3	2.1	0.0	0.1	13.8	0.2
Delay (s)	108.6	15.0		14.7	15.0		9.9	11.5	5.7	11.0	30.7	12.0
Level of Service	F	B		B	B		A	B	A	B	C	B
Approach Delay (s/veh)		87.6			15.0			11.4			24.4	
Approach LOS		F			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

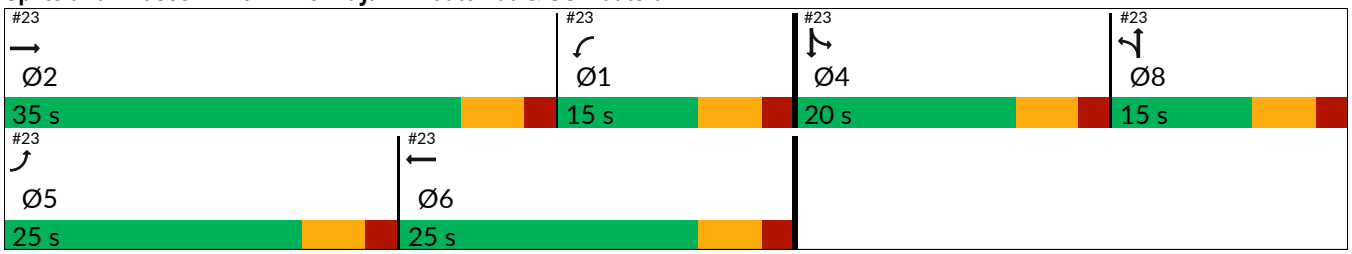


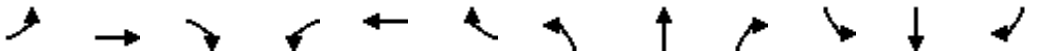
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	683	7	1	358	332	49	20	4	467	2	204
Future Volume (vph)	176	683	7	1	358	332	49	20	4	467	2	204
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Satd. Flow (RTOR)			347			361			347			347
Adj. Flow (vph)	187	727	7	1	389	361	69	28	6	513	2	224
Lane Group Flow (vph)	187	727	7	1	389	361	69	28	6	513	2	224
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		20.0	20.0	
Total Split (%)	29.4%	41.2%		17.6%	29.4%		17.6%	17.6%		23.5%	23.5%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		14.0	14.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.50	0.45	0.00	0.00	0.49	0.21	0.16	0.12	0.00	0.68	0.00	0.14
Control Delay (s/veh)	30.8	15.3	0.0	32.0	27.1	0.3	31.3	32.0	0.0	32.8	26.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.8	15.3	0.0	32.0	27.1	0.3	31.3	32.0	0.0	32.8	26.5	0.2
Queue Length 50th (ft)	74	104	0	0	80	0	14	11	0	108	1	0
Queue Length 95th (ft)	147	219	0	5	136	0	28	30	0	#216	7	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150	200		200	250		150	250		200
Base Capacity (vph)	550	1726	1759	288	1101	1759	548	297	1725	806	437	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.42	0.00	0.00	0.35	0.21	0.13	0.09	0.00	0.64	0.00	0.14

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 68.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

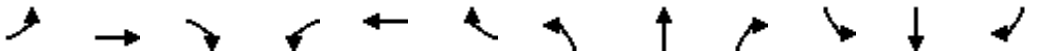




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	683	7	1	358	332	49	20	4	467	2	204
Future Volume (vph)	176	683	7	1	358	332	49	20	4	467	2	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.71	0.71	0.71	0.91	0.91	0.91
Adj. Flow (vph)	187	727	7	1	389	361	69	28	6	513	2	224
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	187	727	7	1	389	361	69	28	6	513	2	224
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.8	30.5	75.0	1.5	19.2	75.0	5.5	5.5	75.0	13.5	13.5	75.0
Effective Green, g (s)	14.8	32.5	75.0	3.5	21.2	75.0	7.5	7.5	75.0	15.5	15.5	75.0
Actuated g/C Ratio	0.20	0.43	1.00	0.05	0.28	1.00	0.10	0.10	1.00	0.21	0.21	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	340	1497	1759	80	976	1759	328	178	1725	685	372	1583
v/s Ratio Prot	c0.11	c0.21		0.00	c0.11		0.02	0.02		c0.15	0.00	
v/s Ratio Perm			0.00			c0.21			0.00			0.14
v/c Ratio	0.55	0.49	0.00	0.01	0.40	0.21	0.21	0.16	0.00	0.75	0.01	0.14
Uniform Delay, d1	27.1	15.3	0.0	34.1	21.7	0.0	31.0	30.9	0.0	27.9	23.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.0	0.1	0.3	0.3	0.3	0.4	0.0	4.5	0.0	0.2
Delay (s)	29.0	15.5	0.0	34.2	22.0	0.3	31.3	31.3	0.0	32.4	23.6	0.2
Level of Service	C	B	A	C	C	A	C	C	A	C	C	A
Approach Delay (s/veh)		18.1			11.6			29.5			22.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	1017	1	2	944	39	1	1	2	83	1	825
Future Volume (vph)	405	1017	1	2	944	39	1	1	2	83	1	825
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	1787	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.875			0.726	
Satd. Flow (perm)	1787	3336	0	1668	3316	0	0	1662	1830	0	1320	1546
Satd. Flow (RTOR)					3				150			636
Adj. Flow (vph)	435	1094	1	2	1111	46	2	2	4	92	1	917
Lane Group Flow (vph)	435	1095	0	2	1157	0	0	4	4	0	93	917
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.75	0.43		0.02	0.83			0.02	0.01		0.55	1.22
Control Delay (s/veh)	37.4	5.0		42.0	31.4			37.5	0.0		52.6	123.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	37.4	5.0		42.0	31.4			37.5	0.0		52.6	123.5
Queue Length 50th (ft)	229	84		1	326			2	0		54	~326
Queue Length 95th (ft)	343	192		8	394			7	0		#116	#574
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	652	2543		125	1390			214	366		170	753
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	0.67	0.43		0.02	0.83			0.02	0.01		0.55	1.22

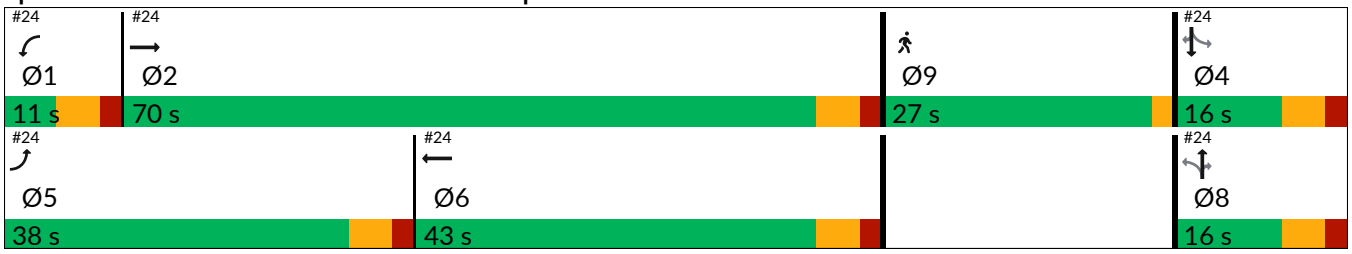
Intersection Summary
Cycle Length: 124

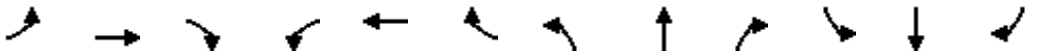
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 93.3
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

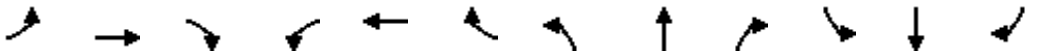




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	1017	1	2	944	39	1	1	2	83	1	825
Future Volume (vph)	405	1017	1	2	944	39	1	1	2	83	1	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	1787	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.87	1.00		0.73	1.00
Satd. Flow (perm)	1787	3336		1668	3316			1662	1830		1321	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.85	0.85	0.85	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	435	1094	1	2	1111	46	2	2	4	92	1	917
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	4	0	0	558
Lane Group Flow (vph)	435	1095	0	2	1155	0	0	4	0	0	93	359
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	28.2	69.1		1.0	41.9			10.0	10.0		10.0	10.0
Effective Green, g (s)	30.2	71.1		3.0	43.9			12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.31	0.72		0.03	0.45			0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	550	2417		51	1483			203	223		161	189
v/s Ratio Prot	c0.24	0.33		0.00	c0.35							
v/s Ratio Perm								0.00	0.00		0.07	c0.23
v/c Ratio	0.79	0.45		0.04	0.78			0.02	0.00		0.58	1.90
Uniform Delay, d1	31.1	5.5		46.2	23.0			37.9	37.8		40.7	43.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.6	0.1		0.3	2.7			0.0	0.0		4.9	423.5
Delay (s)	38.7	5.7		46.5	25.6			37.9	37.8		45.6	466.5
Level of Service	D	A		D	C			D	D		D	F
Approach Delay (s/veh)		15.1			25.7			37.9			427.8	
Approach LOS		B			C			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	130.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	98.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1342	7	4	1152	47	4	0	20	54	0	30
Future Volume (vph)	10	1342	7	4	1152	47	4	0	20	54	0	30
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4959	0	1668	3434	0	1805	1615	0	1760	1524	0
Flt Permitted	0.950			0.950			0.734			0.737		
Satd. Flow (perm)	1728	4959	0	1668	3434	0	1395	1615	0	1365	1524	0
Satd. Flow (RTOR)		1			5			554			164	
Adj. Flow (vph)	11	1443	8	4	1252	51	6	0	31	64	0	36
Lane Group Flow (vph)	11	1451	0	4	1303	0	6	31	0	64	36	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			16.0	16.0		16.0	16.0	
Total Split (s)	12.0	53.0		32.0			33.0	33.0		33.0	33.0	
Total Split (%)	8.6%	37.9%		22.9%			23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	6.0	47.0		26.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.11	0.84		0.01	0.54		0.02	0.04		0.24	0.08	
Control Delay (s/veh)	65.4	47.0		63.0	2.1		44.8	0.1		49.4	0.4	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.4	47.0		63.0	2.2		44.8	0.1		49.4	0.4	
Queue Length 50th (ft)	10	446		3	27		4	0		51	0	
Queue Length 95th (ft)	32	510		m6	40		13	0		92	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	98	1736		353	2411		288	773		282	445	
Starvation Cap Reductn	0	0		0	239		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	0.11	0.84		0.01	0.60		0.02	0.04		0.23	0.08	

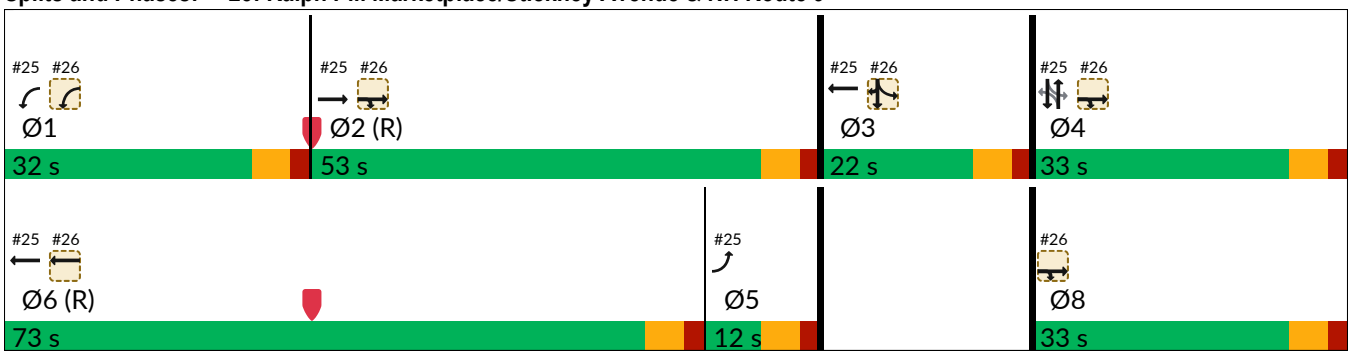
Intersection Summary
Cycle Length: 140

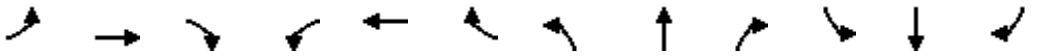
Lane Group	Ø3	Ø6	Ø8
Lane Configurations	[redacted]	[redacted]	[redacted]
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	16.0	24.0	33.0
Total Split (s)	22.0	73.0	33.0
Total Split (%)	16%	52%	24%
Maximum Green (s)	16.0	67.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

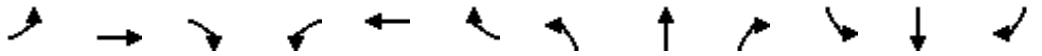




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1342	7	4	1152	47	4	0	20	54	0	30
Future Volume (vph)	10	1342	7	4	1152	47	4	0	20	54	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4960		1668	3435		1805	1615		1760	1524	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1728	4960		1668	3435		1394	1615		1365	1524	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.64	0.64	0.64	0.84	0.84	0.84
Adj. Flow (vph)	11	1443	8	4	1252	51	6	0	31	64	0	36
RTOR Reduction (vph)	0	1	0	0	2	0	0	25	0	0	29	0
Lane Group Flow (vph)	11	1450	0	4	1301	0	6	6	0	64	7	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	47.0		27.6	88.2		25.4	25.4		25.4	25.4	
Effective Green, g (s)	4.4	49.0		29.6	92.2		27.4	27.4		27.4	27.4	
Actuated g/C Ratio	0.03	0.35		0.21	0.66		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	54	1736		352	2262		272	316		267	298	
v/s Ratio Prot	0.01	c0.29		0.00	c0.38			0.00			0.00	
v/s Ratio Perm							0.00			c0.05		
v/c Ratio	0.20	0.84		0.01	0.58		0.02	0.02		0.24	0.02	
Uniform Delay, d1	66.1	41.8		43.6	13.1		45.5	45.5		47.5	45.5	
Progression Factor	1.00	1.00		1.40	0.17		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	4.9		0.0	0.3		0.0	0.0		0.5	0.0	
Delay (s)	68.0	46.7		60.9	2.5		45.5	45.5		48.0	45.5	
Level of Service	E	D		E	A		D	D		D	D	
Approach Delay (s/veh)		46.9			2.7			45.5			47.1	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1198	218	692	990	0	0	0	0	216	0	213
Future Volume (vph)	0	1198	218	692	990	0	0	0	0	216	0	213
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			240									164
Adj. Flow (vph)	0	1316	240	706	1010	0	0	0	0	245	0	242
Lane Group Flow (vph)	0	1316	240	706	1010	0	0	0	0	0	245	242
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					16.0	16.0	16.0
Total Split (s)				32.0	73.0					22.0	22.0	22.0
Total Split (%)				22.9%	52.1%					15.7%	15.7%	15.7%
Maximum Green (s)				26.0	67.0					16.0	16.0	16.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.49	0.22	1.03	0.54						1.07	0.70
Control Delay (s/veh)		1.4	0.3	118.8	9.1						135.5	30.9
Queue Delay		0.5	1.3	29.0	0.7						31.6	0.0
Total Delay (s/veh)		1.9	1.6	147.9	9.9						167.2	30.9
Queue Length 50th (ft)		13	0	~373	94						~248	67
Queue Length 95th (ft)		28	m0	#497	142						#412	158
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2738	1105	685	1854						229	348
Starvation Cap Reductn		892	662	263	473						0	0
Spillback Cap Reductn		528	0	0	0						149	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.71	0.54	1.67	0.73						3.06	0.70

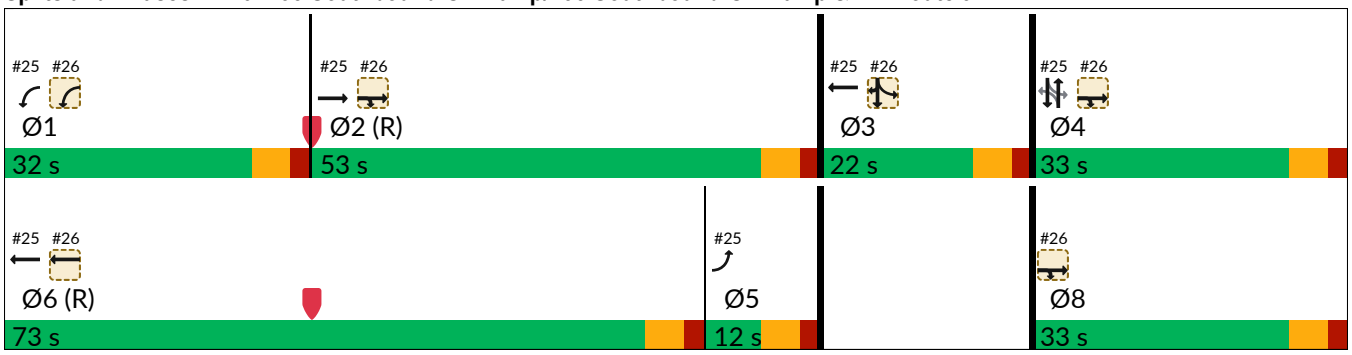
Intersection Summary
Cycle Length: 140

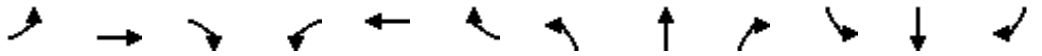
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	16.0	12.0	33.0
Total Split (s)	53.0	33.0	12.0	33.0
Total Split (%)	38%	24%	9%	24%
Maximum Green (s)	47.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

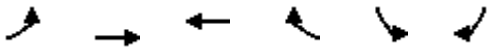




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1198	218	692	990	0	0	0	0	216	0	213
Future Volume (vph)	0	1198	218	692	990	0	0	0	0	216	0	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3236	3336						1787	1599
Peak-hour factor, PHF	0.91	0.91	0.91	0.98	0.98	0.98	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	0	1316	240	706	1010	0	0	0	0	245	0	242
RTOR Reduction (vph)	0	0	109	0	0	0	0	0	0	0	0	143
Lane Group Flow (vph)	0	1316	131	706	1010	0	0	0	0	0	245	99
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		72.4	72.4	27.6	72.2						16.0	16.0
Effective Green, g (s)		76.4	76.4	29.6	74.2						18.0	18.0
Actuated g/C Ratio		0.55	0.55	0.21	0.53						0.13	0.13
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2682	979	684	1768						229	205
v/s Ratio Prot		c0.27	0.07	c0.22	c0.30						c0.14	0.06
v/s Ratio Perm												
v/c Ratio		0.49	0.13	1.03	0.57						1.07	0.48
Uniform Delay, d1		19.7	15.6	55.2	22.2						61.0	56.7
Progression Factor		0.10	0.06	1.54	0.38						1.00	1.00
Incremental Delay, d2		0.1	0.0	41.0	1.2						79.2	1.8
Delay (s)		2.1	1.0	126.0	9.7						140.2	58.5
Level of Service		A	A	F	A						F	E
Approach Delay (s/veh)		1.9			57.5			0.0			99.6	
Approach LOS		A			E			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

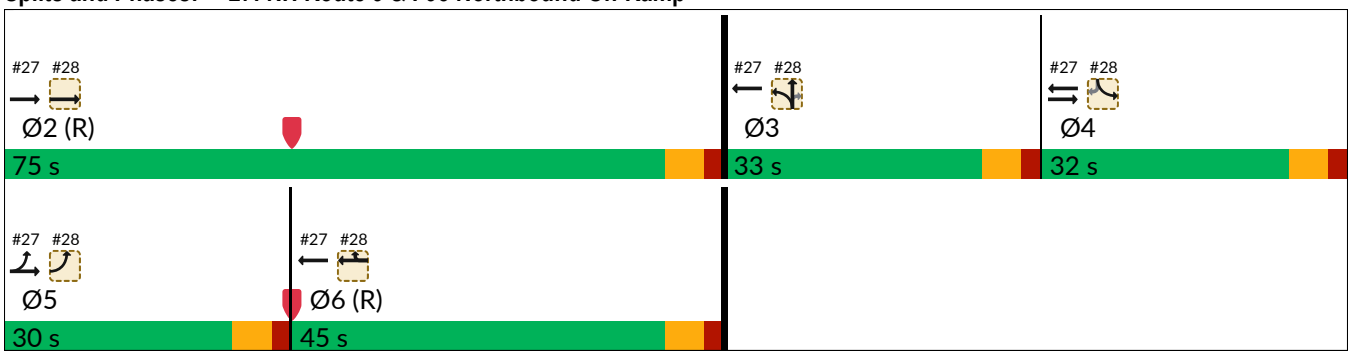


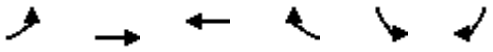
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	237	1177	1682	352	0	0				
Future Volume (vph)	237	1177	1682	352	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				162						
Adj. Flow (vph)	266	1322	1752	367	0	0				
Lane Group Flow (vph)	266	1322	1752	367	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	30.0						75.0	33.0	32.0	45.0
Total Split (%)	21.4%						54%	24%	23%	32%
Maximum Green (s)	24.0						69.0	27.0	26.0	39.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lead							Lead	Lag	Lag
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.86	0.54	0.48	0.22						
Control Delay (s/veh)	89.1	23.3	1.4	0.0						
Queue Delay	59.6	2.3	21.3	0.0						
Total Delay (s/veh)	148.7	25.5	22.7	0.0						
Queue Length 50th (ft)	261	457	36	0						
Queue Length 95th (ft)	m#367	m511	m30	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	309	2454	3628	1652						
Starvation Cap Reductn	148	952	1931	0						
Spillback Cap Reductn	0	310	1303	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	1.65	0.88	1.03	0.22						

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	237	1177	1682	352	0	0
Future Volume (vph)	237	1177	1682	352	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.89	0.89	0.96	0.96	0.90	0.90
Adj. Flow (vph)	266	1322	1752	367	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	266	1322	1752	367	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	24.0	101.0	104.0	140.0		
Effective Green, g (s)	26.0	103.0	106.0	140.0		
Actuated g/C Ratio	0.19	0.74	0.76	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	309	2454	3628	1652		
v/s Ratio Prot	c0.16	c0.40	c0.37			
v/s Ratio Perm				0.22		
v/c Ratio	0.86	0.54	0.48	0.22		
Uniform Delay, d1	55.2	8.1	6.5	0.0		
Progression Factor	1.22	2.74	0.20	1.00		
Incremental Delay, d2	18.1	0.2	0.0	0.0		
Delay (s)	85.3	22.4	1.3	0.0		
Level of Service	F	C	A	A		
Approach Delay (s/veh)		32.9	1.1		0.0	
Approach LOS		C	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

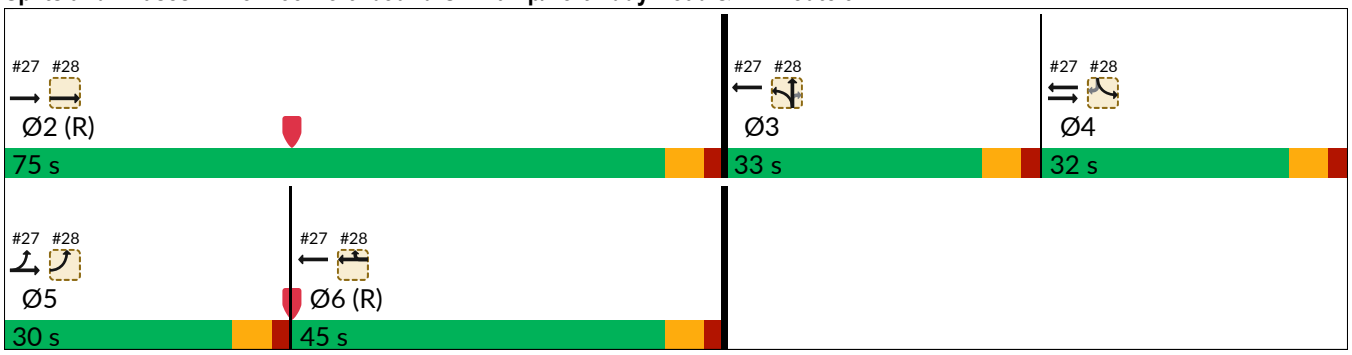
c Critical Lane Group

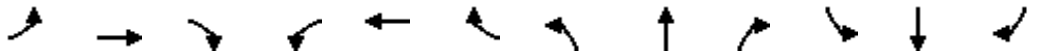
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	826	0	0	1279	366	163	292	471	221	0	592
Future Volume (vph)	351	826	0	0	1279	366	163	292	471	221	0	592
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.934	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1770	3166	1489	3467	0	1652
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1770	3166	1489	3467	0	1652
Satd. Flow (RTOR)						277		130	135			397
Adj. Flow (vph)	394	928	0	0	1453	416	181	324	523	240	0	643
Lane Group Flow (vph)	394	928	0	0	1453	416	181	580	267	240	0	643
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	30.0	75.0			45.0	45.0	33.0	33.0	33.0	32.0		32.0
Total Split (%)	21.4%	53.6%			32.1%	32.1%	23.6%	23.6%	23.6%	22.9%		22.9%
Maximum Green (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead				Lag	Lag	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.66	0.53			1.44	0.61	0.49	0.77	0.64	0.35		0.99
Control Delay (s/veh)	41.6	23.9			242.7	29.8	54.4	47.8	32.4	49.8		54.8
Queue Delay	14.9	0.7			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	56.5	24.6			242.7	29.8	54.4	47.8	32.4	49.8		54.8
Queue Length 50th (ft)	197	371			~938	165	149	220	123	98		272
Queue Length 95th (ft)	222	438			#1055	m290	230	296	237	140		#542
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	600	1752			1011	679	366	758	415	693		648
Starvation Cap Reductn	190	451			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.96	0.71			1.44	0.61	0.49	0.77	0.64	0.35		0.99

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	826	0	0	1279	366	163	292	471	221	0	592
Future Volume (vph)	351	826	0	0	1279	366	163	292	471	221	0	592
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1770	3166	1489	3467		1652
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1770	3166	1489	3467		1652
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	394	928	0	0	1453	416	181	324	523	240	0	643
RTOR Reduction (vph)	0	0	0	0	0	196	0	103	107	0	0	318
Lane Group Flow (vph)	394	928	0	0	1453	220	181	477	160	240	0	325
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
Effective Green, g (s)	26.0	71.0			41.0	41.0	29.0	29.0	29.0	28.0		28.0
Actuated g/C Ratio	0.19	0.51			0.29	0.29	0.21	0.21	0.21	0.20		0.20
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	600	1752			1011	483	366	655	308	693		330
v/s Ratio Prot	c0.12	0.27			c0.42	0.13	0.10	c0.15		0.07		
v/s Ratio Perm									0.11			c0.20
v/c Ratio	0.66	0.53			1.44	0.46	0.49	0.73	0.52	0.35		0.99
Uniform Delay, d1	52.9	23.2			49.5	40.4	49.0	51.8	49.3	48.1		55.8
Progression Factor	0.69	0.98			1.22	1.96	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.2	1.0			200.8	2.2	1.1	4.0	1.5	0.3		45.4
Delay (s)	38.8	23.7			261.1	81.4	50.1	55.9	50.8	48.4		101.2
Level of Service	D	C			F	F	D	E	D	D		F
Approach Delay (s/veh)		28.2			221.1			53.5			86.8	
Approach LOS		C			F			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	114.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Future Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	3455	0	0	1805	1669	0	1763
Flt Permitted		0.950			0.950				0.719			
Satd. Flow (perm)	0	1728	3455	1492	1728	3455	0	0	1366	1669	0	1763
Satd. Flow (RTOR)				111						78		57
Adj. Flow (vph)	2	32	1286	278	24	1451	0	336	0	78	0	2
Lane Group Flow (vph)	0	34	1286	278	24	1451	0	0	336	78	0	59
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Detector Phase	5	5	2	2	1	6		8	8	8	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0
Total Split (s)	20.0	20.0	75.0	75.0	20.0	75.0		45.0	45.0	45.0	45.0	45.0
Total Split (%)	14.3%	14.3%	53.6%	53.6%	14.3%	53.6%		32.1%	32.1%	32.1%	32.1%	32.1%
Maximum Green (s)	14.0	14.0	69.0	69.0	14.0	69.0		39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0	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	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	C-Min		None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0		0		0	0	0	0	0
v/c Ratio		0.27	0.62	0.29	0.20	0.70			0.89	0.15		0.11
Control Delay (s/veh)		63.3	20.1	9.5	62.1	20.6			73.6	8.1		9.6
Queue Delay		0.0	1.4	0.0	0.0	0.1			0.0	0.1		0.0
Total Delay (s/veh)		63.3	21.6	9.5	62.1	20.6			73.6	8.2		9.6
Queue Length 50th (ft)		26	436	105	21	406			282	0		1
Queue Length 95th (ft)		m49	495	m180	m41	481			312	22		9
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150							
Base Capacity (vph)		197	2084	944	197	2069			404	548		561
Starvation Cap Reductn		0	0	0	0	48			0	0		0
Spillback Cap Reductn		0	558	0	0	0			0	92		0
Storage Cap Reductn		0	0	0	0	0			0	0		0
Reduced v/c Ratio		0.17	0.84	0.29	0.12	0.72			0.83	0.17		0.11

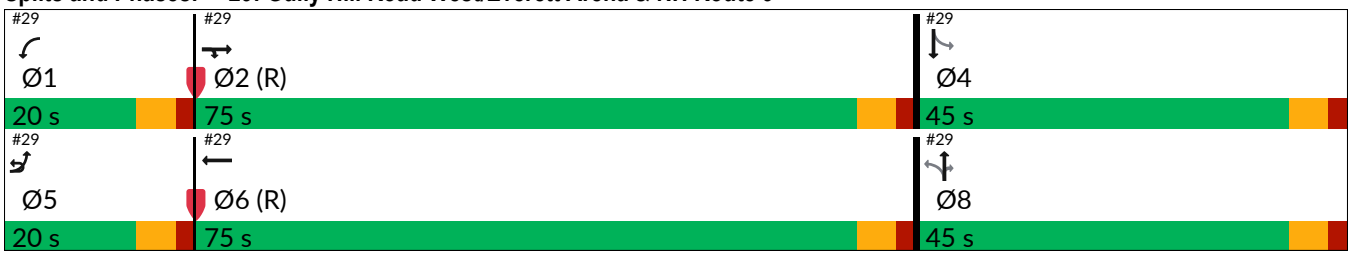
Intersection Summary
Cycle Length: 140

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	57
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Don't Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 127 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



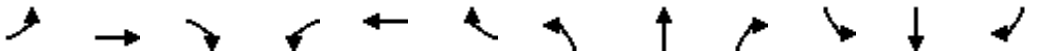
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Future Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	3455			1805	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00			0.72	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	3455			1365	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1286	278	24	1451	0	336	0	78	0	2
RTOR Reduction (vph)	0	0	0	46	0	0	0	0	0	56	0	41
Lane Group Flow (vph)	0	34	1286	232	24	1451	0	0	336	22	0	18
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Actuated Green, G (s)		5.7	80.1	80.1	5.1	79.5			36.8	36.8		36.8
Effective Green, g (s)		7.7	82.1	82.1	7.1	81.5			38.8	38.8		38.8
Actuated g/C Ratio		0.06	0.59	0.59	0.05	0.58			0.28	0.28		0.28
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)		95	2026	874	87	2011			378	462		488
v/s Ratio Prot		c0.02	0.37	0.16	0.01	c0.42						0.01
v/s Ratio Perm									c0.25	0.01		
v/c Ratio		0.36	0.63	0.27	0.28	0.72			0.89	0.05		0.04
Uniform Delay, d1		63.8	19.1	14.2	64.0	21.1			48.5	37.1		37.0
Progression Factor		0.97	0.97	0.95	0.96	0.86			1.00	1.00		1.00
Incremental Delay, d2		1.9	1.3	0.6	1.5	2.0			21.5	0.0		0.0
Delay (s)		63.9	19.7	14.2	62.9	20.1			70.1	37.1		37.0
Level of Service		E	B	B	E	C			E	D		D
Approach Delay (s/veh)			19.7			20.8			63.8			37.0
Approach LOS			B			C			E			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Future Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.998			0.851			0.850	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1818	3424	0	1728	3448	0	1770	1585	0	1847	1652	0
Flt Permitted				0.950			0.950			0.950		
Satd. Flow (perm)	1818	3424	0	1728	3448	0	1770	1585	0	1847	1652	0
Satd. Flow (RTOR)		6			1			165			415	
Adj. Flow (vph)	0	1276	85	180	1402	18	124	1	165	24	0	5
Lane Group Flow (vph)	0	1361	0	180	1420	0	124	166	0	24	5	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	58.0		17.0	63.0		21.0	20.0		16.0	15.0	
Total Split (%)	8.6%	41.4%		12.1%	45.0%		15.0%	14.3%		11.4%	10.7%	
Maximum Green (s)	6.0	52.0		11.0	57.0		15.0	14.0		10.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.70		0.54	0.52		0.52	0.56		0.19	0.01	
Control Delay (s/veh)		35.8		57.8	7.0		63.1	16.0		64.7	0.0	
Queue Delay		31.5		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		67.3		57.8	7.0		63.1	16.0		64.7	0.0	
Queue Length 50th (ft)		691		152	206		106	1		21	0	
Queue Length 95th (ft)		770		230	383		169	64		23	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)				200			90					
Base Capacity (vph)		1949		333	2724		259	333		158	512	
Starvation Cap Reductn		662		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.06		0.54	0.52		0.48	0.50		0.15	0.01	

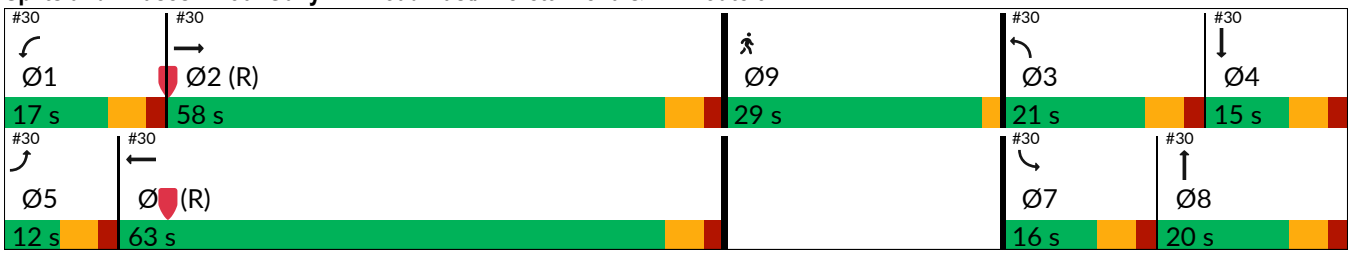
Intersection Summary
Cycle Length: 140

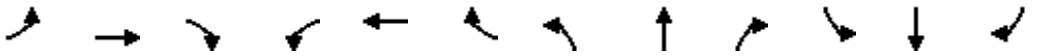
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	21%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 57 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

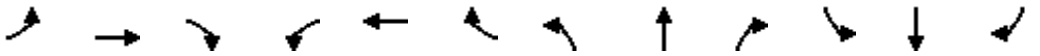




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Future Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3423		1728	3449		1770	1585		1847	1652	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3423		1728	3449		1770	1585		1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1276	85	180	1402	18	124	1	165	24	0	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	147	0	0	5	0
Lane Group Flow (vph)	0	1358	0	180	1420	0	124	19	0	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		72.8		25.0	103.8		17.0	13.2		5.0	1.2	
Effective Green, g (s)		74.8		27.0	105.8		19.0	15.2		7.0	3.2	
Actuated g/C Ratio		0.53		0.19	0.76		0.14	0.11		0.05	0.02	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1828		333	2606		240	172		92	37	
v/s Ratio Prot		c0.40		0.10	c0.41		c0.07	c0.01		0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.74		0.54	0.54		0.52	0.11		0.26	0.00	
Uniform Delay, d1		25.2		50.9	7.1		56.2	56.3		64.0	66.8	
Progression Factor		1.45		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3		1.8	0.8		1.9	0.3		1.5	0.0	
Delay (s)		38.9		52.7	7.9		58.1	56.6		65.5	66.9	
Level of Service		D		D	A		E	E		E	E	
Approach Delay (s/veh)		38.9			13.0			57.2			65.8	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

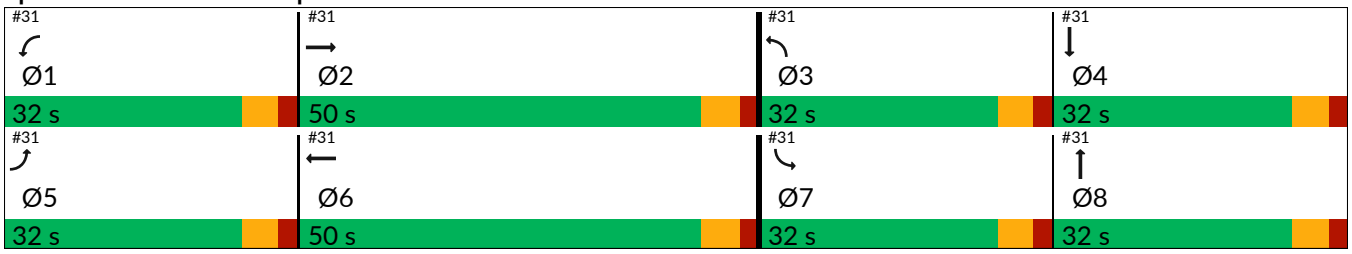


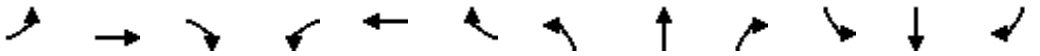
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Future Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			177			157			271			412
Adj. Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
Lane Group Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.42	1.05	0.15	0.71	0.65	0.04	0.85	0.25	0.17	0.49	0.81	0.27
Control Delay (s/veh)	68.0	84.5	0.2	68.6	35.6	0.1	77.7	42.2	0.2	68.3	73.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.0	84.5	0.2	68.6	35.6	0.1	77.7	42.2	0.2	68.3	73.7	0.4
Queue Length 50th (ft)	63	~675	0	186	393	0	256	88	0	80	244	0
Queue Length 95th (ft)	113	#838	0	276	498	0	#367	144	0	108	272	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	367	1168	1599	367	1490	1652	355	496	1599	355	374	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	1.05	0.15	0.57	0.65	0.04	0.80	0.25	0.17	0.25	0.74	0.27

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 136.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ 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: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Future Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.89	0.89	0.89	0.95	0.95	0.95	0.83	0.83	0.83	0.71	0.71	0.71
Adj. Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.2	45.6	138.1	20.6	57.0	138.1	24.4	35.4	138.1	12.5	23.5	138.1
Effective Green, g (s)	11.2	47.6	138.1	22.6	59.0	138.1	26.4	37.4	138.1	14.5	25.5	138.1
Actuated g/C Ratio	0.08	0.34	1.00	0.16	0.43	1.00	0.19	0.27	1.00	0.10	0.18	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	144	1190	1599	292	1476	1652	330	492	1599	181	335	1546
v/s Ratio Prot	0.04	c0.35		c0.12	0.28		c0.16	0.07		0.05	c0.15	
v/s Ratio Perm			0.15			0.04			0.17			0.27
v/c Ratio	0.49	1.03	0.15	0.72	0.66	0.04	0.86	0.25	0.17	0.50	0.82	0.27
Uniform Delay, d1	60.7	45.3	0.0	54.7	31.5	0.0	54.1	39.4	0.0	58.4	54.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	34.1	0.2	8.1	1.1	0.0	19.9	0.3	0.2	2.1	14.8	0.4
Delay (s)	63.3	79.4	0.2	62.8	32.6	0.0	73.9	39.7	0.2	60.5	68.9	0.4
Level of Service	E	E	A	E	C	A	E	D	A	E	E	A
Approach Delay (s/veh)		66.2			36.0			38.3			31.4	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	138.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Future Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.996			0.960			0.971			0.951
Flt Protected		0.950			0.950			0.950			0.950	0.988
Satd. Flow (prot)	0	1787	3323	0	1668	3317	0	1668	1705	0	1585	1679
Flt Permitted		0.950			0.950			0.950			0.950	0.988
Satd. Flow (perm)	0	1787	3323	0	1668	3317	0	1668	1705	0	1585	1679
Satd. Flow (RTOR)			2			35			7			14
Adj. Flow (vph)	8	99	1236	36	35	961	354	127	263	62	379	132
Lane Group Flow (vph)	0	107	1272	0	35	1315	0	127	325	0	307	302
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.48	0.96		0.23	1.23		0.37	0.92		0.95	0.85
Control Delay (s/veh)		51.0	50.6		49.5	142.8		41.2	73.4		82.2	62.7
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		51.0	50.6		49.5	142.8		41.2	73.4		82.2	62.7
Queue Length 50th (ft)		70	~524		23	~590		77	219		223	205
Queue Length 95th (ft)		118	#619		55	#761		140	#408		#421	#383
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		282	1323		263	1073		341	354		324	354
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		0.38	0.96		0.13	1.23		0.37	0.92		0.95	0.85

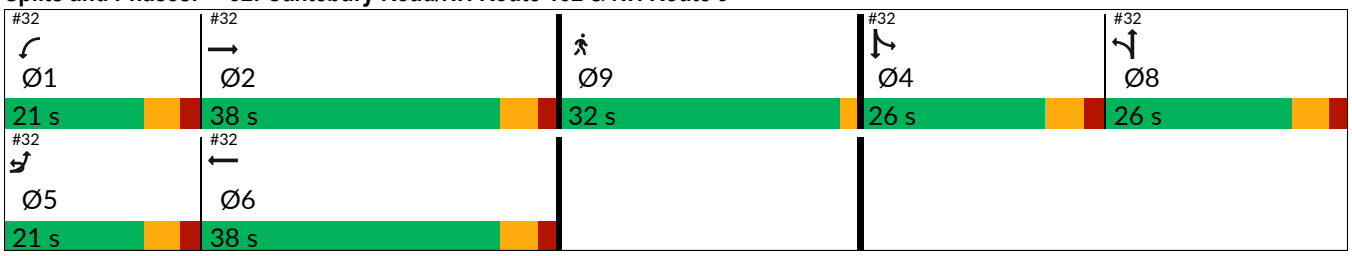
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	94	
Future Volume (vph)	94	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	98	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 107.6
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



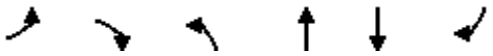
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Future Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	1.00		1.00	0.96		1.00	0.97		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (prot)		1787	3322		1668	3316		1668	1706		1585	1680
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (perm)		1787	3322		1668	3316		1668	1706		1585	1680
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	8	99	1236	36	35	961	354	127	263	62	379	132
RTOR Reduction (vph)	0	0	1	0	0	23	0	0	6	0	0	11
Lane Group Flow (vph)	0	107	1271	0	35	1292	0	127	319	0	307	291
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		11.5	40.8		5.2	34.5		20.0	20.0		20.0	20.0
Effective Green, g (s)		13.5	42.8		7.2	36.5		22.0	22.0		22.0	22.0
Actuated g/C Ratio		0.12	0.39		0.07	0.33		0.20	0.20		0.20	0.20
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		219	1292		109	1100		333	341		317	336
v/s Ratio Prot		c0.06	c0.38		0.02	c0.39		0.08	c0.19		c0.19	0.17
v/s Ratio Perm												
v/c Ratio		0.49	0.98		0.32	1.17		0.38	0.94		0.97	0.87
Uniform Delay, d1		45.0	33.3		49.1	36.8		38.1	43.3		43.7	42.6
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.7	21.0		1.7	88.2		0.7	32.4		41.5	20.1
Delay (s)		46.7	54.3		50.8	124.9		38.8	75.7		85.2	62.7
Level of Service		D	D		D	F		D	E		F	E
Approach Delay (s/veh)			53.7			123.0			65.4			74.0
Approach LOS			D			F			E			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	83.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	94
Future Volume (vph)	94
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	490	58	7	587	486	142			
Future Volume (vph)	490	58	7	587	486	142			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1787	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.994					
Satd. Flow (perm)	1787	1599	0	1808	1881	1546			
Satd. Flow (RTOR)		63				156			
Adj. Flow (vph)	583	69	9	734	534	156			
Lane Group Flow (vph)	583	69	0	743	534	156			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					45.0	25.0	45.0
Total Split (%)	33.3%	33.3%					43%	24%	43%
Maximum Green (s)	29.0	29.0					39.0	19.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	1.11	0.13		0.65	0.45	0.15			
Control Delay (s/veh)	107.5	8.8		15.8	14.9	4.9			
Queue Delay	0.0	0.0		0.0	1.1	0.0			
Total Delay (s/veh)	107.5	8.8		15.8	16.1	4.9			
Queue Length 50th (ft)	~452	3		292	190	5			
Queue Length 95th (ft)	#596	31		336	m271	m28			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	527	516		1133	1178	1026			
Starvation Cap Reductn	0	0		0	403	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	1.11	0.13		0.66	0.69	0.15			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 70

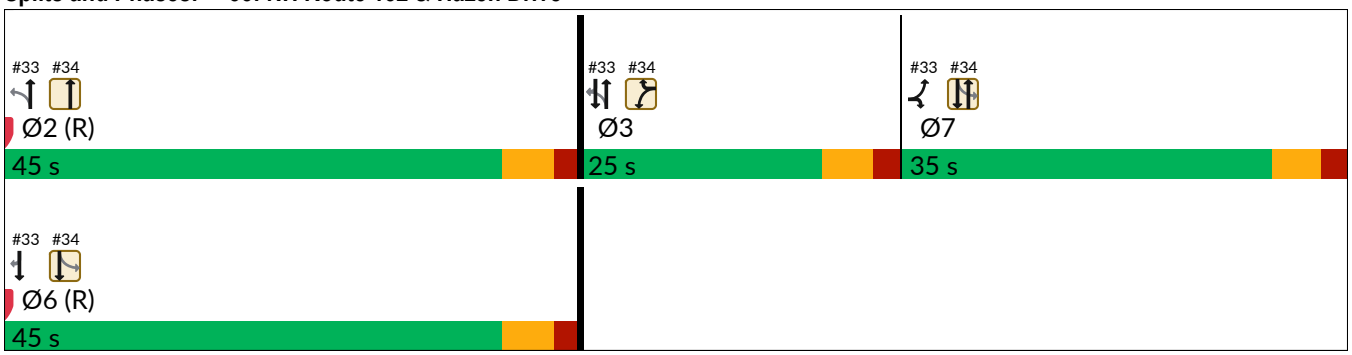
Control Type: Actuated-Coordinated

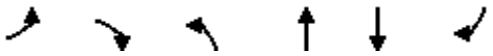
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	490	58	7	587	486	142
Future Volume (vph)	490	58	7	587	486	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1787	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1787	1599		1807	1881	1546
Peak-hour factor, PHF	0.84	0.84	0.80	0.80	0.91	0.91
Adj. Flow (vph)	583	69	9	734	534	156
RTOR Reduction (vph)	0	44	0	0	0	58
Lane Group Flow (vph)	583	25	0	743	534	98
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	29.0	29.0		64.0	64.0	64.0
Effective Green, g (s)	31.0	31.0		66.0	66.0	66.0
Actuated g/C Ratio	0.30	0.30		0.63	0.63	0.63
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	527	472		1135	1182	971
v/s Ratio Prot	c0.33	0.02			0.28	
v/s Ratio Perm				c0.41		0.06
v/c Ratio	1.11	0.05		0.65	0.45	0.10
Uniform Delay, d1	37.0	26.5		12.3	10.1	7.7
Progression Factor	1.00	1.00		1.00	1.33	3.57
Incremental Delay, d2	71.6	0.0		1.4	0.2	0.0
Delay (s)	108.6	26.5		13.7	13.7	27.7
Level of Service	F	C		B	B	C
Approach Delay (s/veh)	99.9			13.7	16.9	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	273	154	869	217	44	370			
Future Volume (vph)	273	154	869	217	44	370			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.970						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3351	0	1728	1818			
Flt Permitted	0.950				0.163				
Satd. Flow (perm)	1787	1599	3351	0	296	1818			
Satd. Flow (RTOR)		155	76						
Adj. Flow (vph)	307	173	1073	268	47	398			
Lane Group Flow (vph)	307	173	1341	0	47	398			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	25.0	25.0					45.0	45.0	35.0
Total Split (%)	23.8%	23.8%					43%	43%	33%
Maximum Green (s)	19.0	19.0					39.0	39.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.84	0.38	0.55		0.22	0.30			
Control Delay (s/veh)	61.1	10.5	3.6		7.7	6.0			
Queue Delay	0.0	0.0	1.2		0.0	0.0			
Total Delay (s/veh)	61.1	10.5	4.8		7.7	6.0			
Queue Length 50th (ft)	203	10	72		9	82			
Queue Length 95th (ft)	#347	66	m102		25	121			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	367	451	2446		214	1315			
Starvation Cap Reductn	0	0	813		0	0			
Spillback Cap Reductn	0	0	0		0	6			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.84	0.38	0.82		0.22	0.30			

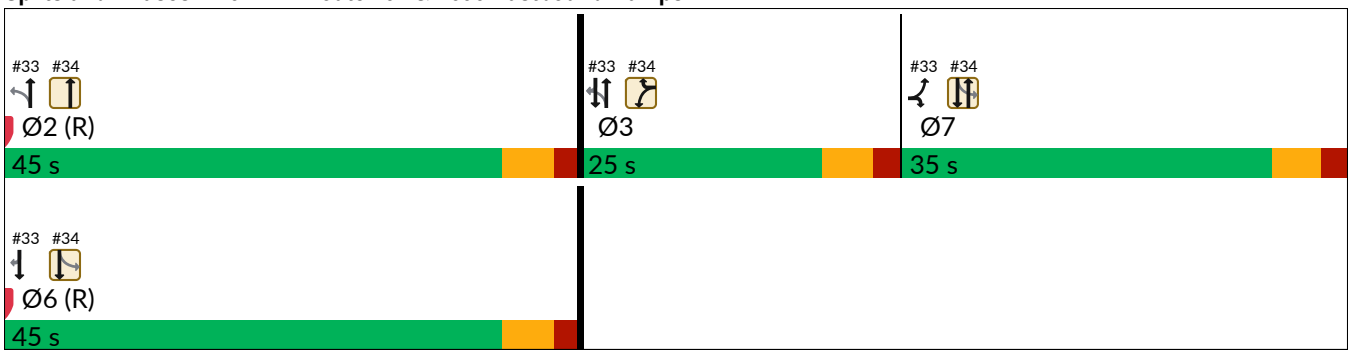
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 70

Control Type: Actuated-Coordinated

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.

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

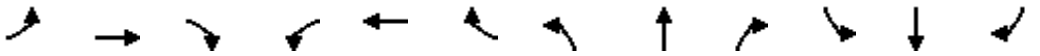


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	273	154	869	217	44	370
Future Volume (vph)	273	154	869	217	44	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3352		1728	1818
Flt Permitted	0.95	1.00	1.00		0.16	1.00
Satd. Flow (perm)	1787	1599	3352		296	1818
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.93	0.93
Adj. Flow (vph)	307	173	1073	268	47	398
RTOR Reduction (vph)	0	123	21	0	0	0
Lane Group Flow (vph)	307	50	1320	0	47	398
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	19.6	19.6	73.4		73.4	73.4
Effective Green, g (s)	21.6	21.6	75.4		75.4	75.4
Actuated g/C Ratio	0.21	0.21	0.72		0.72	0.72
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	367	328	2407		212	1305
v/s Ratio Prot	c0.17	0.03	c0.39			0.22
v/s Ratio Perm					0.16	
v/c Ratio	0.84	0.15	0.55		0.22	0.30
Uniform Delay, d1	40.0	34.2	6.9		5.0	5.3
Progression Factor	1.00	1.00	0.48		1.00	1.00
Incremental Delay, d2	15.1	0.2	0.1		0.5	0.1
Delay (s)	55.2	34.4	3.5		5.5	5.5
Level of Service	E	C	A		A	A
Approach Delay (s/veh)	47.7		3.5			5.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

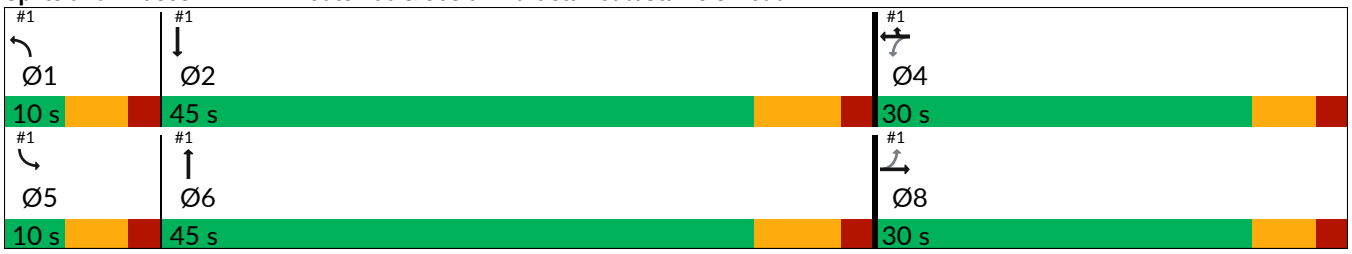
2027 Opening Year Build Saturday Midday Peak-Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Future Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.981				0.850		0.989			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1864	0	0	1805	1615	1787	3535	0	1787	3571	0
Flt Permitted					0.748		0.950			0.950		
Satd. Flow (perm)	0	1864	0	0	1421	1615	1787	3535	0	1787	3571	0
Satd. Flow (RTOR)		2				135		12			1	
Adj. Flow (vph)	0	12	2	78	0	45	5	916	70	35	1104	7
Lane Group Flow (vph)	0	14	0	0	78	45	5	986	0	35	1111	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.27	0.10	0.04	0.43		0.25	0.46	
Control Delay (s/veh)		20.0			23.8	0.5	30.4	8.6		33.3	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		20.0			23.8	0.5	30.4	8.6		33.3	7.6	
Queue Length 50th (ft)		2			16	0	1	70		9	83	
Queue Length 95th (ft)		8			55	0	13	192		41	203	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		966			736	901	142	2764		142	2792	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.11	0.05	0.04	0.36		0.25	0.40	

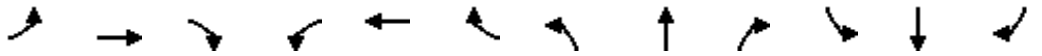
Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 53.8
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Future Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1863			1805	1615	1787	3536		1787	3571	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1863			1422	1615	1787	3536		1787	3571	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	0	12	2	78	0	45	5	916	70	35	1104	7
RTOR Reduction (vph)	0	2	0	0	0	38	0	5	0	0	0	0
Lane Group Flow (vph)	0	12	0	0	78	7	5	981	0	35	1111	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.3			7.3	7.3	0.6	31.8		1.3	32.5	
Effective Green, g (s)		9.3			9.3	9.3	0.6	33.8		1.3	34.5	
Actuated g/C Ratio		0.16			0.16	0.16	0.01	0.56		0.02	0.58	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		289			220	250	17	1995		38	2056	
v/s Ratio Prot		0.01				0.00	0.00	0.28		c0.02	c0.31	
v/s Ratio Perm					c0.05							
v/c Ratio		0.04			0.35	0.03	0.29	0.49		0.92	0.54	
Uniform Delay, d1		21.5			22.6	21.5	29.4	7.9		29.2	7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.0	0.0	9.4	0.2		114.3	0.3	
Delay (s)		21.6			23.6	21.5	38.9	8.1		143.5	8.1	
Level of Service		C			C	C	D	A		F	A	
Approach Delay (s/veh)		21.6			22.8			8.2			12.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	15.5
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

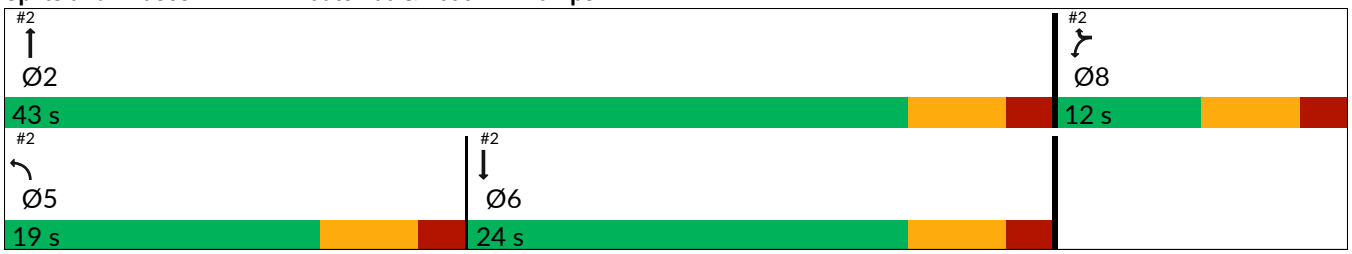


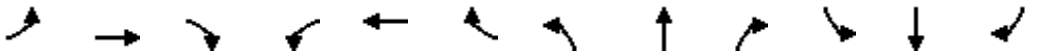
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	16	910	838	0	0	615	322
Future Volume (vph)	0	0	0	14	0	16	910	838	0	0	615	322
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Satd. Flow (RTOR)						179						358
Adj. Flow (vph)	0	0	0	21	0	24	968	891	0	0	683	358
Lane Group Flow (vph)	0	0	0	21	0	24	968	891	0	0	683	358
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.06		0.06	0.81	0.29			0.54	0.23
Control Delay (s/veh)				19.8		0.3	25.4	2.0			13.5	0.4
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.8		0.3	25.4	2.0			13.5	0.4
Queue Length 50th (ft)				4		0	89	0			53	0
Queue Length 95th (ft)				17		0	#290	64			135	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				338		438	1188	3049			1633	1546
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				0.06		0.05	0.81	0.29			0.42	0.23

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 44.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

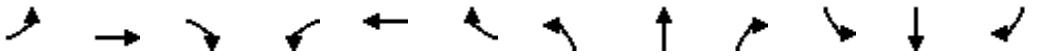




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	16	910	838	0	0	615	322
Future Volume (vph)	0	0	0	14	0	16	910	838	0	0	615	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1793		1553	3351	3455			3455	1546
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1793		1553	3351	3455			3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	21	0	24	968	891	0	0	683	358
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	21	0	2	968	891	0	0	683	358
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.9		1.9	13.5	34.0			14.5	47.9
Effective Green, g (s)				3.9		3.9	15.5	36.0			16.5	47.9
Actuated g/C Ratio				0.08		0.08	0.32	0.75			0.34	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				145		126	1084	2596			1190	1546
v/s Ratio Prot				0.01		0.00	c0.29	0.26			c0.20	
v/s Ratio Perm												c0.23
v/c Ratio				0.14		0.02	0.89	0.34			0.57	0.23
Uniform Delay, d1				20.4		20.2	15.4	2.0			12.8	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.5		0.0	9.5	0.1			0.7	0.4
Delay (s)				20.9		20.3	24.9	2.1			13.5	0.4
Level of Service				C		C	C	A			B	A
Approach Delay (s/veh)		0.0			20.6			14.0			9.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

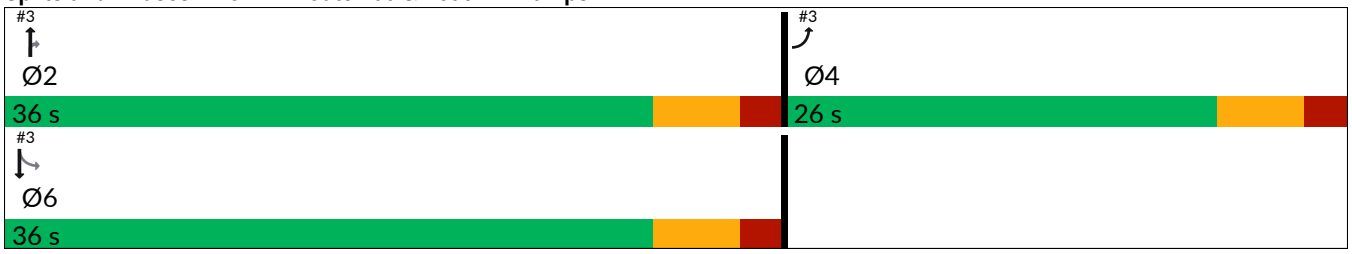
c Critical Lane Group

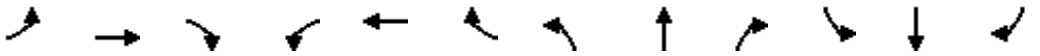


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	0	1044	0	0	0	0	1443	13	9	619	0
Future Volume (vph)	305	0	1044	0	0	0	0	1443	13	9	619	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2842	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.924	
Satd. Flow (perm)	3467	0	2842	0	0	0	0	3455	1546	0	3224	0
Satd. Flow (RTOR)			936						53			
Adj. Flow (vph)	308	0	1055	0	0	0	0	1568	14	11	755	0
Lane Group Flow (vph)	308	0	1055	0	0	0	0	1568	14	0	766	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.39		0.37					0.73	0.01		0.38	
Control Delay (s/veh)	18.5		0.4					10.0	0.0		5.9	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	18.5		0.4					10.0	0.0		5.9	
Queue Length 50th (ft)	41		0					146	0		51	
Queue Length 95th (ft)	69		0					254	1		79	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1461		2842					2138	977		1995	
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	0.21		0.37					0.73	0.01		0.38	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 52.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

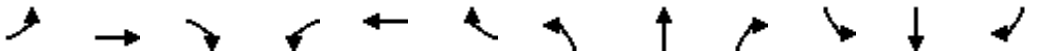




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	0	1044	0	0	0	0	1443	13	9	619	0
Future Volume (vph)	305	0	1044	0	0	0	0	1443	13	9	619	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2842					3455	1546		3487	
Flt Permitted	0.95		1.00					1.00	1.00		0.92	
Satd. Flow (perm)	3467		2842					3455	1546		3226	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92	0.82	0.82	0.82
Adj. Flow (vph)	308	0	1055	0	0	0	0	1568	14	11	755	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	5	0	0	0
Lane Group Flow (vph)	308	0	1055	0	0	0	0	1568	9	0	766	0
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	9.9		52.2					30.3	30.3		30.3	
Effective Green, g (s)	11.9		52.2					32.3	32.3		32.3	
Actuated g/C Ratio	0.23		1.00					0.62	0.62		0.62	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	790		2842					2137	956		1996	
v/s Ratio Prot	0.09							c0.45				
v/s Ratio Perm			c0.37						0.01		0.24	
v/c Ratio	0.39		0.37					0.73	0.01		0.38	
Uniform Delay, d1	17.1		0.0					6.9	3.8		5.0	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.3		0.4					1.3	0.0		0.1	
Delay (s)	17.4		0.4					8.3	3.8		5.1	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.2			0.0			8.2			5.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

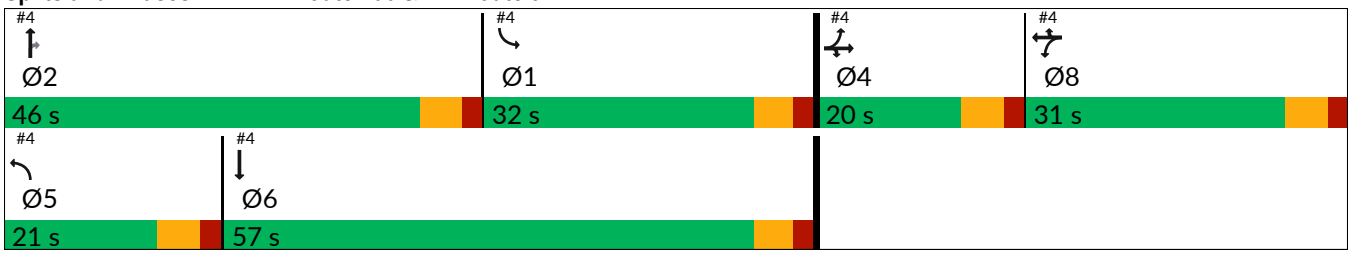


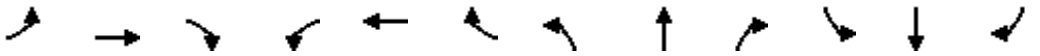
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Future Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.987		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1572	3267	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.987		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1572	3267	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			407			617
Adj. Flow (vph)	795	366	70	415	404	33	73	706	407	52	852	901
Lane Group Flow (vph)	795	366	70	266	553	33	73	706	407	52	852	901
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	1.44	1.22	0.17	0.70	0.70	0.06	0.36	0.63	0.53	0.21	0.71	0.50
Control Delay (s/veh)	241.9	165.8	0.9	49.2	42.7	0.2	51.0	33.5	5.5	44.4	33.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	241.9	165.8	0.9	49.2	42.7	0.2	51.0	33.5	5.5	44.4	33.4	1.0
Queue Length 50th (ft)	~401	~328	0	180	187	0	47	220	0	32	270	0
Queue Length 95th (ft)	#622	#608	0	#354	296	0	102	311	70	74	361	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	552	299	403	437	908	558	302	1494	899	498	1885	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	111	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.44	1.22	0.17	0.61	0.61	0.06	0.24	0.47	0.45	0.10	0.48	0.50

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 101.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Future Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1572	3266	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1572	3266	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	795	366	70	415	404	33	73	706	407	52	852	901
RTOR Reduction (vph)	0	0	59	0	0	25	0	0	277	0	0	0
Lane Group Flow (vph)	795	366	11	266	553	8	73	706	130	52	852	901
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.6	14.6	14.6	22.5	22.5	22.5	8.1	30.6	30.6	10.5	33.0	102.2
Effective Green, g (s)	16.6	16.6	16.6	24.5	24.5	24.5	10.1	32.6	32.6	12.5	35.0	102.2
Actuated g/C Ratio	0.16	0.16	0.16	0.24	0.24	0.24	0.10	0.32	0.32	0.12	0.34	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	544	295	251	376	782	370	170	1102	493	211	1183	1812
v/s Ratio Prot	c0.24	0.20	0.01	0.17	c0.17	0.01	0.04	c0.20		0.03	c0.25	
v/s Ratio Perm									0.08			0.50
v/c Ratio	1.46	1.24	0.05	0.71	0.71	0.02	0.43	0.64	0.26	0.25	0.72	0.50
Uniform Delay, d1	42.8	42.8	36.1	35.6	35.6	29.7	43.3	29.8	25.9	40.6	29.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	217.6	133.8	0.1	6.0	2.9	0.0	1.7	1.3	0.3	0.6	2.2	1.0
Delay (s)	260.4	176.6	36.2	41.5	38.5	29.7	45.1	31.1	26.2	41.2	31.5	1.0
Level of Service	F	F	D	D	D	C	D	C	C	D	C	A
Approach Delay (s/veh)		222.7			39.1			30.2			16.6	
Approach LOS		F			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1459.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	187	0	301	7	928	27	279	1123	9
Future Vol, veh/h	5	0	10	187	0	301	7	928	27	279	1123	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	79	79	79	94	94	94	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	10	0	20	237	0	381	7	987	29	303	1221	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2834	2863	1226	2829	-	987	1230	0	0	1016	0	0
Stage 1	1832	1832	-	1002	-	-	-	-	-	-	-	-
Stage 2	1002	1031	-	1827	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	11	17	220	~ 11	0	~ 303	570	-	-	687	-	-
Stage 1	99	128	-	295	0	-	-	-	-	-	-	-
Stage 2	295	313	-	~ 99	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	9	220	~ 6	-	~ 303	570	-	-	687	-	-
Mov Cap-2 Maneuver	-	9	-	~ 6	-	-	-	-	-	-	-	-
Stage 1	55	72	-	291	-	-	-	-	-	-	-	-
Stage 2	-	309	-	~ 50	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		$ 7564.54	0.08	2.83
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	570	-	-	-	-	6	303	687	-	-
HCM Lane V/C Ratio	0.013	-	-	-	-	41.441	1.258	0.442	-	-
HCM Ctrl Dly (s/v)	11.4	-	-	-	-	$ 19458.1	175.5	14.3	-	-
HCM Lane LOS	B	-	-	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	31.7	17.8	2.3	-	-

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

Intersection	
Int Delay, s/veh	101.7

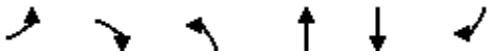
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	223	215	1074	1123	197
Future Vol, veh/h	82	223	215	1074	1123	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	85	232	224	1119	1182	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2749	1182	1389	0	-	0
Stage 1	1182	-	-	-	-	-
Stage 2	1567	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	~ 22	233	496	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 12	233	496	-	-	-
Mov Cap-2 Maneuver	~ 12	-	-	-	-	-
Stage 1	161	-	-	-	-	-
Stage 2	191	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	$ 963.56	3.02	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	496	-	12	233	-	-
HCM Lane V/C Ratio	0.452	-	6.992	0.996	-	-
HCM Ctrl Dly (s/v)	18.1	-	$ 3304.9	102.6	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	2.3	-	11.9	9.3	-	-

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

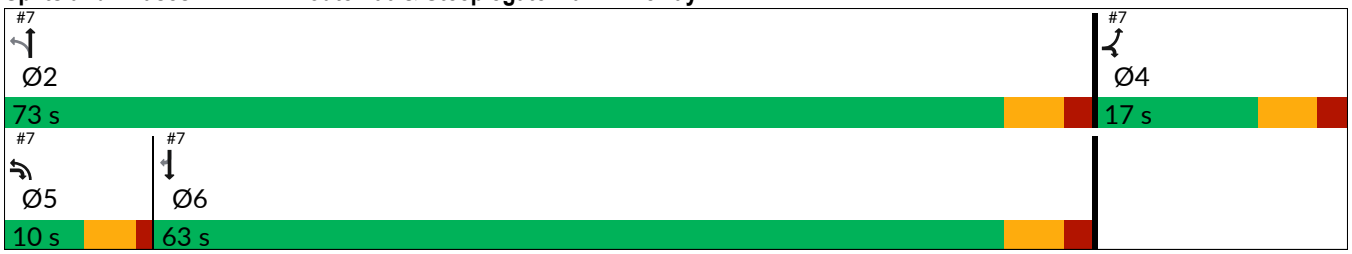


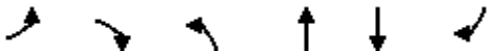
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	195	152	150	1091	1149	197
Future Volume (vph)	195	152	150	1091	1149	197
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1583	1728	1881	1881	1546
Flt Permitted	0.950		0.066			
Satd. Flow (perm)	1888	1583	120	1881	1881	1546
Satd. Flow (RTOR)		99				203
Adj. Flow (vph)	217	169	163	1186	1185	203
Lane Group Flow (vph)	217	169	163	1186	1185	203
Turn Type	Prot	pt+ov	pm+pt	NA	NA	Perm
Protected Phases	4	4 5	5	2	6	
Permitted Phases			2			6
Detector Phase	4	4 5	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	10.0
Minimum Split (s)	11.0		9.5	16.0	16.0	16.0
Total Split (s)	17.0		10.0	73.0	63.0	63.0
Total Split (%)	18.9%		11.1%	81.1%	70.0%	70.0%
Maximum Green (s)	11.0		5.5	67.0	57.0	57.0
Yellow Time (s)	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0		1.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0		2.5	4.0	4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Min	Min	Min
v/c Ratio	0.79	0.35	0.71	0.82	0.96	0.19
Control Delay (s/veh)	59.5	14.5	33.6	13.1	34.6	1.3
Queue Delay	0.0	0.0	0.0	2.1	0.0	0.0
Total Delay (s/veh)	59.5	14.5	33.6	15.2	34.6	1.3
Queue Length 50th (ft)	123	32	38	338	561	0
Queue Length 95th (ft)	#239	86	#131	561	#931	21
Internal Link Dist (ft)	425			617	959	
Turn Bay Length (ft)		140	250			275
Base Capacity (vph)	274	467	229	1454	1243	1090
Starvation Cap Reductn	0	0	0	147	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.36	0.71	0.91	0.95	0.19

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 89.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 7: NH Route 106 & Steeplegate Mall Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	195	152	150	1091	1149	197
Future Volume (vph)	195	152	150	1091	1149	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	12	11	12	12	11
Total Lost time (s)	4.0	4.0	2.5	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1888	1583	1728	1881	1881	1546
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	1888	1583	119	1881	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.97	0.97
Adj. Flow (vph)	217	169	163	1186	1185	203
RTOR Reduction (vph)	0	72	0	0	0	70
Lane Group Flow (vph)	217	97	163	1186	1185	133
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Turn Type	Prot	pt+ov	pm+pt	NA	NA	Perm
Protected Phases	4	4 5	5	2	6	
Permitted Phases			2			6
Actuated Green, G (s)	10.9	22.4	66.4	66.4	56.4	56.4
Effective Green, g (s)	12.9	24.4	68.4	68.4	58.4	58.4
Actuated g/C Ratio	0.14	0.27	0.77	0.77	0.65	0.65
Clearance Time (s)	6.0		4.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	272	432	226	1440	1230	1011
v/s Ratio Prot	c0.11	0.06	0.06	c0.63	c0.63	
v/s Ratio Perm			0.49			0.09
v/c Ratio	0.80	0.22	0.72	0.82	0.96	0.13
Uniform Delay, d1	36.9	25.1	26.8	6.6	14.5	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.3	10.8	4.0	17.5	0.1
Delay (s)	51.9	25.4	37.6	10.6	31.9	5.9
Level of Service	D	C	D	B	C	A
Approach Delay (s/veh)	40.3			13.8	28.1	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	10.5
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

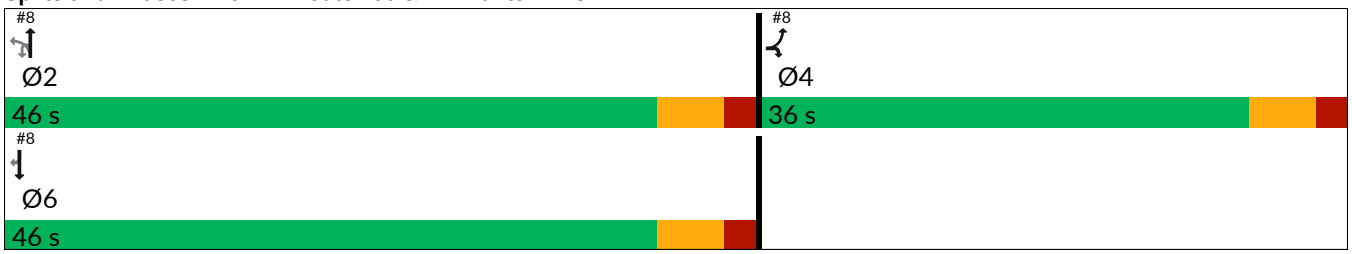
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	478	205	2	230	767	746	556
Future Volume (vph)	478	205	2	230	767	746	556
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1745	1900	1837	1615
Flt Permitted	0.950			0.156			
Satd. Flow (perm)	1745	1561	0	287	1900	1837	1615
Satd. Flow (RTOR)		147					579
Adj. Flow (vph)	556	238	2	261	872	777	579
Lane Group Flow (vph)	556	238	0	263	872	777	579
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.86	0.36		1.73	0.87	0.80	0.51
Control Delay (s/veh)	38.5	8.7		377.1	28.5	24.1	2.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.5	8.7		377.1	28.5	24.1	2.8
Queue Length 50th (ft)	249	30		~205	381	318	0
Queue Length 95th (ft)	#372	72		#271	#612	#545	47
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	703	717		152	1006	972	1127
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	0.79	0.33		1.73	0.87	0.80	0.51

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 79.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

~ 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: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	478	205	2	230	767	746	556
Future Volume (vph)	478	205	2	230	767	746	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1745	1900	1837	1615
Flt Permitted	0.95	1.00		0.16	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		287	1900	1837	1615
Peak-hour factor, PHF	0.86	0.86	0.88	0.88	0.88	0.96	0.96
Adj. Flow (vph)	556	238	2	261	872	777	579
RTOR Reduction (vph)	0	93	0	0	0	0	272
Lane Group Flow (vph)	556	145	0	263	872	777	307
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	27.4	27.4		40.1	40.1	40.1	40.1
Effective Green, g (s)	29.4	29.4		42.1	42.1	42.1	42.1
Actuated g/C Ratio	0.37	0.37		0.53	0.53	0.53	0.53
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	645	577		151	1006	972	855
v/s Ratio Prot	c0.32	0.09			0.46	0.42	
v/s Ratio Perm				c0.92			0.19
v/c Ratio	0.86	0.25		1.74	0.87	0.80	0.36
Uniform Delay, d1	23.2	17.4		18.7	16.3	15.3	10.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4	0.2		359.7	8.0	4.7	0.3
Delay (s)	34.6	17.6		378.4	24.2	19.9	11.1
Level of Service	C	B		F	C	B	B
Approach Delay (s/veh)	29.5				106.3	16.2	
Approach LOS	C				F	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	23.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	156	198	978	855	16
Future Vol, veh/h	21	156	198	978	855	16
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	92	92
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	24	181	202	998	929	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2331	929	947	0	-	0
Stage 1	929	-	-	-	-	-
Stage 2	1402	-	-	-	-	-
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	41	327	733	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	30	327	733	-	-	-
Mov Cap-2 Maneuver	30	-	-	-	-	-
Stage 1	281	-	-	-	-	-
Stage 2	230	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	260.58	1.98	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	733	-	150	-	-
HCM Lane V/C Ratio	0.276	-	1.372	-	-
HCM Ctrl Dly (s/v)	11.8	-	260.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.1	-	12.9	-	-

Intersection	
Int Delay, s/veh	88.8

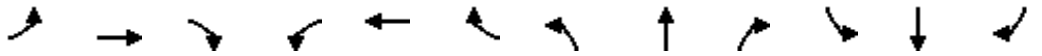
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	532	90	140	499	148	111	0	147	0	0	113
Future Vol, veh/h	58	532	90	140	499	148	111	0	147	0	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	0	-	50	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	87	87	87	76	76	76	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	2	2	2
Mvmt Flow	61	560	95	161	574	170	146	0	193	0	0	126

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	744	0	0	655	0	0	1625	-	327	-	-	574
Stage 1	-	-	-	-	-	-	729	-	-	-	-	-
Stage 2	-	-	-	-	-	-	895	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	-	6.9	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	-	3.3	-	-	3.319
Pot Cap-1 Maneuver	873	-	-	942	-	-	~ 76	0	674	0	0	518
Stage 1	-	-	-	-	-	-	385	0	-	0	0	-
Stage 2	-	-	-	-	-	-	338	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	873	-	-	942	-	-	~ 44	-	674	-	-	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 44	-	-	-	-	-
Stage 1	-	-	-	-	-	-	358	-	-	-	-	-
Stage 2	-	-	-	-	-	-	212	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.8	1.71	$ 534.18	14.17
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	44	674	873	-	-	942	-	-	518
HCM Lane V/C Ratio	3.296	0.287	0.07	-	-	0.171	-	-	0.243
HCM Ctrl Dly (s/v)	$ 1225.1	12.5	9.4	-	-	9.6	-	-	14.2
HCM Lane LOS	F	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	16.1	1.2	0.2	-	-	0.6	-	-	0.9

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

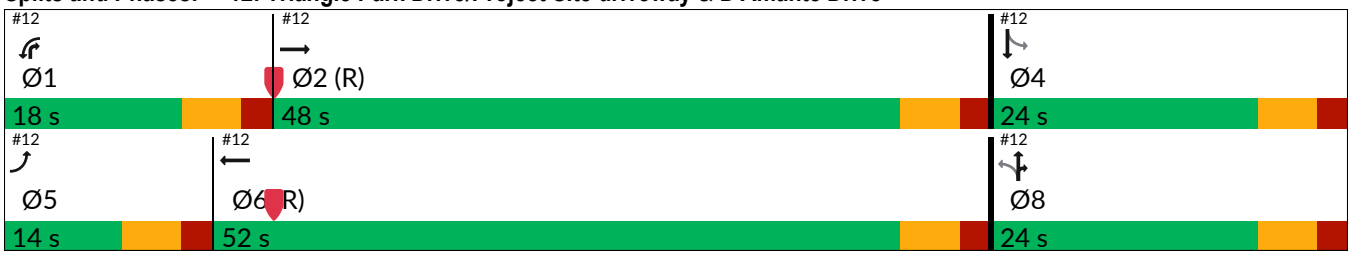


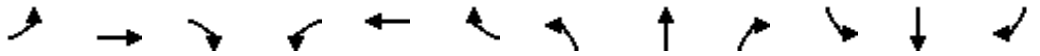
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Future Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.962				0.850		0.870	
Flt Protected	0.950			0.950				0.961		0.950		
Satd. Flow (prot)	1805	3333	0	1728	1810	0	0	1826	1615	1770	1621	0
Flt Permitted	0.950			0.950				0.522		0.613		
Satd. Flow (perm)	1805	3333	0	1728	1810	0	0	992	1615	1142	1621	0
Satd. Flow (RTOR)		106			29				57		186	
Adj. Flow (vph)	189	411	178	91	522	174	123	28	57	282	29	186
Lane Group Flow (vph)	189	589	0	91	696	0	0	151	57	282	215	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	14.0	48.0		18.0	52.0		24.0	24.0		24.0	24.0	
Total Split (%)	15.6%	53.3%		20.0%	57.8%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	8.0	42.0		12.0	46.0		18.0	18.0		18.0	18.0	
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)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.95	0.36		0.41	0.81			0.53	0.07	0.86	0.36	
Control Delay (s/veh)	92.6	10.2		41.0	27.2			38.1	4.8	59.4	8.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay (s/veh)	92.6	10.2		41.0	27.2			38.1	4.8	59.4	8.5	
Queue Length 50th (ft)	118	42		49	304			74	0	158	13	
Queue Length 95th (ft)	#243	72		93	409			#168	22	#345	72	
Internal Link Dist (ft)		981			380			958			623	
Turn Bay Length (ft)	50			250					170			
Base Capacity (vph)	200	1700		268	978			285	817	329	599	
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	0.95	0.35		0.34	0.71			0.53	0.07	0.86	0.36	

Intersection Summary
Cycle Length: 90

Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive

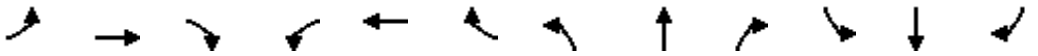




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Future Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.96			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3331		1728	1811			1826	1615	1770	1621	
Flt Permitted	0.95	1.00		0.95	1.00			0.52	1.00	0.61	1.00	
Satd. Flow (perm)	1805	3331		1728	1811			991	1615	1142	1621	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	189	411	178	91	522	174	123	28	57	282	29	186
RTOR Reduction (vph)	0	57	0	0	15	0	0	0	31	0	132	0
Lane Group Flow (vph)	189	532	0	91	681	0	0	151	26	282	83	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Actuated Green, G (s)	8.0	39.7		8.4	40.1			23.9	38.3	23.9	23.9	
Effective Green, g (s)	10.0	41.7		10.4	42.1			25.9	40.3	25.9	25.9	
Actuated g/C Ratio	0.11	0.46		0.12	0.47			0.29	0.45	0.29	0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	200	1543		199	847			285	723	328	466	
v/s Ratio Prot	c0.10	0.16		0.05	c0.38				0.02		0.05	
v/s Ratio Perm								0.15		c0.25		
v/c Ratio	0.95	0.34		0.46	0.80			0.53	0.04	0.86	0.18	
Uniform Delay, d1	39.7	15.4		37.2	20.4			26.9	13.9	30.3	24.1	
Progression Factor	1.04	0.79		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	46.0	0.6		1.7	8.0			1.8	0.0	19.5	0.2	
Delay (s)	87.4	12.8		38.8	28.4			28.7	14.0	49.9	24.2	
Level of Service	F	B		D	C			C	B	D	C	
Approach Delay (s/veh)		30.9			29.6			24.7			38.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



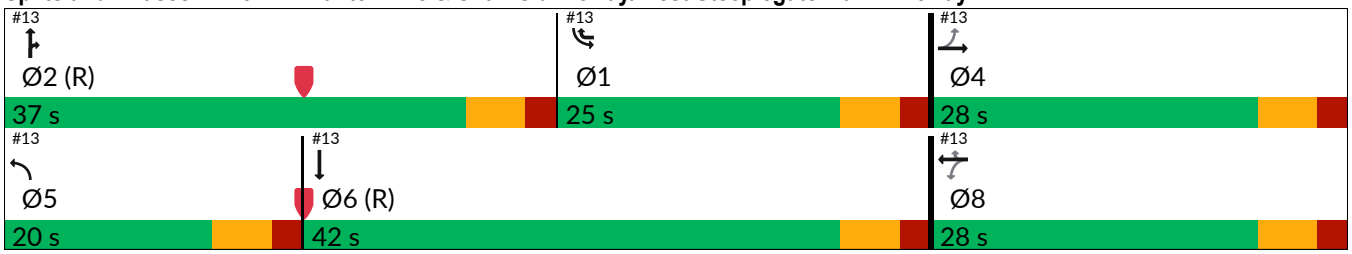
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Future Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.947				0.850			0.850		0.988	
Flt Protected		0.969			0.950		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1829	1636	1805	3490	1561	3385	3448	0
Flt Permitted		0.656			0.636		0.950			0.950		
Satd. Flow (perm)	0	2243	0	0	1224	1636	1805	3490	1561	3385	3448	0
Satd. Flow (RTOR)		182				109			126		13	
Adj. Flow (vph)	118	0	65	179	0	180	52	792	134	219	657	58
Lane Group Flow (vph)	0	183	0	0	179	180	52	792	134	219	715	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0		28.0	28.0	25.0	20.0	37.0	37.0	25.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%	27.8%	22.2%	41.1%	41.1%	27.8%	46.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0	19.0	14.0	31.0	31.0	19.0	36.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.28			0.65	0.24	0.26	0.46	0.16	0.43	0.35	
Control Delay (s/veh)		5.2			42.3	6.6	34.9	18.6	7.0	37.3	12.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay (s/veh)		5.2			42.3	6.6	34.9	18.6	7.0	37.3	13.0	
Queue Length 50th (ft)		0			94	24	28	178	17	59	117	
Queue Length 95th (ft)		17			149	52	m45	281	m43	90	201	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130		130	150		
Base Capacity (vph)		747			336	747	320	1720	833	789	2025	
Starvation Cap Reductn		0			0	0	0	0	0	0	566	
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		0.24			0.53	0.24	0.16	0.46	0.16	0.28	0.49	

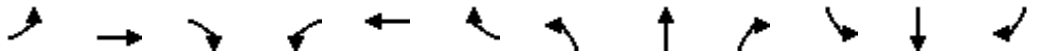
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Future Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3311			1829	1636	1805	3490	1561	3385	3447	
Flt Permitted		0.66			0.64	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2241			1225	1636	1805	3490	1561	3385	3447	
Peak-hour factor, PHF	0.82	0.82	0.82	0.90	0.90	0.90	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	118	0	65	179	0	180	52	792	134	219	657	58
RTOR Reduction (vph)	0	141	0	0	0	65	0	0	67	0	6	0
Lane Group Flow (vph)	0	42	0	0	179	115	52	792	67	219	709	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		18.2			18.2	32.1	5.6	39.9	39.9	13.9	48.2	
Effective Green, g (s)		20.2			20.2	36.1	7.6	41.9	41.9	15.9	50.2	
Actuated g/C Ratio		0.22			0.22	0.40	0.08	0.47	0.47	0.18	0.56	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		502			274	728	152	1624	726	598	1922	
v/s Ratio Prot						0.03	0.03	c0.23	0.04	0.06	c0.21	
v/s Ratio Perm		0.02			c0.15	0.04						
v/c Ratio		0.08			0.65	0.16	0.34	0.49	0.09	0.37	0.37	
Uniform Delay, d1		27.6			31.7	17.2	38.8	16.6	13.4	32.6	11.1	
Progression Factor		1.00			1.00	1.00	0.89	1.07	1.69	1.00	1.00	
Incremental Delay, d2		0.1			5.5	0.1	1.2	0.9	0.2	0.4	0.5	
Delay (s)		27.7			37.2	17.3	35.9	18.8	22.9	33.0	11.6	
Level of Service		C			D	B	D	B	C	C	B	
Approach Delay (s/veh)		27.7			27.2			20.3			16.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

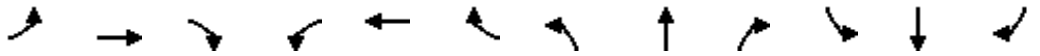
Intersection	
Int Delay, s/veh	0.9

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	3	53	1482	127	37	1626
Future Vol, veh/h	3	53	1482	127	37	1626
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	89	89	93	93	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	3	60	1594	137	38	1676

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2576	865	0	0	1730	0
Stage 1	1662	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	22	301	-	-	365	-
Stage 1	143	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	19	301	-	-	365	-
Mov Cap-2 Maneuver	19	-	-	-	-	-
Stage 1	128	-	-	-	-	-
Stage 2	356	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	38.38	0	0.36
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	169	365	-
HCM Lane V/C Ratio	-	-	0.372	0.104	-
HCM Ctrl Dly (s/v)	-	-	38.4	16	-
HCM Lane LOS	-	-	E	C	-
HCM 95th %tile Q(veh)	-	-	1.6	0.3	-



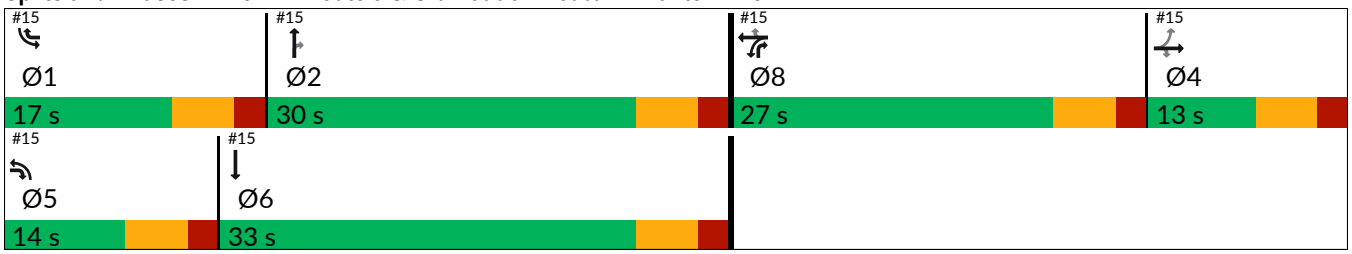
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Future Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.993	
Flt Protected		0.991		0.950	0.960		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1658	1733	1507	1787	3455	1599	3502	3465	0
Flt Permitted		0.829		0.950	0.960		0.950			0.950		
Satd. Flow (perm)	0	1523	1561	1658	1733	1507	1787	3455	1599	3502	3465	0
Satd. Flow (RTOR)			113			169			329		6	
Adj. Flow (vph)	14	67	114	789	75	169	87	852	711	192	936	43
Lane Group Flow (vph)	0	81	114	434	430	169	87	852	711	192	979	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	14.0	27.0	27.0	17.0	14.0	30.0	27.0	17.0	33.0	
Total Split (%)	14.9%	14.9%	16.1%	31.0%	31.0%	19.5%	16.1%	34.5%	31.0%	19.5%	37.9%	
Maximum Green (s)	7.0	7.0	8.0	21.0	21.0	11.0	8.0	24.0	21.0	11.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.50	0.25	0.92	0.87	0.22	0.42	0.80	0.62	0.39	0.76	
Control Delay (s/veh)		48.2	7.0	58.8	51.0	2.3	42.6	34.0	7.8	35.9	29.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		48.2	7.0	58.8	51.0	2.3	42.6	34.0	7.8	35.9	29.8	
Queue Length 50th (ft)		43	0	249	242	0	45	225	106	50	257	
Queue Length 95th (ft)		81	32	#449	#430	22	92	#308	221	80	#335	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		169	464	471	492	780	220	1133	1142	562	1281	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.48	0.25	0.92	0.87	0.22	0.40	0.75	0.62	0.34	0.76	

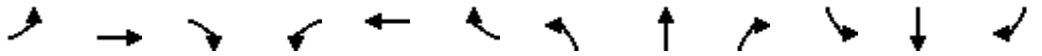
Intersection Summary

Cycle Length: 87
Actuated Cycle Length: 82.3
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

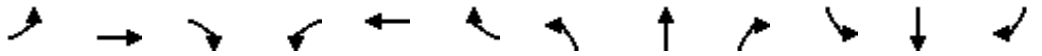




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Future Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1821	1561	1658	1733	1507	1787	3455	1599	3502	3467	
Flt Permitted		0.83	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1523	1561	1658	1733	1507	1787	3455	1599	3502	3467	
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	14	67	114	789	75	169	87	852	711	192	936	43
RTOR Reduction (vph)	0	0	93	0	0	100	0	0	135	0	4	0
Lane Group Flow (vph)	0	81	21	434	430	69	87	852	576	192	975	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.3	11.4	21.3	21.3	30.8	6.1	24.9	46.2	9.5	28.3	
Effective Green, g (s)		7.3	15.4	23.3	23.3	34.8	8.1	26.9	50.2	11.5	30.3	
Actuated g/C Ratio		0.09	0.18	0.27	0.27	0.41	0.10	0.32	0.59	0.14	0.36	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		130	356	454	475	616	170	1093	1019	473	1235	
v/s Ratio Prot			0.01	c0.26	0.25	0.02	c0.05	0.25	0.15	0.05	c0.28	
v/s Ratio Perm		c0.05	0.01			0.03			0.21			
v/c Ratio		0.62	0.06	0.96	0.91	0.11	0.51	0.78	0.57	0.41	0.79	
Uniform Delay, d1		37.5	28.8	30.3	29.8	15.5	36.6	26.4	10.7	33.6	24.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		9.0	0.1	30.9	20.5	0.1	2.6	3.6	0.7	0.6	3.4	
Delay (s)		46.5	28.9	61.3	50.3	15.6	39.2	29.9	11.4	34.2	27.9	
Level of Service		D	C	E	D	B	D	C	B	C	C	
Approach Delay (s/veh)		36.2			49.2			22.4			29.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



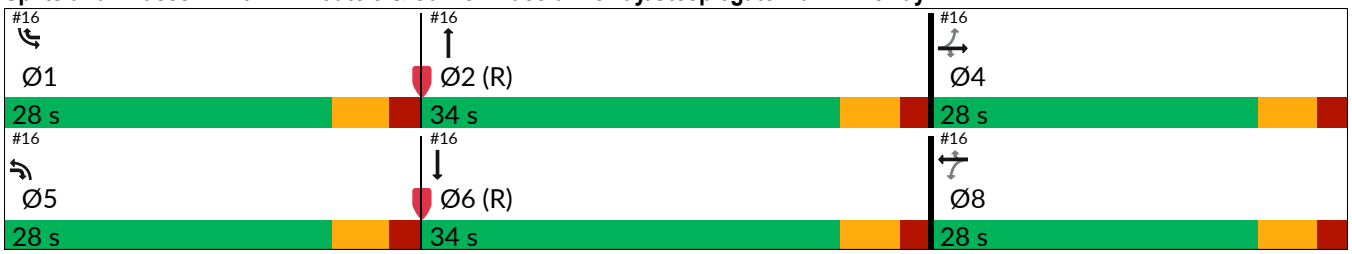
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	95	702	164	354	751	78
Future Volume (vph)	92	0	109	179	0	340	95	702	164	354	751	78
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.972			0.986	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3358	0	1787	3407	0
Flt Permitted		0.482			0.684		0.950			0.950		
Satd. Flow (perm)	0	916	1615	0	1317	1636	1847	3358	0	1787	3407	0
Satd. Flow (RTOR)			36			49		34			13	
Adj. Flow (vph)	102	0	121	199	0	378	104	771	180	402	853	89
Lane Group Flow (vph)	0	102	121	0	199	378	104	951	0	402	942	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0	34.0		28.0	34.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	37.8%		31.1%	37.8%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	28.0		22.0	28.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.51	0.18		0.69	0.42	0.41	0.74		0.83	0.54	
Control Delay (s/veh)		39.0	11.0		44.4	11.7	39.5	28.9		43.6	11.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		39.0	11.0		44.4	11.7	39.5	28.9		43.6	11.8	
Queue Length 50th (ft)		51	29		105	94	55	253		181	159	
Queue Length 95th (ft)		97	54		173	154	100	#336		#350	295	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		244	874		351	908	492	1287		496	1741	
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		0.42	0.14		0.57	0.42	0.21	0.74		0.81	0.54	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	95	702	164	354	751	78
Future Volume (vph)	92	0	109	179	0	340	95	702	164	354	751	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		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)		1805	1615		1829	1636	1847	3357		1787	3406	
Flt Permitted		0.48	1.00		0.68	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		915	1615		1316	1636	1847	3357		1787	3406	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	102	0	121	199	0	378	104	771	180	402	853	89
RTOR Reduction (vph)	0	0	23	0	0	25	0	21	0	0	6	0
Lane Group Flow (vph)	0	102	98	0	199	353	104	930	0	402	936	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		17.8	28.2		17.8	40.1	10.4	31.9		22.3	43.8	
Effective Green, g (s)		19.8	32.2		19.8	44.1	12.4	33.9		24.3	45.8	
Actuated g/C Ratio		0.22	0.36		0.22	0.49	0.14	0.38		0.27	0.51	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		201	649		289	874	254	1264		482	1733	
v/s Ratio Prot			0.02			0.11	0.06	c0.28		c0.22	0.27	
v/s Ratio Perm		0.11	0.04		c0.15	0.11						
v/c Ratio		0.51	0.15		0.69	0.40	0.41	0.74		0.83	0.54	
Uniform Delay, d1		30.8	19.6		32.3	14.6	35.5	24.2		31.0	15.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.92	0.66	
Incremental Delay, d2		2.0	0.1		6.7	0.3	1.1	3.8		10.4	1.1	
Delay (s)		32.8	19.7		38.9	14.9	36.5	28.0		39.0	10.9	
Level of Service		C	B		D	B	D	C		D	B	
Approach Delay (s/veh)		25.7			23.2			28.9			19.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

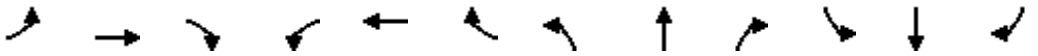
Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	45	1093	37	50	1140
Future Vol, veh/h	43	45	1093	37	50	1140
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	93	93	90	90
Heavy Vehicles, %	2	2	1	1	0	0
Mvmt Flow	48	50	1175	40	56	1267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1940	608	0	0	1215	0
Stage 1	1195	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.1	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	57	439	-	-	581	-
Stage 1	249	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	52	439	-	-	581	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	226	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	185.04	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	94	581	-
HCM Lane V/C Ratio	-	-	1.036	0.096	-
HCM Ctrl Dly (s/v)	-	-	185	11.8	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	6.3	0.3	-



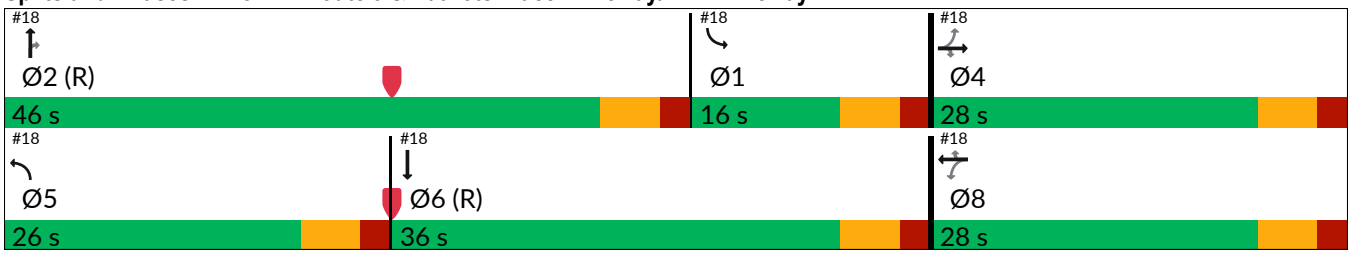
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Future Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.994	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3434	0
Flt Permitted		0.655			0.692		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1315	1615	1805	3490	1561	1787	3434	0
Satd. Flow (RTOR)			182			182			109		5	
Adj. Flow (vph)	57	17	150	131	13	27	101	1113	66	23	1115	48
Lane Group Flow (vph)	0	74	150	0	144	27	101	1113	66	23	1163	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	46.0	46.0	16.0	36.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	28.9%	51.1%	51.1%	17.8%	40.0%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	20.0	40.0	40.0	10.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.31	0.33		0.58	0.06	0.41	0.49	0.06	0.12	0.60	
Control Delay (s/veh)		33.3	4.6		41.8	0.3	50.8	7.6	1.0	33.9	13.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		33.3	4.6		41.8	0.3	50.8	7.6	1.0	33.9	13.7	
Queue Length 50th (ft)		37	0		75	0	60	37	0	10	134	
Queue Length 95th (ft)		65	22		94	0	m91	185	m3	m17	250	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		331	564		350	564	441	2270	1053	238	1951	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22	0.27		0.41	0.05	0.23	0.49	0.06	0.10	0.60	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 47 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

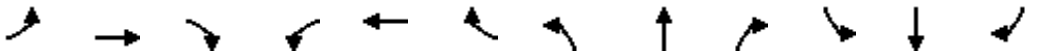
Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Future Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3434	
Flt Permitted		0.65	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1316	1615	1805	3490	1561	1787	3434	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	57	17	150	131	13	27	101	1113	66	23	1115	48
RTOR Reduction (vph)	0	0	122	0	0	22	0	0	26	0	2	0
Lane Group Flow (vph)	0	74	28	0	144	5	101	1113	40	23	1161	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.0	15.0		15.0	15.0	9.1	53.0	53.0	4.0	47.9	
Effective Green, g (s)		17.0	17.0		17.0	17.0	11.1	55.0	55.0	6.0	49.9	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.12	0.61	0.61	0.07	0.55	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		234	305		248	305	222	2132	953	119	1903	
v/s Ratio Prot							0.06	c0.32		0.01	c0.34	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.03			
v/c Ratio		0.32	0.09		0.58	0.02	0.45	0.52	0.04	0.19	0.61	
Uniform Delay, d1		31.5	30.1		33.3	29.7	36.6	10.0	7.0	39.7	13.5	
Progression Factor		1.00	1.00		1.00	1.00	1.34	0.65	1.00	0.92	0.81	
Incremental Delay, d2		0.8	0.1		3.4	0.0	1.2	0.8	0.1	0.7	1.3	
Delay (s)		32.3	30.3		36.7	29.7	50.5	7.2	7.0	37.4	12.2	
Level of Service		C	C		D	C	D	A	A	D	B	
Approach Delay (s/veh)		30.9			35.6			10.6			12.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



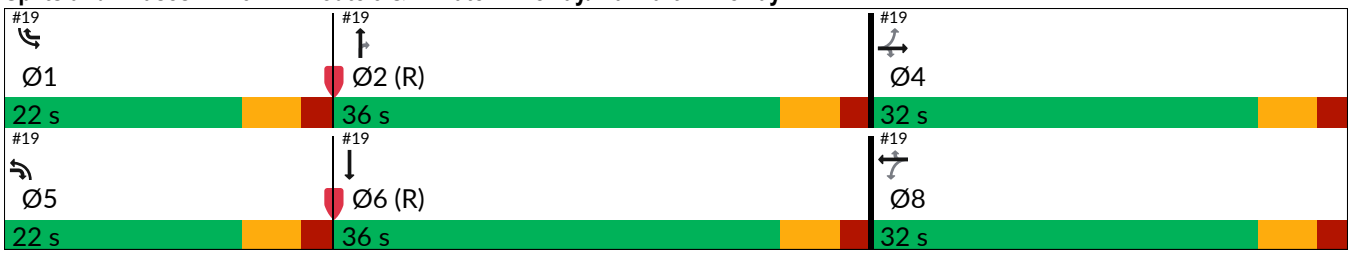
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Future Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1755	1546	1787	3455	1599	1685	3458	0
Flt Permitted		0.553			0.694		0.950			0.950		
Satd. Flow (perm)	0	1051	1615	0	1262	1546	1787	3455	1599	1685	3458	0
Satd. Flow (RTOR)			36			43			109		8	
Adj. Flow (vph)	91	16	108	112	42	185	84	856	24	162	955	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	856	24	162	1013	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	32.0	32.0	22.0	32.0	32.0	22.0	22.0	36.0	36.0	22.0	36.0	
Total Split (%)	35.6%	35.6%	24.4%	35.6%	35.6%	24.4%	24.4%	40.0%	40.0%	24.4%	40.0%	
Maximum Green (s)	26.0	26.0	16.0	26.0	26.0	16.0	16.0	30.0	30.0	16.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.52	0.17		0.62	0.28	0.37	0.50	0.03	0.55	0.54	
Control Delay (s/veh)		40.1	11.6		43.2	12.4	50.3	9.6	0.1	40.2	16.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		40.1	11.6		43.2	12.4	50.3	9.6	0.1	40.2	16.2	
Queue Length 50th (ft)		55	27		81	51	51	116	0	85	183	
Queue Length 95th (ft)		84	41		122	66	101	171	m1	136	302	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		326	733		392	716	357	1706	845	348	1874	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.33	0.15		0.39	0.26	0.24	0.50	0.03	0.47	0.54	

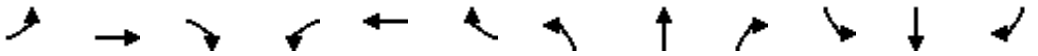
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Future Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1755	1546	1787	3455	1599	1685	3460	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1050	1615		1263	1546	1787	3455	1599	1685	3460	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	91	16	108	112	42	185	84	856	24	162	955	58
RTOR Reduction (vph)	0	0	24	0	0	27	0	0	12	0	4	0
Lane Group Flow (vph)	0	107	84	0	154	158	84	856	12	162	1009	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.7	25.3		15.7	29.5	9.6	42.5	42.5	13.8	46.7	
Effective Green, g (s)		17.7	29.3		17.7	33.5	11.6	44.5	44.5	15.8	48.7	
Actuated g/C Ratio		0.20	0.33		0.20	0.37	0.13	0.49	0.49	0.18	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		206	597		248	644	230	1708	790	295	1872	
v/s Ratio Prot			0.02			0.04	0.05	0.25		c0.10	c0.29	
v/s Ratio Perm		0.10	0.03		c0.12	0.06			0.01			
v/c Ratio		0.52	0.14		0.62	0.25	0.37	0.50	0.02	0.55	0.54	
Uniform Delay, d1		32.3	21.4		33.1	19.5	35.8	15.3	11.6	33.9	13.4	
Progression Factor		1.00	1.00		1.00	1.00	1.32	0.50	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.1		4.8	0.2	0.9	0.9	0.0	2.1	1.1	
Delay (s)		34.6	21.6		37.8	19.7	48.1	8.5	11.6	35.9	14.5	
Level of Service		C	C		D	B	D	A	B	D	B	
Approach Delay (s/veh)		28.0			28.0			12.1			17.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

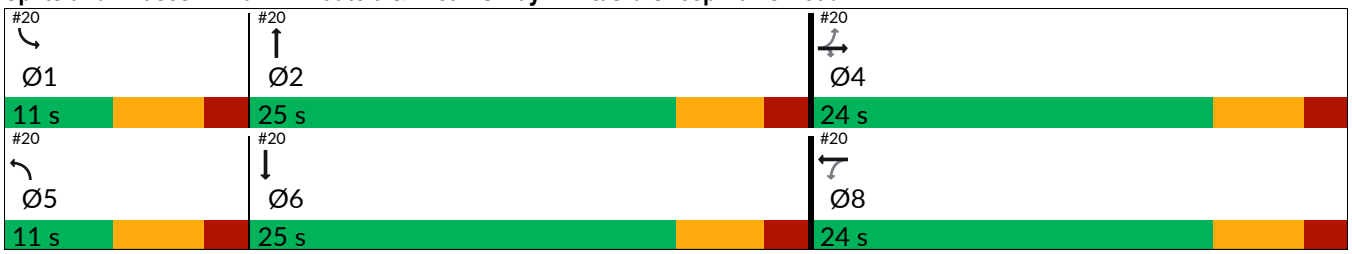
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	1011	0	1	1059	199
Future Volume (vph)	171	0	11	0	0	0	13	1011	0	1	1059	199
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850								0.976	
Flt Protected		0.950					0.950			0.950		
Satd. Flow (prot)	0	1865	1669	0	2153	0	1668	3455	0	1805	3406	0
Flt Permitted		0.757					0.950			0.950		
Satd. Flow (perm)	0	1486	1669	0	2153	0	1668	3455	0	1805	3406	0
Satd. Flow (RTOR)			164								41	
Adj. Flow (vph)	190	0	12	0	0	0	14	1042	0	1	1139	221
Lane Group Flow (vph)	0	190	12	0	0	0	14	1042	0	1	1360	0
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0		11.0	25.0		11.0	25.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		18.3%	41.7%		18.3%	41.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		5.0	19.0		5.0	19.0	
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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
v/c Ratio		0.44	0.02				0.05	0.52		0.00	0.69	
Control Delay (s/veh)		16.9	0.1				20.2	11.9		20.0	15.0	
Queue Delay		0.0	0.0				0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.9	0.1				20.2	11.9		20.0	15.0	
Queue Length 50th (ft)		35	0				3	79		0	114	
Queue Length 95th (ft)		100	0				19	#290		4	#425	
Internal Link Dist (ft)		54			538			1735			1472	
Turn Bay Length (ft)							160			200		
Base Capacity (vph)		677	850				266	1986		288	1975	
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		0.28	0.01				0.05	0.52		0.00	0.69	

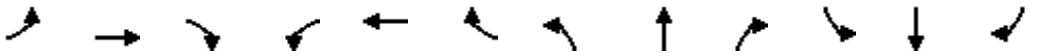
Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 44.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road

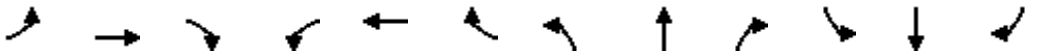




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	1011	0	1	1059	199
Future Volume (vph)	171	0	11	0	0	0	13	1011	0	1	1059	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	11	11
Total Lost time (s)		4.0	4.0				4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1865	1669				1668	3455		1805	3405	
Flt Permitted		0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1487	1669				1668	3455		1805	3405	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.90	0.97	0.97	0.93	0.93	0.90
Adj. Flow (vph)	190	0	12	0	0	0	14	1042	0	1	1139	221
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	21	0
Lane Group Flow (vph)	0	190	3	0	0	0	14	1042	0	1	1339	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		9.4	9.4				0.7	22.9		0.7	22.9	
Effective Green, g (s)		11.4	11.4				2.7	24.9		2.7	24.9	
Actuated g/C Ratio		0.22	0.22				0.05	0.49		0.05	0.49	
Clearance Time (s)		6.0	6.0				6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0				3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		332	373				88	1686		95	1662	
v/s Ratio Prot							c0.01	0.30		0.00	c0.39	
v/s Ratio Perm		c0.13	0.00									
v/c Ratio		0.57	0.01				0.16	0.62		0.01	0.81	
Uniform Delay, d1		17.6	15.4				23.1	9.6		22.9	11.0	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4	0.0				0.8	0.7		0.0	3.0	
Delay (s)		20.0	15.4				23.9	10.2		22.9	14.0	
Level of Service		C	B				C	B		C	B	
Approach Delay (s/veh)		19.7			0.0			10.4			14.0	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

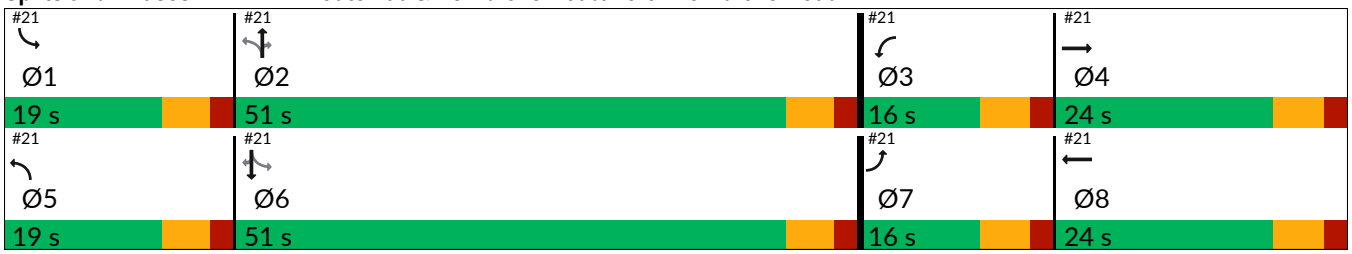


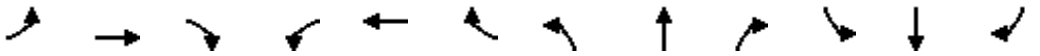
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Future Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.895			0.887				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1700	0	1770	1487	0	1847	1881	1599	1847	1881	1546
Flt Permitted	0.950			0.950			0.082			0.080		
Satd. Flow (perm)	1805	1700	0	1770	1487	0	159	1881	1599	156	1881	1546
Satd. Flow (RTOR)		68			87				149			149
Adj. Flow (vph)	195	29	68	9	29	87	49	913	16	70	861	160
Lane Group Flow (vph)	195	97	0	9	116	0	49	913	16	70	861	160
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.82	0.20		0.06	0.49		0.20	0.94	0.02	0.27	0.84	0.18
Control Delay (s/veh)	68.6	13.8		41.9	21.0		9.0	41.8	0.1	9.9	29.1	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.6	13.8		41.9	21.0		9.0	41.8	0.1	9.9	29.1	3.5
Queue Length 50th (ft)	114	13		5	16		10	498	0	14	442	3
Queue Length 95th (ft)	#212	49		20	61		26	#845	0	34	#780	37
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	237	497		233	394		377	970	897	376	1027	912
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.20		0.04	0.29		0.13	0.94	0.02	0.19	0.84	0.18

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 91.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

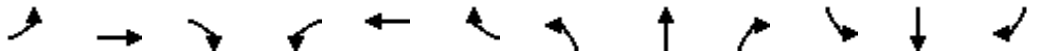




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Future Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1700		1770	1488		1847	1881	1599	1847	1881	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1805	1700		1770	1488		160	1881	1599	155	1881	1546
Peak-hour factor, PHF	0.80	0.80	0.80	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	195	29	68	9	29	87	49	913	16	70	861	160
RTOR Reduction (vph)	0	52	0	0	74	0	0	0	8	0	0	74
Lane Group Flow (vph)	195	45	0	9	42	0	49	913	8	70	861	86
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	21.7		1.3	12.9		50.5	46.5	46.5	53.7	48.1	48.1
Effective Green, g (s)	12.1	23.7		3.3	14.9		54.5	48.5	48.5	57.7	50.1	50.1
Actuated g/C Ratio	0.12	0.24		0.03	0.15		0.55	0.49	0.49	0.58	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	406		58	223		190	920	782	220	950	781
v/s Ratio Prot	c0.11	0.03		0.01	c0.03		0.02	c0.49		c0.02	0.46	
v/s Ratio Perm							0.13		0.00	0.16		0.06
v/c Ratio	0.89	0.11		0.16	0.19		0.26	0.99	0.01	0.32	0.91	0.11
Uniform Delay, d1	42.8	29.5		46.5	36.8		18.6	25.1	13.0	20.1	22.4	12.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.8	0.1		1.2	0.4		0.7	27.7	0.0	0.8	12.0	0.1
Delay (s)	74.6	29.6		47.8	37.2		19.3	52.8	13.0	20.9	34.3	12.9
Level of Service	E	C		D	D		B	D	B	C	C	B
Approach Delay (s/veh)		59.7			38.0			50.4			30.3	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Future Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1589	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.752			0.724			0.153					
Satd. Flow (perm)	1429	1589	0	1376	2072	0	281	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		46			2				66			316
Adj. Flow (vph)	361	5	46	2	6	2	27	603	1	0	644	316
Lane Group Flow (vph)	361	51	0	2	8	0	27	603	1	0	644	316
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.73	0.09		0.00	0.01		0.07	0.65	0.00		0.85	0.38
Control Delay (s/veh)	29.1	6.7		15.0	13.0		6.4	13.4	0.0		30.5	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	29.1	6.7		15.0	13.0		6.4	13.4	0.0		30.5	3.6
Queue Length 50th (ft)	85	1		0	1		4	125	0		140	0
Queue Length 95th (ft)	#226	19		3	5		12	208	0		#399	38
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	493	578		474	715		477	1302	1164		760	830
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.73	0.09		0.00	0.01		0.06	0.46	0.00		0.85	0.38

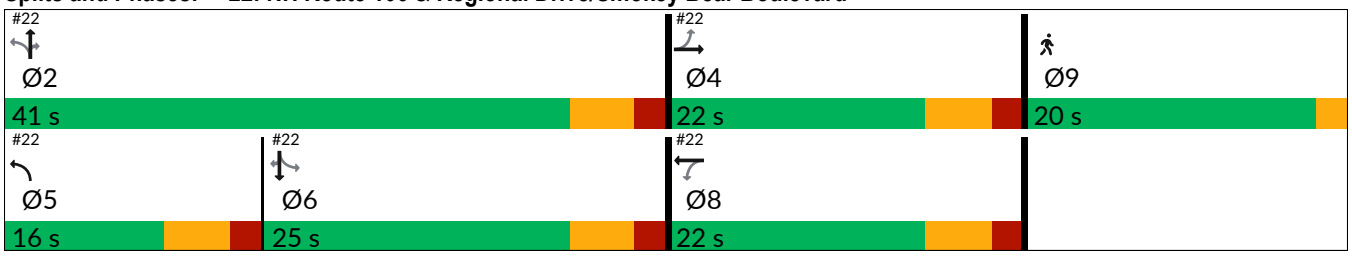
Intersection Summary
Cycle Length: 83

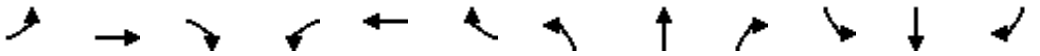
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 52.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

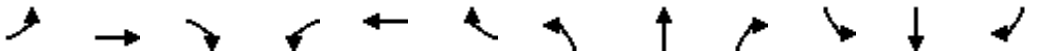




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Future Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1588		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.75	1.00		0.72	1.00		0.15	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1430	1588		1375	2073		281	1837	1615		1818	1546
Peak-hour factor, PHF	0.83	0.83	0.83	0.50	0.50	0.50	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	361	5	46	2	6	2	27	603	1	0	644	316
RTOR Reduction (vph)	0	31	0	0	1	0	0	0	0	0	0	193
Lane Group Flow (vph)	361	20	0	2	7	0	27	603	1	0	644	123
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		28.4	28.4	28.4		20.1	20.1
Effective Green, g (s)	18.2	18.2		18.2	18.2		30.4	30.4	30.4		22.1	22.1
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.54	0.54	0.54		0.39	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	459	510		442	666		262	986	867		709	603
v/s Ratio Prot		0.01			0.00		0.01	c0.33			c0.35	
v/s Ratio Perm	c0.25			0.00			0.05		0.00			0.08
v/c Ratio	0.79	0.04		0.00	0.01		0.10	0.61	0.00		0.91	0.20
Uniform Delay, d1	17.4	13.2		13.0	13.1		9.5	9.0	6.1		16.3	11.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.6	0.0		0.0	0.0		0.2	1.1	0.0		15.4	0.2
Delay (s)	26.1	13.2		13.0	13.1		9.7	10.2	6.1		31.7	11.6
Level of Service	C	B		B	B		A	B	A		C	B
Approach Delay (s/veh)		24.5			13.1			10.1			25.1	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

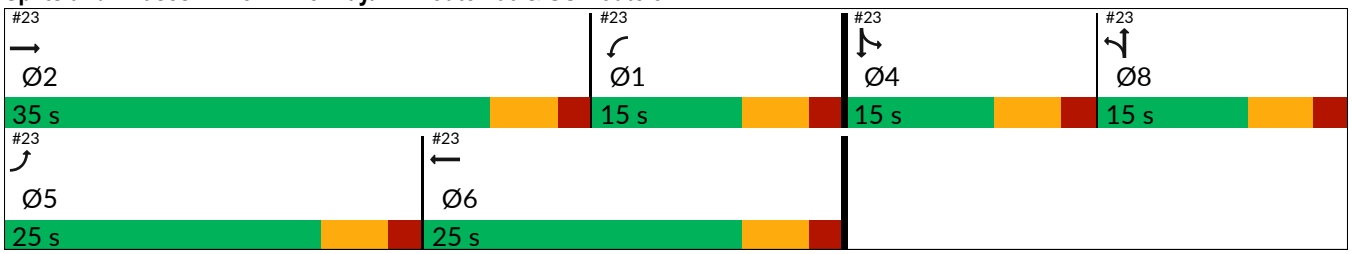


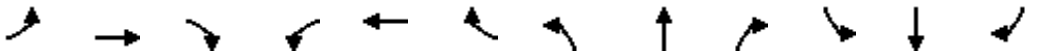
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	443	0	0	416	388	1	3	0	450	1	270
Future Volume (vph)	172	443	0	0	416	388	1	3	0	450	1	270
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt						0.850						0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Satd. Flow (RTOR)						417						368
Adj. Flow (vph)	207	534	0	0	447	417	4	12	0	577	1	346
Lane Group Flow (vph)	207	534	0	0	447	417	4	12	0	577	1	346
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		15.0	15.0	
Total Split (%)	31.3%	43.8%		18.8%	31.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.46	0.25			0.47	0.24	0.01	0.04		0.84	0.00	0.22
Control Delay (s/veh)	22.6	5.6			19.8	0.3	27.0	26.7		38.9	25.0	0.3
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	22.6	5.6			19.8	0.3	27.0	26.7		38.9	25.0	0.3
Queue Length 50th (ft)	51	30			57	0	0	3		84	0	0
Queue Length 95th (ft)	133	78			141	0	1	6		#226	4	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350					200	250			250		200
Base Capacity (vph)	675	2244			1350	1759	693	376		686	372	1599
Starvation Cap Reductn	0	0			0	0	0	0		0	0	0
Spillback Cap Reductn	0	0			0	0	0	0		0	0	0
Storage Cap Reductn	0	0			0	0	0	0		0	0	0
Reduced v/c Ratio	0.31	0.24			0.33	0.24	0.01	0.03		0.84	0.00	0.22

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 56
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

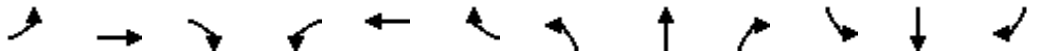




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	443	0	0	416	388	1	3	0	450	1	270
Future Volume (vph)	172	443	0	0	416	388	1	3	0	450	1	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.25	0.25	0.25	0.78	0.78	0.78
Adj. Flow (vph)	207	534	0	0	447	417	4	12	0	577	1	346
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	207	534	0	0	447	417	4	12	0	577	1	346
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.4	32.2			13.8	60.6	1.0	1.0		9.4	9.4	60.6
Effective Green, g (s)	14.4	34.2			15.8	60.6	3.0	3.0		11.4	11.4	60.6
Actuated g/C Ratio	0.24	0.56			0.26	1.00	0.05	0.05		0.19	0.19	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	410	1949			900	1759	167	90		630	342	1599
v/s Ratio Prot	c0.12	0.15			c0.13		0.00	0.01		c0.17	0.00	
v/s Ratio Perm						c0.24						0.22
v/c Ratio	0.50	0.27			0.50	0.24	0.02	0.13		0.92	0.00	0.22
Uniform Delay, d1	20.0	6.8			19.0	0.0	27.4	27.6		24.1	20.0	0.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1			0.4	0.3	0.1	0.7		18.0	0.0	0.3
Delay (s)	21.0	6.9			19.5	0.3	27.5	28.2		42.2	20.0	0.3
Level of Service	C	A			B	A	C	C		D	B	A
Approach Delay (s/veh)		10.8			10.2			28.0			26.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Future Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1787	3333	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.699			0.752	
Satd. Flow (perm)	1787	3333	0	1668	3296	0	0	1328	1830	0	1354	1531
Satd. Flow (RTOR)		1			8				150			551
Adj. Flow (vph)	452	900	4	1	851	77	8	0	2	84	0	551
Lane Group Flow (vph)	452	904	0	1	928	0	0	8	2	0	84	551
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.73	0.36		0.01	0.73			0.05	0.01		0.49	0.82
Control Delay (s/veh)	34.0	4.4		42.0	27.3			38.3	0.0		49.3	14.8
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	34.0	4.4		42.0	27.3			38.3	0.0		49.3	14.8
Queue Length 50th (ft)	233	64		1	245			4	0		49	0
Queue Length 95th (ft)	330	136		6	318			10	0		95	#88
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	686	2637		131	1456			180	377		183	684
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	0.66	0.34		0.01	0.64			0.04	0.01		0.46	0.81

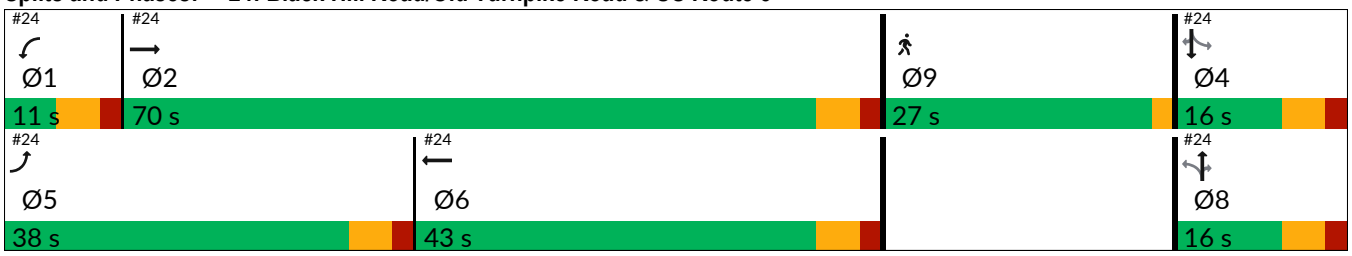
Intersection Summary
Cycle Length: 124

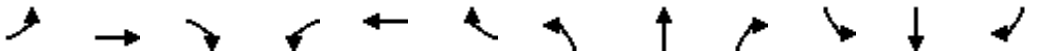
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 89.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

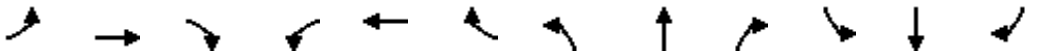




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Future Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3334		1668	3294			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.75	1.00
Satd. Flow (perm)	1787	3334		1668	3294			1328	1830		1355	1531
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.92	0.92	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	452	900	4	1	851	77	8	0	2	84	0	551
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	2	0	0	484
Lane Group Flow (vph)	452	904	0	1	923	0	0	8	0	0	84	67
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	29.3	66.0		0.9	37.6			9.5	9.5		9.5	9.5
Effective Green, g (s)	31.3	68.0		2.9	39.6			11.5	11.5		11.5	11.5
Actuated g/C Ratio	0.33	0.72		0.03	0.42			0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	592	2401		51	1381			161	222		165	186
v/s Ratio Prot	c0.25	0.27		0.00	c0.28							
v/s Ratio Perm								0.01	0.00		c0.06	0.04
v/c Ratio	0.76	0.38		0.02	0.67			0.05	0.00		0.51	0.36
Uniform Delay, d1	28.2	5.1		44.4	22.1			36.6	36.4		38.8	38.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.8	0.1		0.2	1.2			0.1	0.0		2.5	1.2
Delay (s)	34.0	5.2		44.5	23.3			36.8	36.4		41.3	39.3
Level of Service	C	A		D	C			D	D		D	D
Approach Delay (s/veh)		14.8			23.4			36.7			39.5	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1120	3	4	1232	58	1	0	1	38	0	21
Future Volume (vph)	11	1120	3	4	1232	58	1	0	1	38	0	21
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4964	0	1668	3431	0	1805	1615	0	1829	1583	0
Flt Permitted	0.950			0.950			0.738			0.755		
Satd. Flow (perm)	1728	4964	0	1668	3431	0	1402	1615	0	1453	1583	0
Satd. Flow (RTOR)					6			768			179	
Adj. Flow (vph)	12	1217	3	4	1354	64	4	0	4	54	0	30
Lane Group Flow (vph)	12	1220	0	4	1418	0	4	4	0	54	30	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	33.0		37.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.4%	25.8%		28.9%			25.8%	25.8%		25.8%	25.8%	
Maximum Green (s)	6.0	27.0		31.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.11	1.03		0.01	0.59		0.01	0.00		0.19	0.07	
Control Delay (s/veh)	59.2	81.2		39.5	2.1		39.0	0.0		43.5	0.3	
Queue Delay	0.0	1.7		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.2	83.0		39.5	2.3		39.0	0.0		43.5	0.3	
Queue Length 50th (ft)	10	~418		2	20		3	0		38	0	
Queue Length 95th (ft)	31	#515		m3	48		3	0		58	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	108	1187		467	2388		317	959		329	497	
Starvation Cap Reductn	0	0		0	312		0	0		0	0	
Spillback Cap Reductn	0	6		0	0		0	0		9	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	1.03		0.01	0.68		0.01	0.00		0.17	0.06	

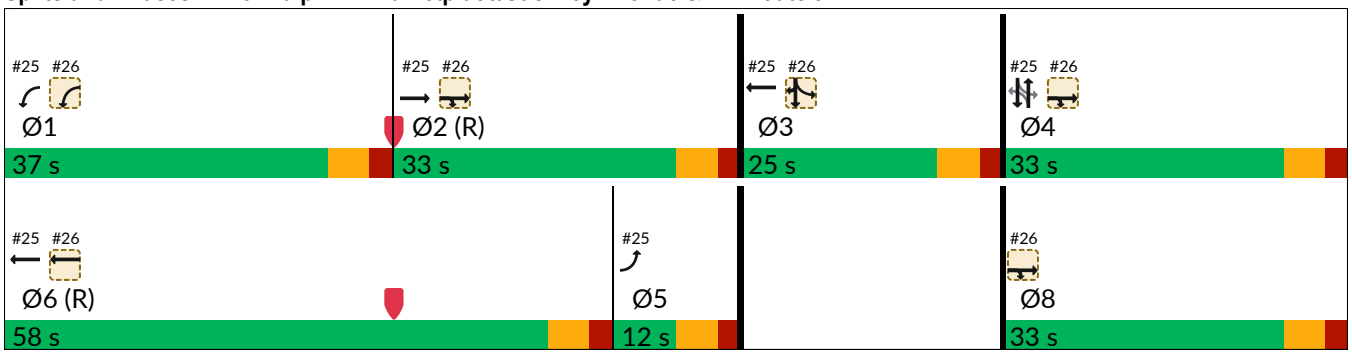
Intersection Summary
Cycle Length: 128

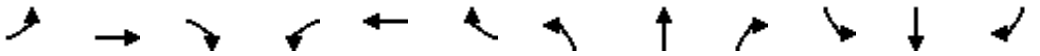
Lane Group	Ø3	Ø6	Ø8
Lane Configurations	[redacted]	[redacted]	[redacted]
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	25.0	58.0	33.0
Total Split (%)	20%	45%	26%
Maximum Green (s)	19.0	52.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

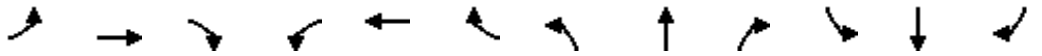




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1120	3	4	1232	58	1	0	1	38	0	21
Future Volume (vph)	11	1120	3	4	1232	58	1	0	1	38	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4963		1668	3432		1805	1615		1829	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.76	1.00	
Satd. Flow (perm)	1728	4963		1668	3432		1401	1615		1454	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.70	0.70	0.70
Adj. Flow (vph)	12	1217	3	4	1354	64	4	0	4	54	0	30
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	24	0
Lane Group Flow (vph)	12	1220	0	4	1416	0	4	1	0	54	6	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	28.7		33.8	79.1		22.5	22.5		22.5	22.5	
Effective Green, g (s)	4.4	30.7		35.8	83.1		24.5	24.5		24.5	24.5	
Actuated g/C Ratio	0.03	0.24		0.28	0.65		0.19	0.19		0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	59	1190		466	2228		268	309		278	302	
v/s Ratio Prot	0.01	c0.25		0.00	c0.41			0.00			0.00	
v/s Ratio Perm							0.00			c0.04		
v/c Ratio	0.20	1.03		0.01	0.64		0.01	0.00		0.19	0.02	
Uniform Delay, d1	60.1	48.7		33.3	13.4		42.0	41.9		43.5	42.0	
Progression Factor	1.00	1.00		1.12	0.15		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	32.7		0.0	0.4		0.0	0.0		0.3	0.0	
Delay (s)	61.8	81.3		37.4	2.5		42.0	41.9		43.8	42.0	
Level of Service	E	F		D	A		D	D		D	D	
Approach Delay (s/veh)		81.2			2.6			41.9			43.2	
Approach LOS		F			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1028	132	759	1110	0	0	0	0	355	0	185
Future Volume (vph)	0	1028	132	759	1110	0	0	0	0	355	0	185
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			143									179
Adj. Flow (vph)	0	1117	143	816	1194	0	0	0	0	408	0	213
Lane Group Flow (vph)	0	1117	143	816	1194	0	0	0	0	0	408	213
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				37.0	58.0					25.0	25.0	25.0
Total Split (%)				28.9%	45.3%					19.5%	19.5%	19.5%
Maximum Green (s)				31.0	52.0					19.0	19.0	19.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.52	0.17	0.90	0.70						1.39	0.52
Control Delay (s/veh)		4.7	0.9	65.5	15.8						235.9	15.6
Queue Delay		0.8	0.9	47.5	1.8						2.9	0.0
Total Delay (s/veh)		5.5	1.8	113.0	17.6						238.9	15.6
Queue Length 50th (ft)		43	0	315	204						~454	25
Queue Length 95th (ft)		m42	m0	#472	336						#628	93
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2312	920	906	1711						293	411
Starvation Cap Reductn		795	561	216	336						0	0
Spillback Cap Reductn		480	0	0	0						59	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.74	0.40	1.18	0.87						1.74	0.52

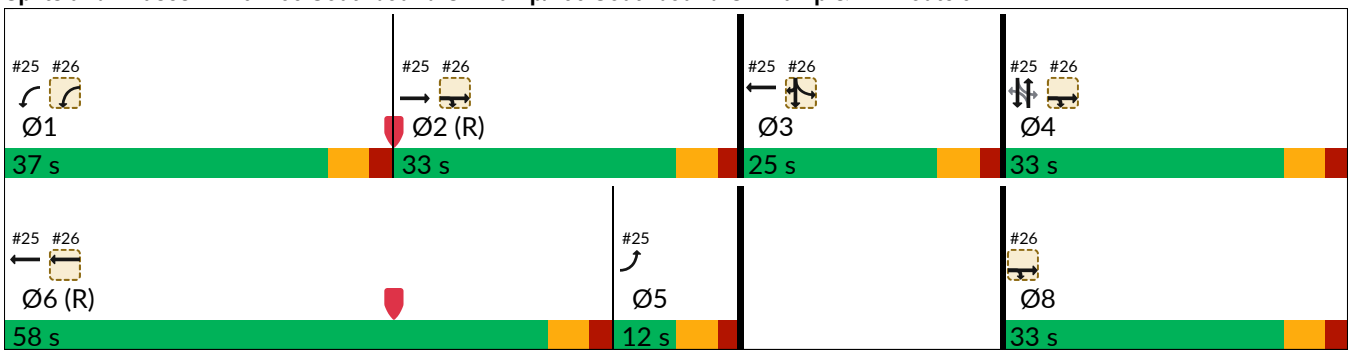
Intersection Summary
Cycle Length: 128

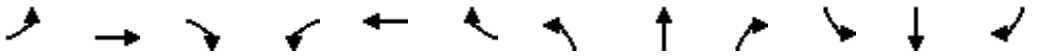
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	33.0	33.0	12.0	33.0
Total Split (%)	26%	26%	9%	26%
Maximum Green (s)	27.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

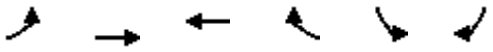




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1028	132	759	1110	0	0	0	0	355	0	185
Future Volume (vph)	0	1028	132	759	1110	0	0	0	0	355	0	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4964	1812	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4964	1812	3236	3336						1787	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.90	0.90	0.90	0.87	0.87	0.87
Adj. Flow (vph)	0	1117	143	816	1194	0	0	0	0	408	0	213
RTOR Reduction (vph)	0	0	81	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	1117	62	816	1194	0	0	0	0	0	408	63
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		51.2	51.2	33.8	60.1						19.0	19.0
Effective Green, g (s)		55.2	55.2	35.8	62.1						21.0	21.0
Actuated g/C Ratio		0.43	0.43	0.28	0.49						0.16	0.16
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2140	781	905	1618						293	262
v/s Ratio Prot		c0.22	0.03	c0.25	c0.36						c0.23	0.04
v/s Ratio Perm												
v/c Ratio		0.52	0.08	0.90	0.74						1.39	0.24
Uniform Delay, d1		26.7	21.4	44.4	26.4						53.5	46.6
Progression Factor		0.32	0.50	1.20	0.52						1.00	1.00
Incremental Delay, d2		0.1	0.0	10.7	2.7						196.2	0.5
Delay (s)		8.7	10.6	64.1	16.5						249.7	47.1
Level of Service		A	B	E	B						F	D
Approach Delay (s/veh)		8.9			35.8			0.0			180.2	
Approach LOS		A			D			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

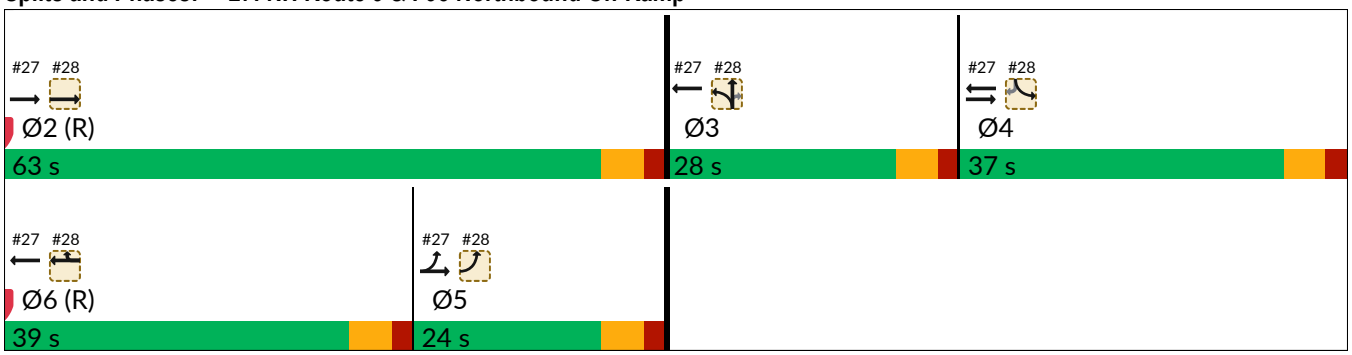


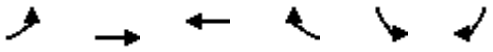
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	114	1249	1869	349	0	0				
Future Volume (vph)	114	1249	1869	349	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				157						
Adj. Flow (vph)	121	1329	1967	367	0	0				
Lane Group Flow (vph)	121	1329	1967	367	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	24.0						63.0	28.0	37.0	39.0
Total Split (%)	18.8%						49%	22%	29%	30%
Maximum Green (s)	18.0						57.0	22.0	31.0	33.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	Min	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.47	0.53	0.53	0.22						
Control Delay (s/veh)	44.8	15.0	4.5	0.0						
Queue Delay	3.9	22.1	48.0	0.0						
Total Delay (s/veh)	48.7	37.1	52.4	0.0						
Queue Length 50th (ft)	61	280	86	0						
Queue Length 95th (ft)	m104	m291	m64	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	260	2502	3744	1652						
Starvation Cap Reductn	78	1212	1958	0						
Spillback Cap Reductn	0	375	1045	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.66	1.03	1.10	0.22						

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	114	1249	1869	349	0	0
Future Volume (vph)	114	1249	1869	349	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.94	0.94	0.95	0.95	0.90	0.90
Adj. Flow (vph)	121	1329	1967	367	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	121	1329	1967	367	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	18.0	94.0	98.0	128.0		
Effective Green, g (s)	20.0	96.0	100.0	128.0		
Actuated g/C Ratio	0.16	0.75	0.78	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	260	2502	3744	1652		
v/s Ratio Prot	0.07	c0.40	c0.41			
v/s Ratio Perm				0.22		
v/c Ratio	0.47	0.53	0.53	0.22		
Uniform Delay, d1	49.1	6.6	5.2	0.0		
Progression Factor	0.82	2.14	0.84	1.00		
Incremental Delay, d2	0.9	0.1	0.0	0.0		
Delay (s)	41.2	14.4	4.4	0.0		
Level of Service	D	B	A	A		
Approach Delay (s/veh)		16.6	3.7		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

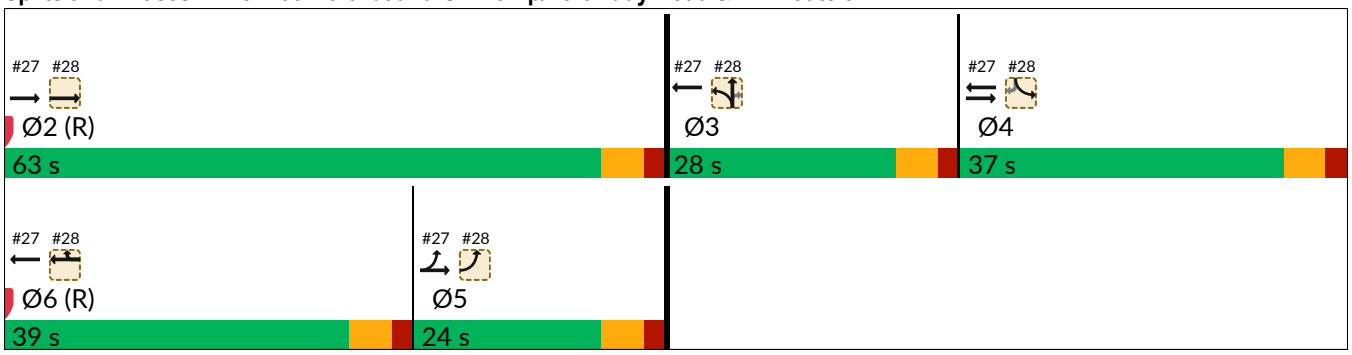
c Critical Lane Group

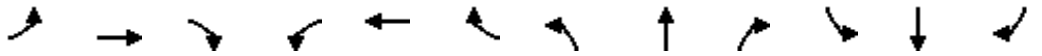
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	812	0	0	1328	502	136	339	679	447	0	754
Future Volume (vph)	437	812	0	0	1328	502	136	339	679	447	0	754
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.925	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1787	3167	1504	3502	0	1669
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1787	3167	1504	3502	0	1669
Satd. Flow (RTOR)						389		97	128			381
Adj. Flow (vph)	451	837	0	0	1428	540	156	390	780	476	0	802
Lane Group Flow (vph)	451	837	0	0	1428	540	156	780	390	476	0	802
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	24.0	63.0			39.0	39.0	28.0	28.0	28.0	37.0		37.0
Total Split (%)	18.8%	49.2%			30.5%	30.5%	21.9%	21.9%	21.9%	28.9%		28.9%
Maximum Green (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		0.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lead/Lag	Lag				Lead	Lead	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	Min	Min	Min	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.89	0.53			1.51	0.74	0.47	1.16	1.01	0.53		1.16
Control Delay (s/veh)	60.3	20.5			271.6	26.1	51.5	128.3	83.2	43.3		110.4
Queue Delay	48.9	1.1			0.0	0.0	0.1	0.0	0.0	0.0		0.0
Total Delay (s/veh)	109.3	21.5			271.6	26.1	51.7	128.3	83.2	43.3		110.4
Queue Length 50th (ft)	157	218			~867	166	117	~386	~264	175		~531
Queue Length 95th (ft)	#277	287			m#1002	m256	182	#493	#465	230		#780
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	505	1592			944	734	335	672	386	902		692
Starvation Cap Reductn	99	476			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	10	0	0	0		2
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.11	0.75			1.51	0.74	0.48	1.16	1.01	0.53		1.16

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	812	0	0	1328	502	136	339	679	447	0	754
Future Volume (vph)	437	812	0	0	1328	502	136	339	679	447	0	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1787	3167	1504	3502		1669
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1787	3167	1504	3502		1669
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	451	837	0	0	1428	540	156	390	780	476	0	802
RTOR Reduction (vph)	0	0	0	0	0	283	0	79	104	0	0	289
Lane Group Flow (vph)	451	837	0	0	1428	257	156	701	286	476	0	513
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
Effective Green, g (s)	20.0	59.0			35.0	35.0	24.0	24.0	24.0	33.0		31.0
Actuated g/C Ratio	0.16	0.46			0.27	0.27	0.19	0.19	0.19	0.26		0.24
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	505	1592			944	451	335	593	282	902		404
v/s Ratio Prot	c0.14	0.24			c0.41	0.16	0.09	c0.22		0.14		
v/s Ratio Perm									0.19			c0.31
v/c Ratio	0.89	0.53			1.51	0.57	0.47	1.18	1.01	0.53		1.27
Uniform Delay, d1	53.0	24.5			46.5	40.0	46.3	52.0	52.0	40.8		48.5
Progression Factor	0.78	0.78			1.21	1.95	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	15.8	1.1			233.6	2.7	1.0	98.5	57.3	0.6		139.9
Delay (s)	57.0	20.3			290.0	80.5	47.3	150.5	109.3	41.4		188.4
Level of Service	E	C			F	F	D	F	F	D		F
Approach Delay (s/veh)		33.1			232.5			126.2			133.6	
Approach LOS		C			F			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	143.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Future Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950				0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	3455	0	0	1805	1669	0
Flt Permitted		0.950				0.950				0.666		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	3455	0	0	1265	1669	0
Satd. Flow (RTOR)				190							114	
Adj. Flow (vph)	1	84	1473	441	1	30	1640	3	334	0	114	22
Lane Group Flow (vph)	0	85	1473	441	0	31	1643	0	0	334	114	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	12.0	21.0		33.0	33.0	33.0	33.0
Total Split (s)	14.0	14.0	76.0	76.0	14.0	14.0	76.0		38.0	38.0	38.0	38.0
Total Split (%)	10.9%	10.9%	59.4%	59.4%	10.9%	10.9%	59.4%		29.7%	29.7%	29.7%	29.7%
Maximum Green (s)	8.0	8.0	70.0	70.0	8.0	8.0	70.0		32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0			8.0		20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0			0		0	0	0	0
v/c Ratio		0.64	0.72	0.46		0.25	0.86			0.95	0.21	
Control Delay (s/veh)		64.0	26.7	13.0		50.6	35.5			83.9	7.4	
Queue Delay		0.0	48.6	0.0		0.0	4.0			0.0	3.0	
Total Delay (s/veh)		64.0	75.3	13.0		50.6	39.5			83.9	10.4	
Queue Length 50th (ft)		65	595	165		25	437			278	0	
Queue Length 95th (ft)		m102	m627	m198		m39	809			#441	41	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150						
Base Capacity (vph)		135	2056	964		135	1943			350	545	
Starvation Cap Reductn		0	0	0		0	226			0	0	
Spillback Cap Reductn		0	793	0		0	0			0	341	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.63	1.17	0.46		0.23	0.96			0.95	0.56	

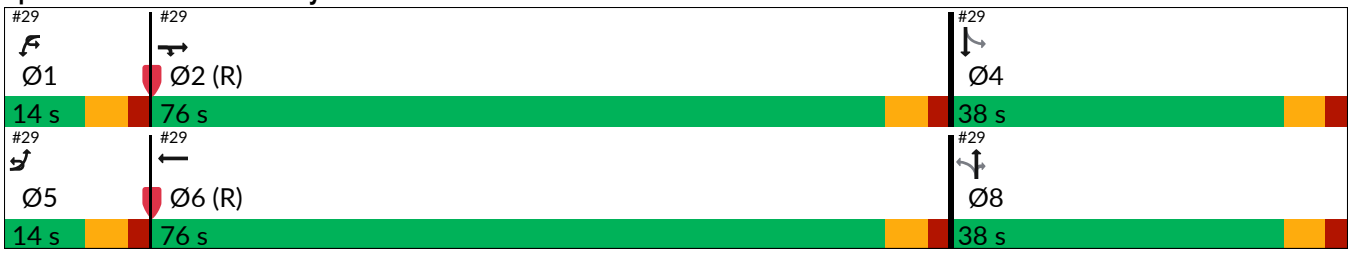
Intersection Summary
Cycle Length: 128

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Lane Util. Factor	1.00	1.00
Frt	0.897	
Flt Protected	0.989	
Satd. Flow (prot)	1729	0
Flt Permitted	0.765	
Satd. Flow (perm)	1337	0
Satd. Flow (RTOR)	73	
Adj. Flow (vph)	1	73
Lane Group Flow (vph)	96	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	33.0	
Total Split (s)	38.0	
Total Split (%)	29.7%	
Maximum Green (s)	32.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	4.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	20.0	
Pedestrian Calls (#/hr)	0	
v/c Ratio	0.23	
Control Delay (s/veh)	13.6	
Queue Delay	5.1	
Total Delay (s/veh)	18.8	
Queue Length 50th (ft)	15	
Queue Length 95th (ft)	31	
Internal Link Dist (ft)	277	
Turn Bay Length (ft)		
Base Capacity (vph)	423	
Starvation Cap Reductn	0	
Spillback Cap Reductn	268	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.62	

Intersection Summary

Actuated Cycle Length: 128
Offset: 105 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
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.

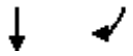
Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Future Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95			1.00	1.00	
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	3454			1805	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.67	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	3454			1265	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1473	441	1	30	1640	3	334	0	114	22
RTOR Reduction (vph)	0	0	0	80	0	0	0	0	0	0	82	0
Lane Group Flow (vph)	0	85	1473	361	0	31	1643	0	0	334	32	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Actuated Green, G (s)		7.9	71.8	71.8		4.7	68.6			33.5	33.5	
Effective Green, g (s)		9.9	73.8	73.8		6.7	70.6			35.5	35.5	
Actuated g/C Ratio		0.08	0.58	0.58		0.05	0.55			0.28	0.28	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0			6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)		133	1992	860		90	1905			350	462	
v/s Ratio Prot		c0.05	c0.43	0.24		0.02	c0.48					
v/s Ratio Perm										c0.26	0.02	
v/c Ratio		0.64	0.74	0.42		0.34	0.86			0.95	0.07	
Uniform Delay, d1		57.3	20.0	15.1		58.5	24.5			45.5	34.1	
Progression Factor		0.85	1.30	1.44		0.83	1.26			1.00	1.00	
Incremental Delay, d2		6.5	1.7	1.0		1.9	4.5			35.9	0.1	
Delay (s)		55.3	27.7	22.8		50.6	35.3			81.4	34.1	
Level of Service		E	C	C		D	D			F	C	
Approach Delay (s/veh)			27.8				35.6			69.4		
Approach LOS			C				D			E		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.77	
Satd. Flow (perm)	1338	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	53	0
Lane Group Flow (vph)	43	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	33.5	
Effective Green, g (s)	35.5	
Actuated g/C Ratio	0.28	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	371	
v/s Ratio Prot		
v/s Ratio Perm	0.03	
v/c Ratio	0.12	
Uniform Delay, d1	34.5	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	34.7	
Level of Service	C	
Approach Delay (s/veh)	34.7	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Future Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.992				0.997			0.854			0.850
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3427	0	0	1728	3445	0	1787	1607	0	1793	1605
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3427	0	0	1728	3445	0	1787	1607	0	1793	1605
Satd. Flow (RTOR)		5				2			235			410
Adj. Flow (vph)	6	1514	86	1	255	1439	29	178	6	235	19	0
Lane Group Flow (vph)	6	1600	0	0	256	1468	0	178	241	0	19	17
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	12.0	57.0		14.0	14.0	59.0		14.0	16.0		12.0	14.0
Total Split (%)	9.4%	44.5%		10.9%	10.9%	46.1%		10.9%	12.5%		9.4%	10.9%
Maximum Green (s)	6.0	51.0		8.0	8.0	53.0		8.0	10.0		6.0	8.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.05	1.11			0.61	0.63		0.48	0.47		0.15	0.04
Control Delay (s/veh)	53.8	109.6			51.1	15.1		50.5	9.5		58.0	0.2
Queue Delay	0.0	0.6			0.0	0.2		3.9	0.0		0.0	0.0
Total Delay (s/veh)	53.8	110.2			51.1	15.3		54.5	9.5		58.0	0.2
Queue Length 50th (ft)	4	~800			182	250		135	4		16	0
Queue Length 95th (ft)	m7	#981			#323	596		204	72		35	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	112	1436			421	2319		368	508		127	503
Starvation Cap Reductn	0	207			0	0		0	0		0	0
Spillback Cap Reductn	0	0			0	182		120	0		0	60
Storage Cap Reductn	0	0			0	0		0	0		0	0
Reduced v/c Ratio	0.05	1.30			0.61	0.69		0.72	0.47		0.15	0.04

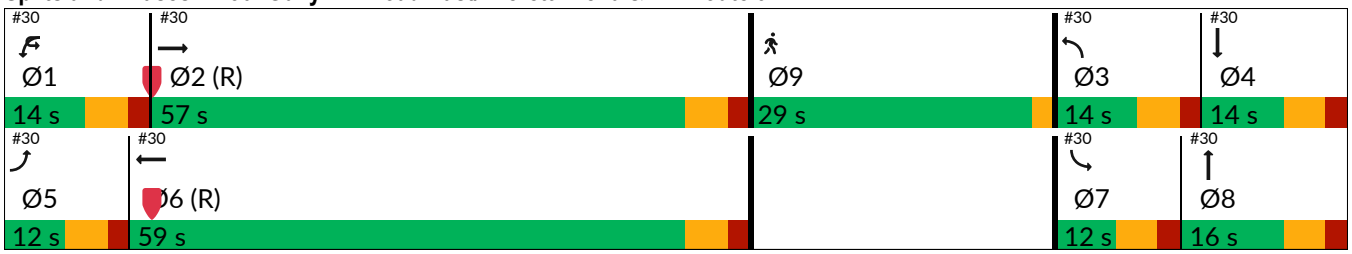
Intersection Summary
Cycle Length: 128

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		23%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 128
Offset: 48 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



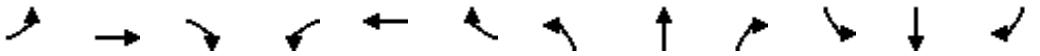
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Future Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1728	3427			1728	3445		1787	1606		1793	1605
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1728	3427			1728	3445		1787	1606		1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1514	86	1	255	1439	29	178	6	235	19	0
RTOR Reduction (vph)	0	3	0	0	0	1	0	0	188	0	0	16
Lane Group Flow (vph)	6	1597	0	0	256	1467	0	178	53	0	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.4	48.0			29.2	75.8		24.4	23.5		3.3	2.4
Effective Green, g (s)	3.4	50.0			31.2	77.8		26.4	25.5		5.3	4.4
Actuated g/C Ratio	0.03	0.39			0.24	0.61		0.21	0.20		0.04	0.03
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45	1338			421	2093		368	319		74	55
v/s Ratio Prot	0.00	c0.47			c0.15	c0.43		c0.10	c0.03		0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.13	1.19			0.61	0.70		0.48	0.17		0.26	0.01
Uniform Delay, d1	60.9	39.0			43.0	17.2		44.8	42.4		59.4	59.7
Progression Factor	0.95	1.52			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	92.8			2.5	2.0		1.0	0.2		1.8	0.1
Delay (s)	58.7	151.9			45.5	19.1		45.8	42.7		61.3	59.8
Level of Service	E	F			D	B		D	D		E	E
Approach Delay (s/veh)		151.6				23.0			44.0			60.6
Approach LOS		F				C			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	80.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

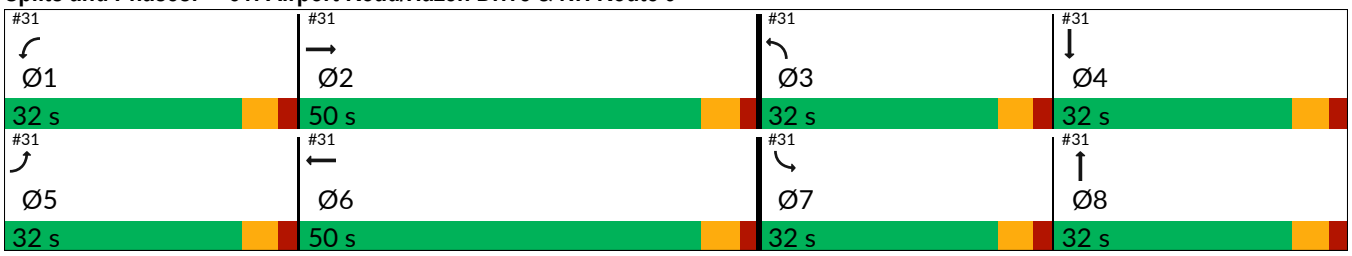


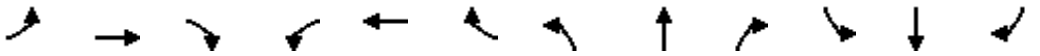
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Future Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			157			157			242			157
Adj. Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
Lane Group Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.30	0.93	0.14	0.56	0.83	0.04	0.66	0.16	0.15	0.20	0.35	0.07
Control Delay (s/veh)	55.1	45.3	0.2	53.4	32.4	0.0	53.7	37.6	0.2	55.1	55.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.1	45.3	0.2	53.4	32.4	0.0	53.7	37.6	0.2	55.1	55.0	0.1
Queue Length 50th (ft)	37	513	0	108	513	0	149	42	0	21	47	0
Queue Length 95th (ft)	86	#855	0	193	#825	0	249	86	0	41	73	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	464	1475	1599	464	1771	1652	449	498	1599	453	477	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.93	0.14	0.34	0.83	0.04	0.49	0.14	0.15	0.07	0.14	0.07

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 110.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Future Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.65	0.65	0.65
Adj. Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.4	46.7	114.2	15.2	54.5	114.2	18.9	23.5	114.2	4.8	9.4	114.2
Effective Green, g (s)	9.4	48.7	114.2	17.2	56.5	114.2	20.9	25.5	114.2	6.8	11.4	114.2
Actuated g/C Ratio	0.08	0.43	1.00	0.15	0.49	1.00	0.18	0.22	1.00	0.06	0.10	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	147	1473	1599	269	1709	1652	316	405	1599	103	183	1561
v/s Ratio Prot	0.03	c0.40		c0.09	c0.43		c0.13	0.04		0.02	c0.04	
v/s Ratio Perm			0.14			0.04			0.15			0.07
v/c Ratio	0.37	0.93	0.14	0.58	0.86	0.04	0.69	0.17	0.15	0.30	0.38	0.07
Uniform Delay, d1	49.6	31.2	0.0	45.2	25.4	0.0	43.6	35.8	0.0	51.4	48.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	11.2	0.2	3.2	4.7	0.0	6.2	0.2	0.2	1.6	1.3	0.1
Delay (s)	51.1	42.5	0.2	48.4	30.1	0.0	49.8	36.0	0.2	53.1	49.4	0.1
Level of Service	D	D	A	D	C	A	D	D	A	D	D	A
Approach Delay (s/veh)		37.0			30.7			25.3			24.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Future Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.997			0.970			0.949			0.951
Flt Protected		0.950			0.950			0.950			0.950	0.980
Satd. Flow (prot)	0	1787	3326	0	1668	3351	0	1685	1683	0	1600	1682
Flt Permitted		0.950			0.950			0.950			0.950	0.980
Satd. Flow (perm)	0	1787	3326	0	1668	3351	0	1685	1683	0	1600	1682
Satd. Flow (RTOR)			1			20			16			14
Adj. Flow (vph)	1	52	1269	29	54	1392	341	162	165	86	391	75
Lane Group Flow (vph)	0	53	1298	0	54	1733	0	162	251	0	282	272
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.29	1.16		0.31	1.50		0.46	0.69		0.81	0.72
Control Delay (s/veh)		47.8	113.7		48.2	259.5		41.4	47.0		58.4	48.6
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		47.8	113.7		48.2	259.5		41.4	47.0		58.4	48.6
Queue Length 50th (ft)		34	~565		34	~878		95	146		191	171
Queue Length 95th (ft)		73	#733		74	#1057		122	172		#356	#309
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		301	1122		281	1152		367	379		349	378
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		0.18	1.16		0.19	1.50		0.44	0.66		0.81	0.72

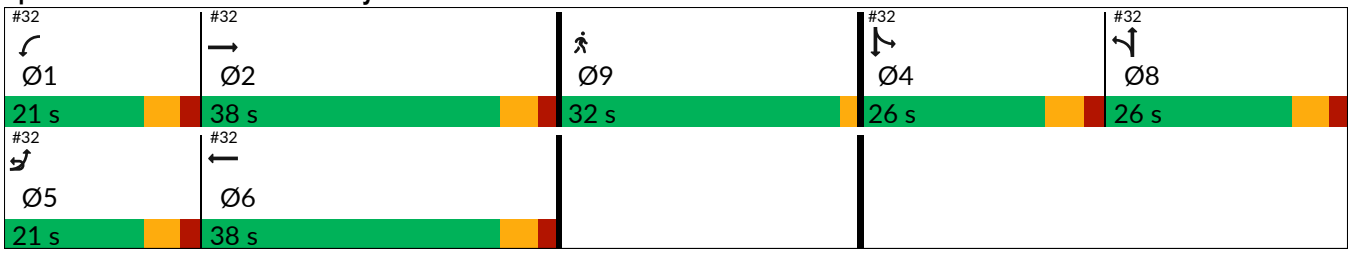
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	88	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 101.5
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



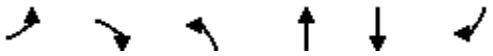
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Future Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	1.00		1.00	0.97		1.00	0.95		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (prot)		1787	3325		1668	3353		1685	1682		1600	1684
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (perm)		1787	3325		1668	3353		1685	1682		1600	1684
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.69	0.69	0.69	0.93	0.93
Adj. Flow (vph)	1	52	1269	29	54	1392	341	162	165	86	391	75
RTOR Reduction (vph)	0	0	1	0	0	13	0	0	13	0	0	11
Lane Group Flow (vph)	0	53	1297	0	54	1720	0	162	238	0	282	261
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		7.1	32.3		7.3	32.5		19.1	19.1		20.1	20.1
Effective Green, g (s)		9.1	34.3		9.3	34.5		21.1	21.1		22.1	22.1
Actuated g/C Ratio		0.09	0.33		0.09	0.34		0.21	0.21		0.21	0.21
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		158	1109		150	1125		345	345		343	362
v/s Ratio Prot		0.03	0.39		c0.03	c0.51		0.10	c0.14		c0.18	0.16
v/s Ratio Perm												
v/c Ratio		0.34	1.17		0.36	1.53		0.47	0.69		0.82	0.72
Uniform Delay, d1		44.0	34.3		44.0	34.2		35.9	37.8		38.5	37.5
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.3	86.3		1.5	242.4		1.0	5.9		14.6	6.9
Delay (s)		45.3	120.6		45.4	276.6		36.9	43.7		53.1	44.4
Level of Service		D	F		D	F		D	D		D	D
Approach Delay (s/veh)			117.6			269.6			41.0			48.8
Approach LOS			F			F			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	166.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	82
Future Volume (vph)	82
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	88
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



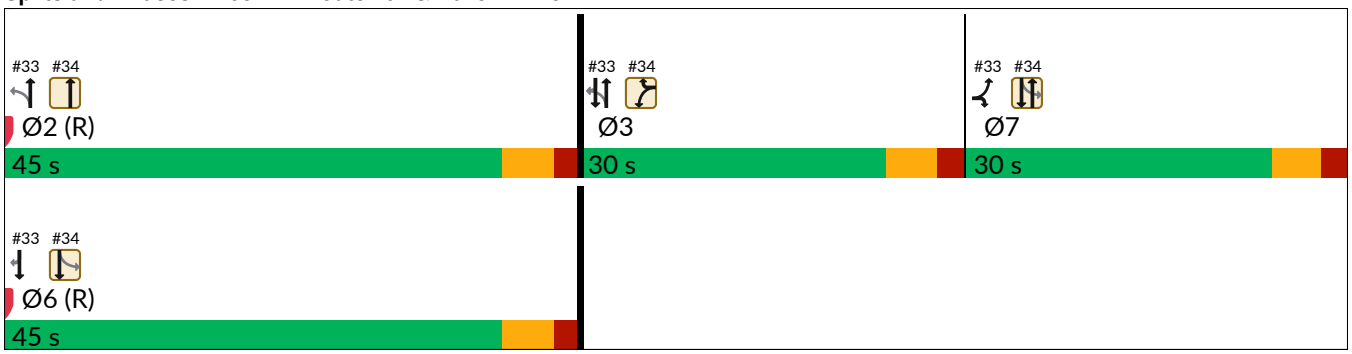
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	140	21	12	491	651	142			
Future Volume (vph)	140	21	12	491	651	142			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1805	1615	0	1817	1900	1561			
Flt Permitted	0.950			0.980					
Satd. Flow (perm)	1805	1615	0	1782	1900	1561			
Satd. Flow (RTOR)		28				146			
Adj. Flow (vph)	189	28	16	638	671	146			
Lane Group Flow (vph)	189	28	0	654	671	146			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.45	0.07		0.53	0.51	0.13			
Control Delay (s/veh)	37.7	11.5		10.3	11.6	3.4			
Queue Delay	0.0	0.0		0.0	0.9	0.0			
Total Delay (s/veh)	37.7	11.5		10.3	12.5	3.4			
Queue Length 50th (ft)	107	0		203	195	9			
Queue Length 95th (ft)	139	16		222	332	m30			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	446	420		1222	1304	1117			
Starvation Cap Reductn	0	0		0	349	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.42	0.07		0.54	0.70	0.13			

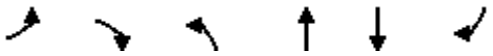
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	140	21	12	491	651	142
Future Volume (vph)	140	21	12	491	651	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1805	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	1805	1615		1783	1900	1561
Peak-hour factor, PHF	0.74	0.74	0.77	0.77	0.97	0.97
Adj. Flow (vph)	189	28	16	638	671	146
RTOR Reduction (vph)	0	21	0	0	0	45
Lane Group Flow (vph)	189	7	0	654	671	101
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	22.7	22.7		70.3	70.3	70.3
Effective Green, g (s)	24.7	24.7		72.3	72.3	72.3
Actuated g/C Ratio	0.24	0.24		0.69	0.69	0.69
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	424	379		1227	1308	1074
v/s Ratio Prot	c0.10	0.00			0.35	
v/s Ratio Perm				c0.37		0.06
v/c Ratio	0.45	0.02		0.53	0.51	0.09
Uniform Delay, d1	34.3	30.8		8.0	7.9	5.4
Progression Factor	1.00	1.00		1.00	1.23	3.11
Incremental Delay, d2	0.7	0.0		0.4	0.3	0.0
Delay (s)	35.1	30.8		8.5	10.0	17.0
Level of Service	D	C		A	A	B
Approach Delay (s/veh)	34.5			8.5	11.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

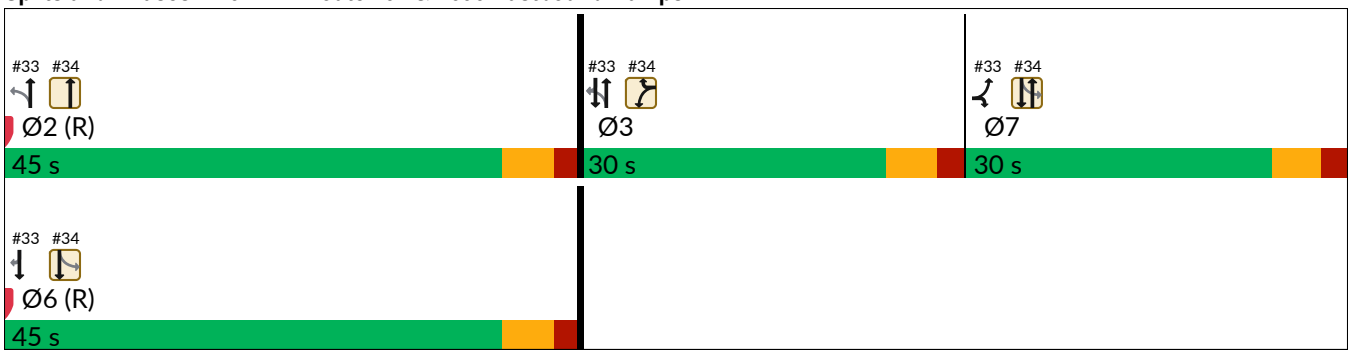
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	355	72	546	86	38	465			
Future Volume (vph)	355	72	546	86	38	465			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.980						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3386	0	1728	1818			
Flt Permitted	0.950				0.320				
Satd. Flow (perm)	1805	1615	3386	0	582	1818			
Satd. Flow (RTOR)		59	37						
Adj. Flow (vph)	378	77	674	106	40	495			
Lane Group Flow (vph)	378	77	780	0	40	495			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.76	0.16	0.35		0.11	0.42			
Control Delay (s/veh)	47.2	12.4	6.0		7.3	10.0			
Queue Delay	0.0	0.0	0.3		0.0	0.0			
Total Delay (s/veh)	47.2	12.4	6.2		7.3	10.0			
Queue Length 50th (ft)	233	9	77		9	147			
Queue Length 95th (ft)	#401	47	78		21	193			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	495	486	2288		391	1222			
Starvation Cap Reductn	0	0	806		0	0			
Spillback Cap Reductn	0	0	0		0	43			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.76	0.16	0.53		0.10	0.42			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

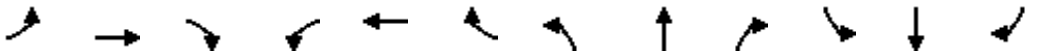


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	355	72	546	86	38	465
Future Volume (vph)	355	72	546	86	38	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3385		1728	1818
Flt Permitted	0.95	1.00	1.00		0.32	1.00
Satd. Flow (perm)	1805	1615	3385		583	1818
Peak-hour factor, PHF	0.94	0.94	0.81	0.81	0.94	0.94
Adj. Flow (vph)	378	77	674	106	40	495
RTOR Reduction (vph)	0	43	13	0	0	0
Lane Group Flow (vph)	378	34	767	0	40	495
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	26.8	26.8	66.2		66.2	66.2
Effective Green, g (s)	28.8	28.8	68.2		68.2	68.2
Actuated g/C Ratio	0.27	0.27	0.65		0.65	0.65
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	495	442	2198		378	1180
v/s Ratio Prot	c0.21	0.02	0.23			c0.27
v/s Ratio Perm					0.07	
v/c Ratio	0.76	0.08	0.35		0.11	0.42
Uniform Delay, d1	35.0	28.2	8.3		6.9	8.9
Progression Factor	1.00	1.00	0.71		1.00	1.00
Incremental Delay, d2	6.9	0.1	0.1		0.1	0.2
Delay (s)	41.9	28.3	6.0		7.0	9.1
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	39.6		6.0			9.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

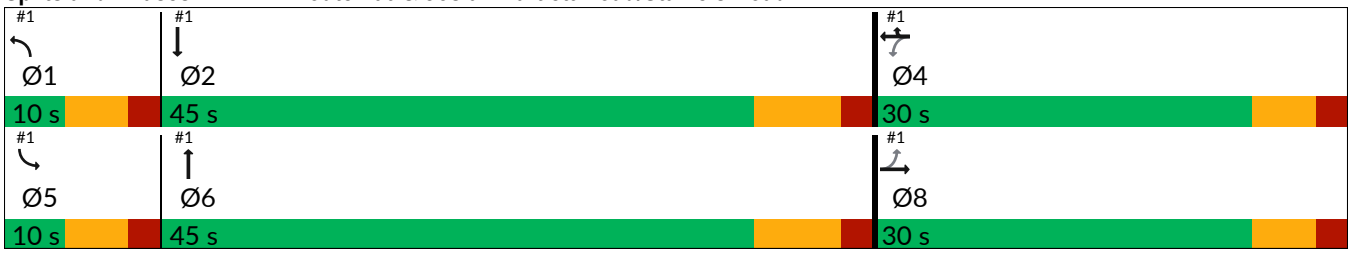
2037 Build Weekday Morning Peak-Hour

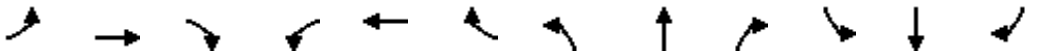


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Future Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.904				0.850		0.987				
Flt Protected		0.989			0.950					0.950		
Satd. Flow (prot)	0	1618	0	0	1736	1553	1776	3330	0	1736	3471	0
Flt Permitted		0.929			0.748					0.950		
Satd. Flow (perm)	0	1520	0	0	1367	1553	1776	3330	0	1736	3471	0
Satd. Flow (RTOR)		10				135		16				
Adj. Flow (vph)	3	1	10	136	0	20	0	432	42	34	1391	3
Lane Group Flow (vph)	0	14	0	0	136	20	0	474	0	34	1394	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.43	0.04		0.23		0.27	0.58	
Control Delay (s/veh)		12.6			25.2	0.2		8.4		35.1	8.5	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		12.6			25.2	0.2		8.4		35.1	8.5	
Queue Length 50th (ft)		1			44	0		34		13	148	
Queue Length 95th (ft)		14			93	0		98		41	263	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		713			637	796		2351		124	2445	
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			0.21	0.03		0.20		0.27	0.57	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 58
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

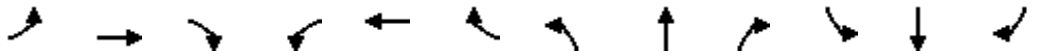
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Future Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.90			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1618			1736	1553		3329		1736	3470	
Flt Permitted		0.93			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1520			1367	1553		3329		1736	3470	
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)	3	1	10	136	0	20	0	432	42	34	1391	3
RTOR Reduction (vph)	0	8	0	0	0	16	0	7	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	136	4	0	467	0	34	1394	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		9.4			9.4	9.4		32.8		1.4	40.2	
Effective Green, g (s)		11.4			11.4	11.4		34.8		1.4	42.2	
Actuated g/C Ratio		0.18			0.18	0.18		0.55		0.02	0.67	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		274			246	280		1835		38	2320	
v/s Ratio Prot						0.00		0.14		0.02	c0.40	
v/s Ratio Perm		0.00			c0.10							
v/c Ratio		0.02			0.55	0.01		0.25		0.89	0.60	
Uniform Delay, d1		21.3			23.5	21.2		7.4		30.8	5.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			2.7	0.0		0.1		103.9	0.4	
Delay (s)		21.3			26.2	21.2		7.5		134.7	6.2	
Level of Service		C			C	C		A		F	A	
Approach Delay (s/veh)		21.3			25.6			7.5			9.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	15.5
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

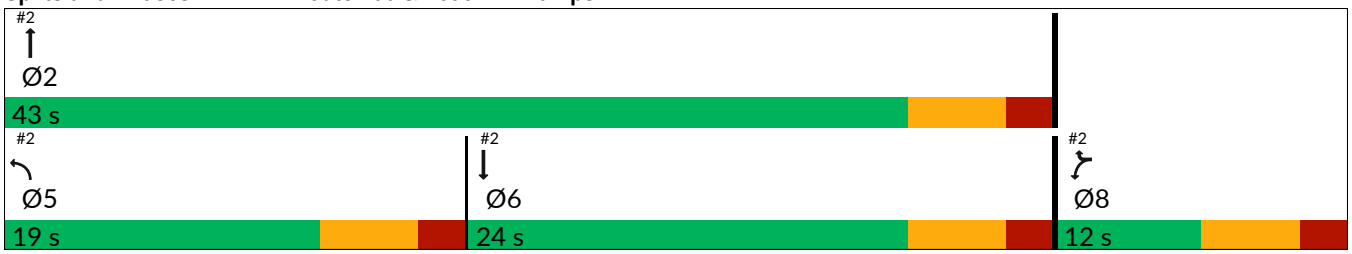


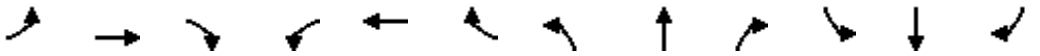
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	15	355	594	0	0	679	1209
Future Volume (vph)	0	0	0	3	0	15	355	594	0	0	679	1209
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1743	0	1509	3134	3231	0	0	3388	1516
Satd. Flow (RTOR)						179						765
Adj. Flow (vph)	0	0	0	3	0	17	394	660	0	0	754	1343
Lane Group Flow (vph)	0	0	0	3	0	17	394	660	0	0	754	1343
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.01		0.04	0.41	0.22			0.51	0.89
Control Delay (s/veh)				17.7		0.1	13.6	1.1			10.6	9.9
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				17.7		0.1	13.6	1.1			10.6	9.9
Queue Length 50th (ft)				1		0	32	0			51	0
Queue Length 95th (ft)				7		0	94	48			155	#96
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				364		457	1230	3007			1773	1516
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		0.04	0.32	0.22			0.43	0.89

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 39.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

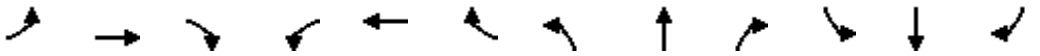




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	15	355	594	0	0	679	1209
Future Volume (vph)	0	0	0	3	0	15	355	594	0	0	679	1209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1743		1509	3134	3231			3388	1516
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1743		1509	3134	3231			3388	1516
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)	0	0	0	3	0	17	394	660	0	0	754	1343
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	1	394	660	0	0	754	1343
Heavy Vehicles (%)	0%	0%	0%	7%	7%	7%	8%	8%	8%	3%	3%	3%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				0.9		0.9	10.2	31.8			15.6	44.7
Effective Green, g (s)				2.9		2.9	12.2	33.8			17.6	44.7
Actuated g/C Ratio				0.06		0.06	0.27	0.76			0.39	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				113		97	855	2443			1333	1516
v/s Ratio Prot				0.00		0.00	0.13	0.20			0.22	
v/s Ratio Perm												c0.89
v/c Ratio				0.03		0.01	0.46	0.27			0.57	0.89
Uniform Delay, d1				19.6		19.6	13.5	1.7			10.6	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		0.0	0.4	0.1			0.6	8.0
Delay (s)				19.7		19.6	13.9	1.7			11.1	8.0
Level of Service				B		B	B	A			B	A
Approach Delay (s/veh)		0.0			19.6			6.3			9.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

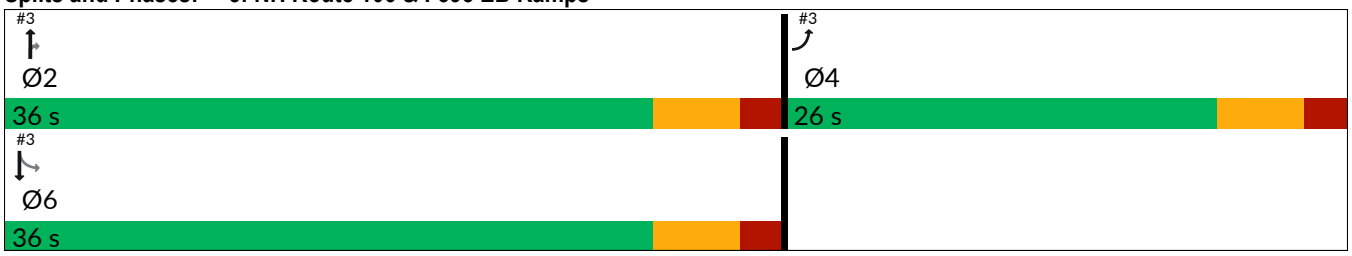
c Critical Lane Group

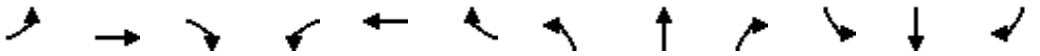


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	0	485	0	0	0	0	602	1	30	652	0
Future Volume (vph)	347	0	485	0	0	0	0	602	1	30	652	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.998	
Satd. Flow (prot)	3303	0	2682	0	0	0	0	3261	1459	0	3414	0
Flt Permitted	0.950										0.908	
Satd. Flow (perm)	3303	0	2682	0	0	0	0	3261	1459	0	3106	0
Satd. Flow (RTOR)			539						53			
Adj. Flow (vph)	386	0	539	0	0	0	0	669	1	33	724	0
Lane Group Flow (vph)	386	0	539	0	0	0	0	669	1	0	757	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.38		0.20					0.43	0.00		0.51	
Control Delay (s/veh)	12.6		0.2					7.8	0.0		8.5	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	12.6		0.2					7.8	0.0		8.5	
Queue Length 50th (ft)	32		0					45	0		51	
Queue Length 95th (ft)	78		0					91	0		104	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1899		2682					2710	1221		2581	
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	0.20		0.20					0.25	0.00		0.29	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 39.4
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

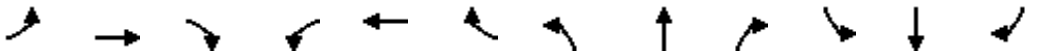




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	0	485	0	0	0	0	602	1	30	652	0
Future Volume (vph)	347	0	485	0	0	0	0	602	1	30	652	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3303		2682					3261	1459		3414	
Flt Permitted	0.95		1.00					1.00	1.00		0.91	
Satd. Flow (perm)	3303		2682					3261	1459		3108	
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)	386	0	539	0	0	0	0	669	1	33	724	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	386	0	539	0	0	0	0	669	0	0	757	0
Heavy Vehicles (%)	6%	6%	6%	0%	0%	0%	7%	7%	7%	2%	2%	2%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	10.2		39.1					16.9	16.9		16.9	
Effective Green, g (s)	12.2		39.1					18.9	18.9		18.9	
Actuated g/C Ratio	0.31		1.00					0.48	0.48		0.48	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1030		2682					1576	705		1502	
v/s Ratio Prot	c0.12							0.21				
v/s Ratio Perm			0.20						0.00		c0.24	
v/c Ratio	0.37		0.20					0.42	0.00		0.50	
Uniform Delay, d1	10.5		0.0					6.6	5.2		6.9	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.2		0.2					0.2	0.0		0.3	
Delay (s)	10.7		0.2					6.8	5.2		7.2	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.6			0.0			6.7			7.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

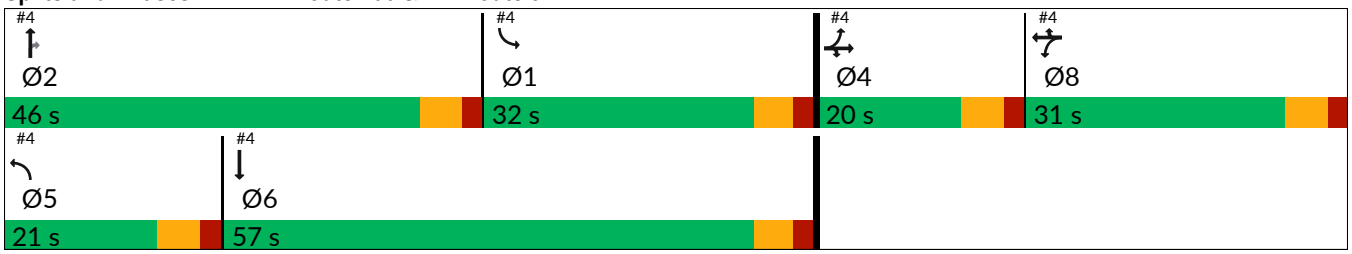


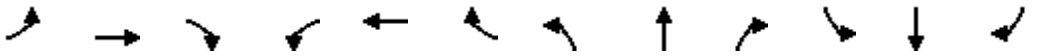
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Future Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	1557	3195	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	1557	3195	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			178			178			157			267
Adj. Flow (vph)	223	124	49	542	260	99	12	343	157	40	839	384
Lane Group Flow (vph)	223	124	49	271	531	99	12	343	157	40	839	384
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.43	0.44	0.13	0.61	0.58	0.18	0.07	0.38	0.31	0.16	0.65	0.22
Control Delay (s/veh)	38.2	42.0	0.7	36.3	31.3	0.7	43.9	30.4	7.5	35.0	25.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.2	42.0	0.7	36.3	31.3	0.7	43.9	30.4	7.5	35.0	25.2	0.3
Queue Length 50th (ft)	57	62	0	129	125	0	6	89	0	20	194	0
Queue Length 95th (ft)	123	153	0	#334	265	0	30	172	58	53	332	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	639	346	437	520	1069	630	340	1681	827	590	2225	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	73	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.36	0.11	0.52	0.50	0.16	0.04	0.20	0.19	0.07	0.39	0.22

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 84.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Future Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	1557	3196	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	1557	3196	1531	1616	3231	1446	1694	3388	1777
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)	223	124	49	542	260	99	12	343	157	40	839	384
RTOR Reduction (vph)	0	0	41	0	0	72	0	0	116	0	0	0
Lane Group Flow (vph)	223	124	8	271	531	27	12	343	41	40	839	384
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	11.6	11.6	11.6	22.0	22.0	22.0	1.2	21.4	21.4	9.8	30.0	88.8
Effective Green, g (s)	13.6	13.6	13.6	24.0	24.0	24.0	3.2	23.4	23.4	11.8	32.0	88.8
Actuated g/C Ratio	0.15	0.15	0.15	0.27	0.27	0.27	0.04	0.26	0.26	0.13	0.36	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	493	267	227	420	863	413	58	851	381	225	1220	1777
v/s Ratio Prot	0.07	c0.07	0.01	c0.17	0.17	0.02	0.01	c0.11		0.02	c0.25	
v/s Ratio Perm									0.03			0.22
v/c Ratio	0.45	0.46	0.03	0.65	0.62	0.06	0.21	0.40	0.11	0.18	0.69	0.22
Uniform Delay, d1	34.2	34.3	32.0	28.6	28.4	24.1	41.6	26.9	24.8	34.2	24.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.3	0.1	3.4	1.3	0.1	1.8	0.3	0.1	0.4	1.6	0.3
Delay (s)	34.9	35.6	32.1	32.0	29.7	24.1	43.3	27.3	24.9	34.6	25.8	0.3
Level of Service	C	D	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		34.7			29.8			26.9			18.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

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	8	0	10	12	0	17	6	617	4	27	822	9
Future Vol, veh/h	8	0	10	12	0	17	6	617	4	27	822	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	69	69	69	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	8	8	8	2	2	2
Mvmt Flow	16	0	20	17	0	25	7	686	4	30	913	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1677	1682	918	1672	-	686	923	0	0	690	0	0
Stage 1	978	978	-	699	-	-	-	-	-	-	-	-
Stage 2	699	703	-	973	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.18	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.272	-	-	2.218	-	-
Pot Cap-1 Maneuver	76	95	332	77	0	451	716	-	-	905	-	-
Stage 1	304	331	-	434	0	-	-	-	-	-	-	-
Stage 2	434	443	-	306	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	69	91	332	69	-	451	716	-	-	905	-	-
Mov Cap-2 Maneuver	69	91	-	69	-	-	-	-	-	-	-	-
Stage 1	294	320	-	430	-	-	-	-	-	-	-	-
Stage 2	406	439	-	278	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	41.25	38.33	0.1	0.29
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	716	-	-	69	332	69	451	905	-	-
HCM Lane V/C Ratio	0.009	-	-	0.232	0.06	0.251	0.055	0.033	-	-
HCM Ctrl Dly (s/v)	10.1	-	-	72.1	16.5	73.6	13.4	9.1	-	-
HCM Lane LOS	B	-	-	F	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.2	0.9	0.2	0.1	-	-

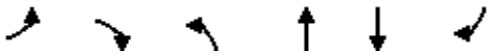
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	41	41	525	805	39
Future Vol, veh/h	24	41	41	525	805	39
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	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	90	90	90	90
Heavy Vehicles, %	4	4	7	7	7	7
Mvmt Flow	35	60	46	583	894	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1569	894	938	0	-	0
Stage 1	894	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.17	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.263	-	-	-
Pot Cap-1 Maneuver	121	337	711	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	502	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	337	711	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	502	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	30.11	0.75	0
HCM LOS	D		

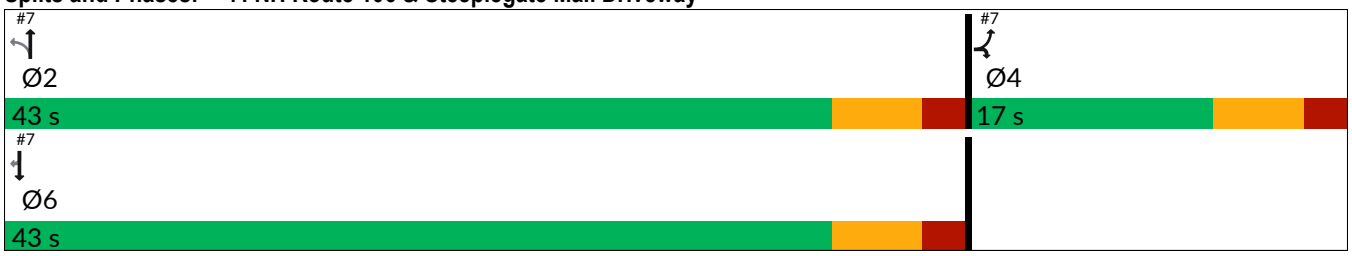
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	711	-	113	337	-	-
HCM Lane V/C Ratio	0.064	-	0.313	0.179	-	-
HCM Ctrl Dly (s/v)	10.4	-	50.8	18	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	0.6	-	-

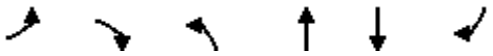


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	89	88	54	478	781	65
Future Volume (vph)	89	88	54	478	781	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1583	1616	1759	1827	1501
Flt Permitted	0.950		0.228			
Satd. Flow (perm)	1888	1583	388	1759	1827	1501
Satd. Flow (RTOR)		98				72
Adj. Flow (vph)	99	98	60	531	868	72
Lane Group Flow (vph)	99	98	60	531	868	72
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	16.0	16.0	16.0	16.0
Total Split (s)	17.0	17.0	43.0	43.0	43.0	43.0
Total Split (%)	28.3%	28.3%	71.7%	71.7%	71.7%	71.7%
Maximum Green (s)	11.0	11.0	37.0	37.0	37.0	37.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
v/c Ratio	0.25	0.24	0.22	0.42	0.66	0.07
Control Delay (s/veh)	20.8	7.0	6.5	5.7	9.1	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.8	7.0	6.5	5.7	9.1	1.3
Queue Length 50th (ft)	25	0	6	68	144	0
Queue Length 95th (ft)	66	32	25	143	312	10
Internal Link Dist (ft)	425			617	959	
Turn Bay Length (ft)		140	250			275
Base Capacity (vph)	522	508	304	1380	1433	1193
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	0.19	0.19	0.20	0.38	0.61	0.06

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 49.5
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: NH Route 106 & Steeplegate Mall Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	89	88	54	478	781	65
Future Volume (vph)	89	88	54	478	781	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	12	11	12	12	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1888	1583	1616	1759	1827	1501
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	1888	1583	388	1759	1827	1501
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	99	98	60	531	868	72
RTOR Reduction (vph)	0	82	0	0	0	23
Lane Group Flow (vph)	99	16	60	531	868	49
Heavy Vehicles (%)	2%	2%	8%	8%	4%	4%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	6.5	6.5	32.3	32.3	32.3	32.3
Effective Green, g (s)	8.5	8.5	34.3	34.3	34.3	34.3
Actuated g/C Ratio	0.17	0.17	0.68	0.68	0.68	0.68
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	264	261	1187	1233	1013
v/s Ratio Prot	c0.05	0.01		0.30	c0.48	
v/s Ratio Perm			0.15			0.03
v/c Ratio	0.31	0.06	0.23	0.45	0.70	0.05
Uniform Delay, d1	18.6	17.8	3.2	3.8	5.1	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.5	0.3	1.8	0.0
Delay (s)	19.2	17.9	3.6	4.1	7.0	2.8
Level of Service	B	B	A	A	A	A
Approach Delay (s/veh)	18.5			4.1	6.6	
Approach LOS	B			A	A	

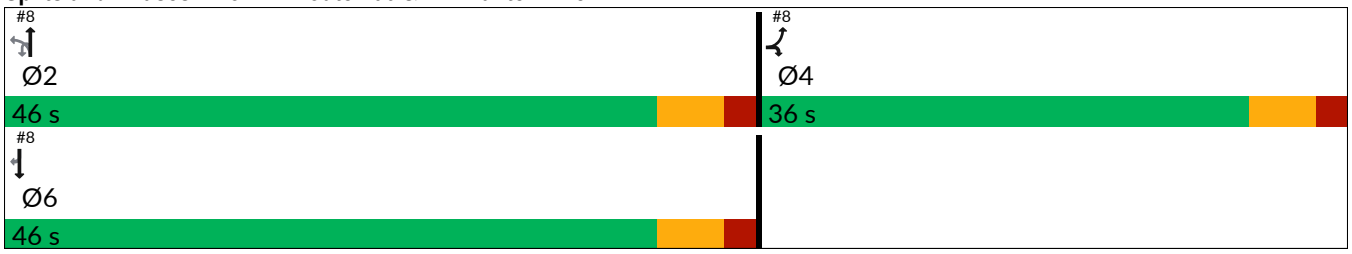
Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	146	77	1	73	393	677	192
Future Volume (vph)	146	77	1	73	393	677	192
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1711	1531	0	1678	1827	1783	1568
Flt Permitted	0.950			0.263			
Satd. Flow (perm)	1711	1531	0	464	1827	1783	1568
Satd. Flow (RTOR)		86					211
Adj. Flow (vph)	162	86	1	81	437	744	211
Lane Group Flow (vph)	162	86	0	82	437	744	211
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.40	0.20		0.29	0.39	0.67	0.20
Control Delay (s/veh)	22.3	6.7		8.7	6.9	11.2	1.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.3	6.7		8.7	6.9	11.2	1.4
Queue Length 50th (ft)	42	0		11	62	137	0
Queue Length 95th (ft)	106	30		39	132	295	21
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	995	927		354	1395	1362	1247
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	0.16	0.09		0.23	0.31	0.55	0.17

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 56
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	146	77	1	73	393	677	192
Future Volume (vph)	146	77	1	73	393	677	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1711	1531		1678	1827	1783	1568
Flt Permitted	0.95	1.00		0.26	1.00	1.00	1.00
Satd. Flow (perm)	1711	1531		464	1827	1783	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.91	0.91
Adj. Flow (vph)	162	86	1	81	437	744	211
RTOR Reduction (vph)	0	66	0	0	0	0	80
Lane Group Flow (vph)	162	20	0	82	437	744	131
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	11.1	11.1		32.6	32.6	32.6	32.6
Effective Green, g (s)	13.1	13.1		34.6	34.6	34.6	34.6
Actuated g/C Ratio	0.24	0.24		0.62	0.62	0.62	0.62
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	402	360		288	1134	1107	974
v/s Ratio Prot	c0.09	0.01			0.24	c0.42	
v/s Ratio Perm				0.18			0.08
v/c Ratio	0.40	0.06		0.28	0.39	0.67	0.13
Uniform Delay, d1	18.0	16.5		4.9	5.3	6.9	4.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1		0.5	0.2	1.6	0.1
Delay (s)	18.7	16.6		5.4	5.5	8.5	4.4
Level of Service	B	B		A	A	A	A
Approach Delay (s/veh)	17.9				5.5	7.6	
Approach LOS	B				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	72	110	462	1117	52
Future Vol, veh/h	5	72	110	462	1117	52
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	1	1
Mvmt Flow	6	80	122	513	1241	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1999	1241	1299	0	-	0
Stage 1	1241	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	65	210	523	-	-	-
Stage 1	269	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	50	210	523	-	-	-
Mov Cap-2 Maneuver	50	-	-	-	-	-
Stage 1	206	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	44.33	2.68	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	523	-	174	-	-
HCM Lane V/C Ratio	0.233	-	0.493	-	-
HCM Ctrl Dly (s/v)	14	-	44.3	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.9	-	2.4	-	-

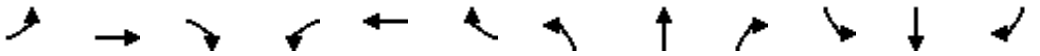
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	197	36	45	168	52	13	0	23	0	0	62
Future Vol, veh/h	28	197	36	45	168	52	13	0	23	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	0	-	50	0	-	0	-	-	0
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, %	3	3	3	2	2	2	0	0	0	2	2	2
Mvmt Flow	31	219	40	50	187	58	14	0	26	0	0	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	244	0	0	259	0	0	588	-	129	-	-	187
Stage 1	-	-	-	-	-	-	301	-	-	-	-	-
Stage 2	-	-	-	-	-	-	287	-	-	-	-	-
Critical Hdwy	4.145	-	-	4.13	-	-	7.3	-	6.9	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	-	-	-	-
Follow-up Hdwy	2.2285	-	-	2.219	-	-	3.5	-	3.3	-	-	3.319
Pot Cap-1 Maneuver	1314	-	-	1304	-	-	410	0	903	0	0	855
Stage 1	-	-	-	-	-	-	689	0	-	0	0	-
Stage 2	-	-	-	-	-	-	725	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1314	-	-	1304	-	-	354	-	903	-	-	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	-	-	-	-	-
Stage 1	-	-	-	-	-	-	673	-	-	-	-	-
Stage 2	-	-	-	-	-	-	641	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.84	1.34	11.45	9.58
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	354	903	1314	-	-	1304	-	-	855
HCM Lane V/C Ratio	0.041	0.028	0.024	-	-	0.038	-	-	0.081
HCM Ctrl Dly (s/v)	15.6	9.1	7.8	-	-	7.9	-	-	9.6
HCM Lane LOS	C	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	0.1	-	-	0.1	-	-	0.3

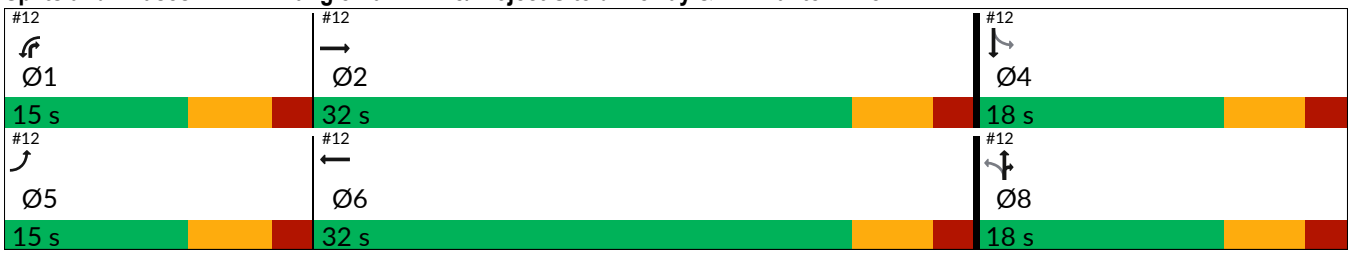


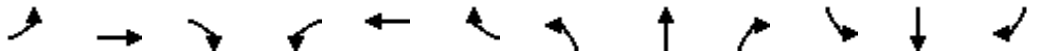
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	162	73	44	149	49	39	7	43	56	4	43
Future Volume (vph)	57	162	73	44	149	49	39	7	43	56	4	43
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.953			0.963				0.850		0.862	
Flt Protected	0.950			0.950				0.960		0.950		
Satd. Flow (prot)	1787	3293	0	1694	1776	0	0	1788	1583	1770	1606	0
Flt Permitted	0.950			0.950				0.723		0.724		
Satd. Flow (perm)	1787	3293	0	1694	1776	0	0	1347	1583	1349	1606	0
Satd. Flow (RTOR)		81			32				50		48	
Adj. Flow (vph)	63	180	81	49	166	54	43	8	48	62	4	48
Lane Group Flow (vph)	63	261	0	49	220	0	0	51	48	62	52	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	32.0		15.0	32.0		18.0	18.0		18.0	18.0	
Total Split (%)	23.1%	49.2%		23.1%	49.2%		27.7%	27.7%		27.7%	27.7%	
Maximum Green (s)	9.0	26.0		9.0	26.0		12.0	12.0		12.0	12.0	
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)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.14	0.14		0.12	0.19			0.14	0.07	0.17	0.11	
Control Delay (s/veh)	15.8	7.9		15.9	9.1			15.5	2.5	15.7	7.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay (s/veh)	15.8	7.9		15.9	9.1			15.5	2.5	15.7	7.1	
Queue Length 50th (ft)	11	16		9	17			9	0	11	1	
Queue Length 95th (ft)	42	42		36	91			36	11	41	22	
Internal Link Dist (ft)		981			380			958			380	
Turn Bay Length (ft)	50			250					170			
Base Capacity (vph)	575	2553		545	1374			552	895	553	686	
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	0.11	0.10		0.09	0.16			0.09	0.05	0.11	0.08	

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 37.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive

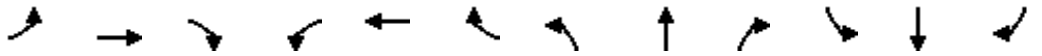




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	162	73	44	149	49	39	7	43	56	4	43
Future Volume (vph)	57	162	73	44	149	49	39	7	43	56	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.96			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3294		1694	1777			1787	1583	1770	1605	
Flt Permitted	0.95	1.00		0.95	1.00			0.72	1.00	0.72	1.00	
Satd. Flow (perm)	1787	3294		1694	1777			1347	1583	1348	1605	
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)	63	180	81	49	166	54	43	8	48	62	4	48
RTOR Reduction (vph)	0	44	0	0	17	0	0	0	31	0	41	0
Lane Group Flow (vph)	63	217	0	49	203	0	0	51	17	62	11	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Actuated Green, G (s)	2.6	18.2		3.8	19.4			4.3	14.1	4.3	4.3	
Effective Green, g (s)	4.6	20.2		5.8	21.4			6.3	16.1	6.3	6.3	
Actuated g/C Ratio	0.10	0.46		0.13	0.48			0.14	0.36	0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	185	1502		221	858			191	575	191	228	
v/s Ratio Prot	c0.04	0.07		0.03	c0.11				0.01		0.01	
v/s Ratio Perm								0.04		c0.05		
v/c Ratio	0.34	0.14		0.22	0.24			0.27	0.03	0.32	0.05	
Uniform Delay, d1	18.4	7.0		17.2	6.7			16.9	9.1	17.1	16.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.0		0.5	0.1			0.8	0.0	1.0	0.1	
Delay (s)	19.5	7.1		17.7	6.8			17.7	9.1	18.1	16.5	
Level of Service	B	A		B	A			B	A	B	B	
Approach Delay (s/veh)		9.5			8.8			13.5			17.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

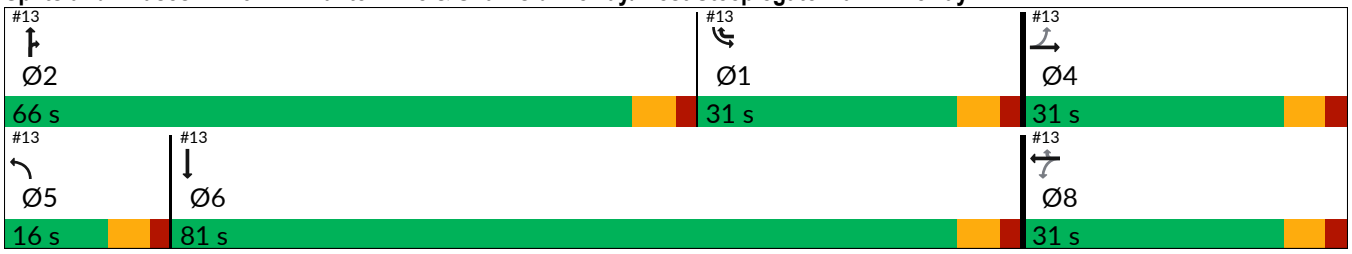
c Critical Lane Group

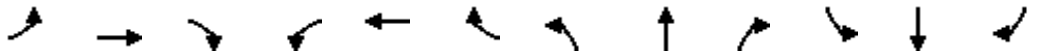


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Future Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.941				0.850			0.850		0.986	
Flt Protected		0.971			0.950		0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1829	1636	1787	3455	1546	3351	3407	0
Flt Permitted		0.806			0.700		0.950			0.950		
Satd. Flow (perm)	0	2738	0	0	1347	1636	1787	3455	1546	3351	3407	0
Satd. Flow (RTOR)		128				77			77		16	
Adj. Flow (vph)	51	0	33	43	0	29	19	267	41	66	283	30
Lane Group Flow (vph)	0	84	0	0	43	29	19	267	41	66	313	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	16.0	66.0	66.0	31.0	81.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%	24.2%	12.5%	51.6%	51.6%	24.2%	63.3%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	10.0	60.0	60.0	25.0	75.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.11			0.12	0.04	0.04	0.14	0.05	0.08	0.13	
Control Delay (s/veh)		2.2			13.9	0.5	14.4	10.2	2.0	13.4	6.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		2.2			13.9	0.5	14.4	10.2	2.0	13.4	6.0	
Queue Length 50th (ft)		0			8	0	3	24	0	6	13	
Queue Length 95th (ft)		4			28	2	16	50	8	18	54	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130		130	150		
Base Capacity (vph)		2183			1061	1304	644	3455	1546	2639	3407	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.04			0.04	0.02	0.03	0.08	0.03	0.03	0.09	

Intersection Summary
Cycle Length: 128
Actuated Cycle Length: 35.4
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Future Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3297			1829	1636	1787	3455	1546	3351	3405	
Flt Permitted		0.81			0.70	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2737			1347	1636	1787	3455	1546	3351	3405	
Peak-hour factor, PHF	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	0	33	43	0	29	19	267	41	66	283	30
RTOR Reduction (vph)	0	73	0	0	0	20	0	0	24	0	8	0
Lane Group Flow (vph)	0	11	0	0	43	9	19	267	17	66	305	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		3.8			3.8	9.4	1.1	15.6	15.6	5.6	20.1	
Effective Green, g (s)		5.8			5.8	13.4	3.1	17.6	17.6	7.6	22.1	
Actuated g/C Ratio		0.13			0.13	0.31	0.07	0.41	0.41	0.18	0.51	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		369			181	662	128	1414	632	592	1750	
v/s Ratio Prot						0.00	0.01	c0.08	0.01	0.02	c0.09	
v/s Ratio Perm		0.00			c0.03	0.00						
v/c Ratio		0.03			0.24	0.01	0.15	0.19	0.03	0.11	0.17	
Uniform Delay, d1		16.2			16.6	10.2	18.7	8.1	7.6	14.9	5.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0			0.7	0.0	0.5	0.1	0.0	0.1	0.0	
Delay (s)		16.2			17.3	10.2	19.3	8.2	7.6	14.9	5.6	
Level of Service		B			B	B	B	A	A	B	A	
Approach Delay (s/veh)		16.2			14.5			8.8			7.3	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	43.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	14	32	562	95	42	625
Future Vol, veh/h	14	32	562	95	42	625
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	75	75	94	94	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	19	43	598	101	47	694

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1089	349	0	0	699	0
Stage 1	648	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	213	653	-	-	900	-
Stage 1	488	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	202	653	-	-	900	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	622	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	15.98	0	0.58
HCM LOS	C		

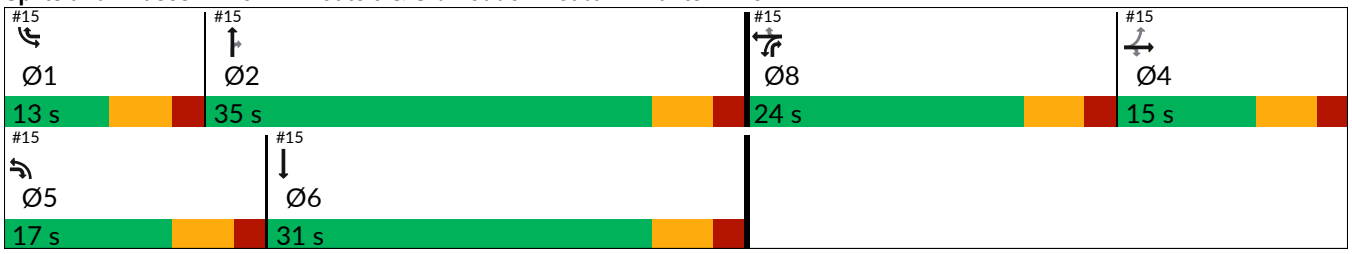
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	389	900	-
HCM Lane V/C Ratio	-	-	0.158	0.052	-
HCM Ctrl Dly (s/v)	-	-	16	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.2	-

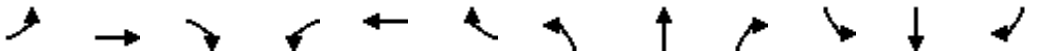
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Future Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.990		0.950	0.961		0.950			0.950		
Satd. Flow (prot)	0	1818	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Flt Permitted		0.886		0.950	0.961		0.950			0.950		
Satd. Flow (perm)	0	1627	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Satd. Flow (RTOR)			113			113			276		3	
Adj. Flow (vph)	8	31	72	269	29	42	51	333	276	62	400	9
Lane Group Flow (vph)	0	39	72	148	150	42	51	333	276	62	409	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	15.0	15.0	17.0	24.0	24.0	13.0	17.0	35.0	24.0	13.0	31.0	
Total Split (%)	17.2%	17.2%	19.5%	27.6%	27.6%	14.9%	19.5%	40.2%	27.6%	14.9%	35.6%	
Maximum Green (s)	9.0	9.0	11.0	18.0	18.0	7.0	11.0	29.0	18.0	7.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.13	0.14	0.34	0.33	0.05	0.15	0.27	0.21	0.10	0.41	
Control Delay (s/veh)		27.9	2.2	23.4	23.1	0.1	27.0	16.8	1.5	27.3	20.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		27.9	2.2	23.4	23.1	0.1	27.0	16.8	1.5	27.3	20.1	
Queue Length 50th (ft)		10	0	35	36	0	13	38	0	8	50	
Queue Length 95th (ft)		46	12	121	122	0	55	103	27	33	133	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		392	635	719	752	845	509	2191	1333	677	1974	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.10	0.11	0.21	0.20	0.05	0.10	0.15	0.21	0.09	0.21	

Intersection Summary

Cycle Length: 87
Actuated Cycle Length: 54
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Future Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1818	1561	1641	1718	1492	1787	3455	1599	3433	3410	
Flt Permitted		0.89	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1628	1561	1641	1718	1492	1787	3455	1599	3433	3410	
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)	8	31	72	269	29	42	51	333	276	62	400	9
RTOR Reduction (vph)	0	0	57	0	0	28	0	0	120	0	2	0
Lane Group Flow (vph)	0	39	15	148	150	14	51	333	156	62	407	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		2.4	8.2	12.1	12.1	15.5	5.8	17.2	29.3	3.4	14.8	
Effective Green, g (s)		4.4	12.2	14.1	14.1	19.5	7.8	19.2	33.3	5.4	16.8	
Actuated g/C Ratio		0.07	0.21	0.24	0.24	0.33	0.13	0.32	0.56	0.09	0.28	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		121	427	391	409	492	235	1122	1009	313	969	
v/s Ratio Prot			0.00	c0.09	0.09	0.00	c0.03	0.10	0.04	0.02	c0.12	
v/s Ratio Perm		c0.02	0.00			0.01			0.06			
v/c Ratio		0.32	0.03	0.38	0.37	0.03	0.22	0.30	0.15	0.20	0.42	
Uniform Delay, d1		25.9	18.7	18.8	18.8	13.4	22.9	14.9	6.2	24.8	17.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.0	0.6	0.6	0.0	0.5	0.1	0.1	0.3	0.3	
Delay (s)		27.5	18.8	19.4	19.3	13.4	23.4	15.1	6.2	25.2	17.5	
Level of Service		C	B	B	B	B	C	B	A	C	B	
Approach Delay (s/veh)		21.8			18.7			12.0			18.5	
Approach LOS		C			B			B			B	

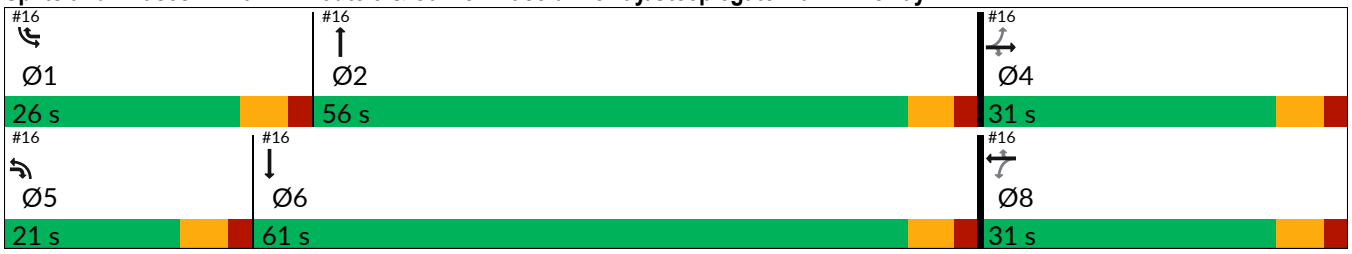
Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

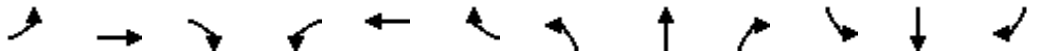
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Future Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.977			0.983	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1671	1495	0	1829	1636	1829	3343	0	1752	3330	0
Flt Permitted		0.816			0.816		0.950			0.950		
Satd. Flow (perm)	0	1436	1495	0	1571	1636	1829	3343	0	1752	3330	0
Satd. Flow (RTOR)			39			97		24			18	
Adj. Flow (vph)	40	0	39	54	0	97	50	282	51	124	377	48
Lane Group Flow (vph)	0	40	39	0	54	97	50	333	0	124	425	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	31.0	31.0	21.0	31.0	31.0	26.0	21.0	56.0		26.0	61.0	
Total Split (%)	27.4%	27.4%	18.6%	27.4%	27.4%	23.0%	18.6%	49.6%		23.0%	54.0%	
Maximum Green (s)	25.0	25.0	15.0	25.0	25.0	20.0	15.0	50.0		20.0	55.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.12	0.07		0.14	0.14	0.12	0.26		0.25	0.20	
Control Delay (s/veh)		15.2	3.1		15.1	2.0	15.5	10.9		14.2	8.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.2	3.1		15.1	2.0	15.5	10.9		14.2	8.4	
Queue Length 50th (ft)		5	0		6	0	6	15		13	18	
Queue Length 95th (ft)		32	12		38	14	36	68		68	81	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		1033	873		1130	1184	828	3329		1026	3330	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.04	0.04		0.05	0.08	0.06	0.10		0.12	0.13	

Intersection Summary
Cycle Length: 113
Actuated Cycle Length: 39.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Future Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671	1495		1829	1636	1829	3343		1752	3331	
Flt Permitted		0.82	1.00		0.82	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1436	1495		1571	1636	1829	3343		1752	3331	
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)	40	0	39	54	0	97	50	282	51	124	377	48
RTOR Reduction (vph)	0	0	30	0	0	63	0	15	0	0	9	0
Lane Group Flow (vph)	0	40	9	0	54	34	50	318	0	124	416	0
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		2.9	7.2		2.9	12.0	4.3	16.0		9.1	20.8	
Effective Green, g (s)		4.9	11.2		4.9	16.0	6.3	18.0		11.1	22.8	
Actuated g/C Ratio		0.11	0.24		0.11	0.35	0.14	0.39		0.24	0.50	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		152	494		167	711	250	1308		422	1651	
v/s Ratio Prot			0.00			0.01	0.03	0.10		c0.07	c0.12	
v/s Ratio Perm		0.03	0.00		c0.03	0.01						
v/c Ratio		0.26	0.02		0.32	0.05	0.20	0.24		0.29	0.25	
Uniform Delay, d1		18.9	13.2		19.0	9.9	17.6	9.4		14.2	6.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.0		1.1	0.0	0.4	0.1		0.4	0.1	
Delay (s)		19.8	13.2		20.1	10.0	18.0	9.5		14.6	6.8	
Level of Service		B	B		C	A	B	A		B	A	
Approach Delay (s/veh)		16.6			13.6			10.6			8.5	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	12	364	14	17	483
Future Vol, veh/h	11	12	364	14	17	483
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	13	396	15	19	537

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	709	205	0	0	411	0
Stage 1	403	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	368	801	-	-	1144	-
Stage 1	643	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	362	801	-	-	1144	-
Mov Cap-2 Maneuver	362	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	720	-	-	-	-	-

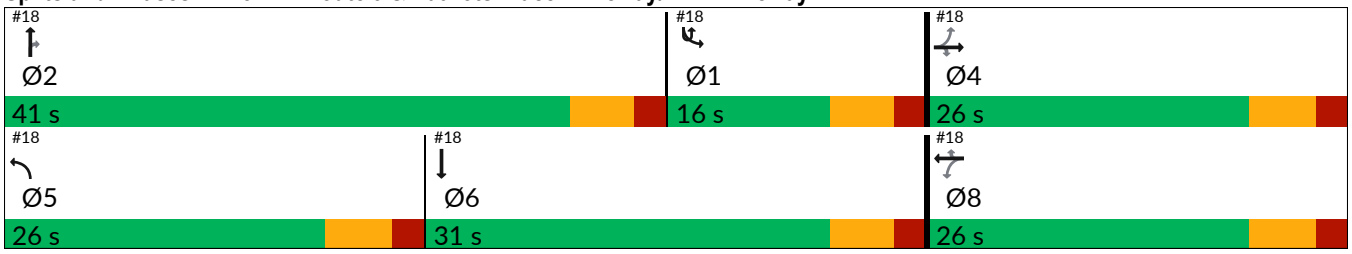
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.47	0	0.28
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	507	1144	-
HCM Lane V/C Ratio	-	-	0.05	0.017	-
HCM Ctrl Dly (s/v)	-	-	12.5	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Future Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.994
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3335
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3335
Satd. Flow (RTOR)			197			197			118			5
Adj. Flow (vph)	3	1	9	44	2	3	14	392	11	1	6	519
Lane Group Flow (vph)	0	4	9	0	46	3	14	392	11	0	7	541
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.11	0.01	0.03	0.15	0.01		0.02	0.21
Control Delay (s/veh)		13.3	0.0		13.5	0.0	14.8	5.8	0.0		13.8	5.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		13.3	0.0		13.5	0.0	14.8	5.8	0.0		13.8	5.3
Queue Length 50th (ft)		1	0		6	0	2	0	0		1	0
Queue Length 95th (ft)		5	0		22	0	16	77	0		10	98
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		947	1139		1011	1098	1176	3218	1447		629	2820
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.05	0.00	0.01	0.12	0.01		0.01	0.19

Intersection Summary
Cycle Length: 83
Actuated Cycle Length: 35
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	22
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

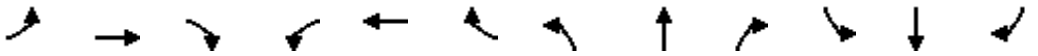
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Future Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3335
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3335
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	1	9	44	2	3	14	392	11	1	6	519
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	5	0	0	2
Lane Group Flow (vph)	0	4	1	0	46	0	14	392	6	0	7	539
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	0.9	21.9	21.9		1.3	22.3
Effective Green, g (s)		4.7	4.7		4.7	4.7	2.9	23.9	23.9		3.3	24.3
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.07	0.54	0.54		0.08	0.55
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		152	172		162	166	116	1862	833		130	1846
v/s Ratio Prot							0.01	c0.11			0.00	c0.16
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.00			
v/c Ratio		0.03	0.01		0.28	0.00	0.12	0.21	0.01		0.05	0.29
Uniform Delay, d1		17.6	17.5		18.1	17.5	19.3	5.1	4.6		18.9	5.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		1.0	0.0	0.5	0.1	0.0		0.2	0.1
Delay (s)		17.6	17.5		19.0	17.5	19.8	5.2	4.6		19.0	5.3
Level of Service		B	B		B	B	B	A	A		B	A
Approach Delay (s/veh)		17.6			18.9			5.7				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	22
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

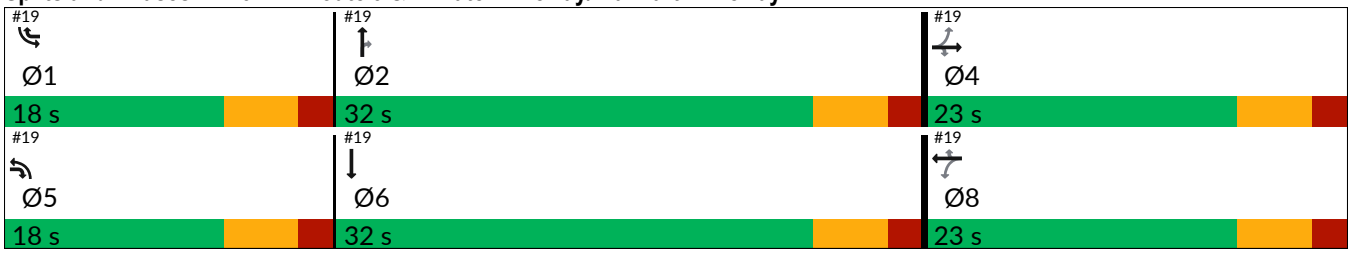
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Future Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3458	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3458	0
Satd. Flow (RTOR)			77			48			134		10	
Adj. Flow (vph)	57	13	77	25	7	48	38	259	12	57	451	28
Lane Group Flow (vph)	0	70	77	0	32	48	38	259	12	57	479	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	23.0	23.0	18.0	23.0	23.0	18.0	18.0	32.0	32.0	18.0	32.0	
Total Split (%)	31.5%	31.5%	24.7%	31.5%	31.5%	24.7%	24.7%	43.8%	43.8%	24.7%	43.8%	
Maximum Green (s)	17.0	17.0	12.0	17.0	17.0	12.0	12.0	26.0	26.0	12.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.19	0.11		0.10	0.07	0.09	0.13	0.01	0.14	0.23	
Control Delay (s/veh)		16.6	2.6		16.1	2.7	17.2	10.4	0.0	16.7	9.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		16.6	2.6		16.1	2.7	17.2	10.4	0.0	16.7	9.9	
Queue Length 50th (ft)		15	0		7	0	8	25	0	12	47	
Queue Length 95th (ft)		44	14		25	10	31	54	0	40	90	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		761	972		704	910	709	2586	1230	669	2591	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.09	0.08		0.05	0.05	0.05	0.10	0.01	0.09	0.18	

Intersection Summary
Cycle Length: 73
Actuated Cycle Length: 39.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Future Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3459	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3459	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	13	77	25	7	48	38	259	12	57	451	28
RTOR Reduction (vph)	0	0	57	0	0	35	0	0	6	0	5	0
Lane Group Flow (vph)	0	70	20	0	32	13	38	259	6	57	474	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.3	7.8		4.3	8.2	3.5	18.5	18.5	3.9	18.9	
Effective Green, g (s)		6.3	11.8		6.3	12.2	5.5	20.5	20.5	5.9	20.9	
Actuated g/C Ratio		0.14	0.26		0.14	0.27	0.12	0.46	0.46	0.13	0.47	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		199	570		184	554	219	1584	733	222	1617	
v/s Ratio Prot			0.00			0.00	0.02	0.07		c0.03	c0.14	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.35	0.04		0.17	0.02	0.17	0.16	0.01	0.26	0.29	
Uniform Delay, d1		17.4	12.2		16.9	11.9	17.6	7.1	6.6	17.4	7.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.5	0.0	0.4	0.0	0.0	0.6	0.1	
Delay (s)		18.4	12.2		17.4	11.9	17.9	7.1	6.6	18.0	7.4	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		15.2			14.1			8.4			8.6	
Approach LOS		B			B			A			A	

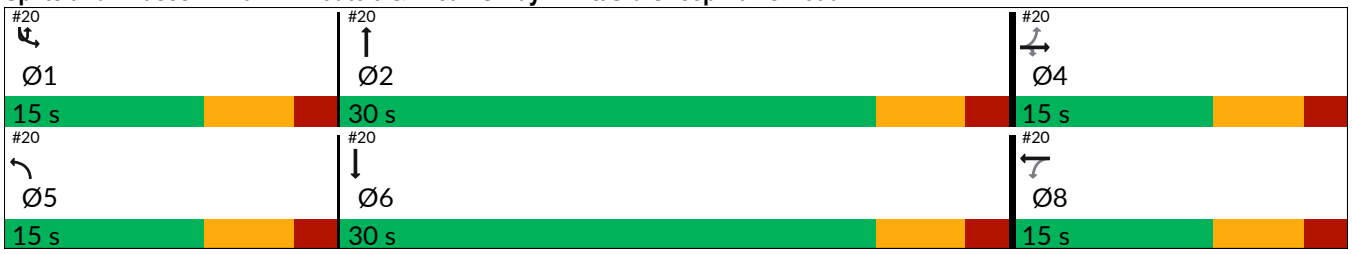
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	351	0	5	5	580
Future Volume (vph)	0	0	1	0	0	0	1	351	0	5	5	580
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850									
Flt Protected							0.950				0.950	
Satd. Flow (prot)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Flt Permitted							0.950				0.950	
Satd. Flow (perm)	0	1963	1669	0	2153	0	1668	3455	0	0	1805	3490
Satd. Flow (RTOR)			410									
Adj. Flow (vph)	0	0	4	0	0	0	1	377	0	6	6	644
Lane Group Flow (vph)	0	0	4	0	0	0	1	377	0	0	12	644
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	15.0	15.0	15.0	15.0	15.0		15.0	30.0		15.0	15.0	30.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	50.0%		25.0%	25.0%	50.0%
Maximum Green (s)	9.0	9.0	9.0	9.0	9.0		9.0	24.0		9.0	9.0	24.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio			0.01				0.00	0.12			0.03	0.20
Control Delay (s/veh)			0.0				17.0	2.6			15.9	2.5
Queue Delay			0.0				0.0	0.0			0.0	0.0
Total Delay (s/veh)			0.0				17.0	2.6			15.9	2.5
Queue Length 50th (ft)			0				0	0			1	0
Queue Length 95th (ft)			0				4	55			16	90
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)			813				534	3126			578	3171
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			0.00				0.00	0.12			0.02	0.20

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 36.8
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

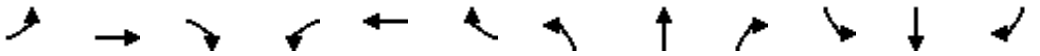
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	0	1	0	0	0	1	351	0	5	5	580
Future Volume (vph)	0	0	1	0	0	0	1	351	0	5	5	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)			4.0				4.0	4.0			4.0	4.0
Lane Util. Factor			1.00				1.00	0.95			1.00	0.95
Frt			0.85				1.00	1.00			1.00	1.00
Flt Protected			1.00				0.95	1.00			0.95	1.00
Satd. Flow (prot)			1669				1668	3455			1805	3490
Flt Permitted			1.00				0.95	1.00			0.95	1.00
Satd. Flow (perm)			1669				1668	3455			1805	3490
Peak-hour factor, PHF	0.25	0.25	0.25	0.90	0.90	0.90	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	0	0	4	0	0	0	1	377	0	6	6	644
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	1	377	0	0	12	644
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type			Perm				Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)			0.7				0.7	27.3			0.9	27.5
Effective Green, g (s)			2.7				2.7	29.3			2.9	29.5
Actuated g/C Ratio			0.06				0.06	0.62			0.06	0.63
Clearance Time (s)			6.0				6.0	6.0			6.0	6.0
Vehicle Extension (s)			3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			96				96	2158			111	2195
v/s Ratio Prot							0.00	0.11			c0.01	c0.18
v/s Ratio Perm			c0.00									
v/c Ratio			0.00				0.01	0.17			0.11	0.29
Uniform Delay, d1			20.8				20.8	3.7			20.8	4.0
Progression Factor			1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0				0.0	0.0			0.4	0.1
Delay (s)			20.8				20.9	3.7			21.2	4.0
Level of Service			C				C	A			C	A
Approach Delay (s/veh)		20.8			0.0			3.8				4.3
Approach LOS		C			A			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

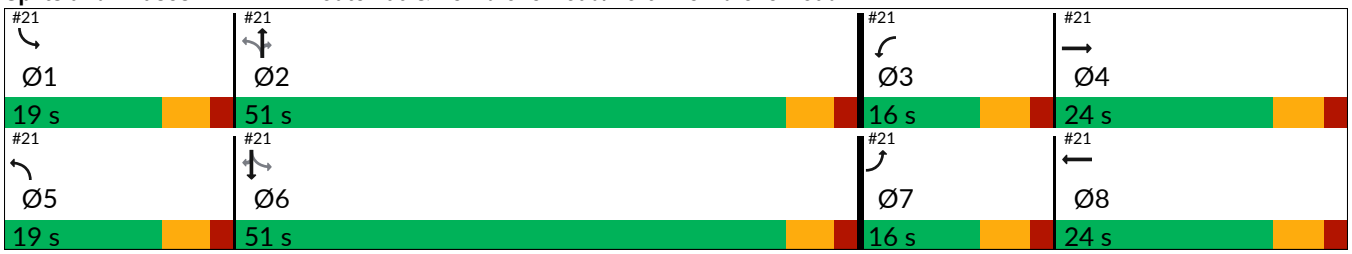


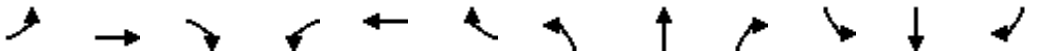
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Future Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1648	0	1770	1574	0	1776	1810	1538	1829	1863	1531
Flt Permitted	0.950			0.950			0.081			0.312		
Satd. Flow (perm)	1787	1648	0	1770	1574	0	151	1810	1538	601	1863	1531
Satd. Flow (RTOR)		123			27				149			149
Adj. Flow (vph)	53	26	123	67	91	62	74	550	31	51	1094	170
Lane Group Flow (vph)	53	149	0	67	153	0	74	550	31	51	1094	170
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.27	0.42		0.34	0.56		0.28	0.57	0.03	0.11	1.12	0.20
Control Delay (s/veh)	45.9	14.3		47.0	40.1		11.6	21.5	0.1	9.2	96.0	4.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	14.3		47.0	40.1		11.6	21.5	0.1	9.2	96.0	4.6
Queue Length 50th (ft)	31	14		40	75		18	252	0	12	~864	7
Queue Length 95th (ft)	73	70		88	144		42	427	0	31	#1238	48
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	238	462		236	371		367	962	888	586	974	871
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.32		0.28	0.41		0.20	0.57	0.03	0.09	1.12	0.20

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 93
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

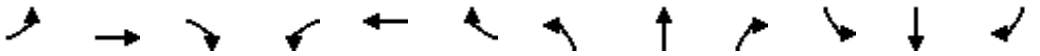




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Future Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1648		1770	1575		1776	1810	1538	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	1787	1648		1770	1575		151	1810	1538	600	1863	1531
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)	53	26	123	67	91	62	74	550	31	51	1094	170
RTOR Reduction (vph)	0	105	0	0	23	0	0	0	15	0	0	73
Lane Group Flow (vph)	53	44	0	67	130	0	74	550	16	51	1094	97
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	6.5	12.3		6.8	12.6		53.4	47.4	47.4	51.8	46.6	46.6
Effective Green, g (s)	8.5	14.3		8.8	14.6		57.4	49.4	49.4	55.8	48.6	48.6
Actuated g/C Ratio	0.09	0.15		0.09	0.15		0.60	0.52	0.52	0.58	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	158	246		162	240		226	934	793	442	946	777
v/s Ratio Prot	0.03	0.03		c0.04	c0.08		c0.03	0.30		0.01	c0.59	
v/s Ratio Perm							0.17		0.01	0.06		0.06
v/c Ratio	0.34	0.18		0.41	0.54		0.33	0.59	0.02	0.12	1.16	0.12
Uniform Delay, d1	40.9	35.6		41.0	37.5		19.2	16.1	11.3	9.9	23.6	12.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4		1.7	2.5		0.9	1.0	0.0	0.1	82.4	0.1
Delay (s)	42.2	35.9		42.7	40.0		20.1	17.0	11.3	10.0	106.0	12.4
Level of Service	D	D		D	D		C	B	B	B	F	B
Approach Delay (s/veh)		37.6			40.8			17.1			90.2	
Approach LOS		D			D			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Future Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.931				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1720	0	1736	1928	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.733			0.513			0.154			0.480		
Satd. Flow (perm)	1365	1720	0	937	1928	0	280	1818	1599	903	1818	1546
Satd. Flow (RTOR)		24			17				66			381
Adj. Flow (vph)	162	162	70	9	20	17	139	501	44	137	700	381
Lane Group Flow (vph)	162	232	0	9	37	0	139	501	44	137	700	381
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.47	0.51		0.04	0.07		0.31	0.46	0.04	0.39	0.98	0.45
Control Delay (s/veh)	23.8	21.2		17.0	11.9		7.3	8.3	1.2	19.8	53.6	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.8	21.2		17.0	11.9		7.3	8.3	1.2	19.8	53.6	4.1
Queue Length 50th (ft)	49	64		3	6		17	79	0	35	~284	0
Queue Length 95th (ft)	101	124		12	25		42	160	7	90	#515	52
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	452	586		310	650		487	1239	1111	355	715	839
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.40		0.03	0.06		0.29	0.40	0.04	0.39	0.98	0.45

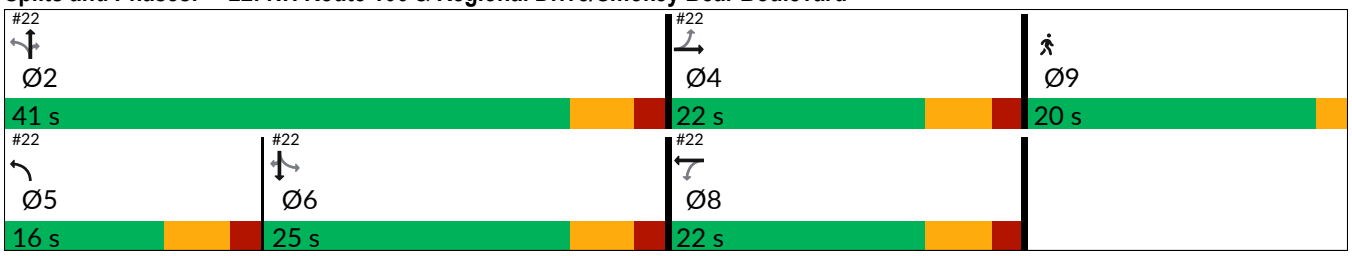
Intersection Summary
Cycle Length: 83

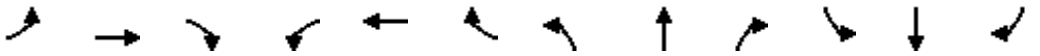
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 55.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

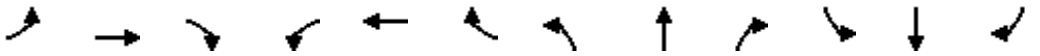




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Future Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1928		1728	1818	1599	1787	1818	1546
Flt Permitted	0.73	1.00		0.51	1.00		0.15	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	1365	1719		937	1928		281	1818	1599	902	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	162	162	70	9	20	17	139	501	44	137	700	381
RTOR Reduction (vph)	0	18	0	0	13	0	0	0	17	0	0	235
Lane Group Flow (vph)	162	214	0	9	24	0	139	501	27	137	700	146
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	12.2	12.2		12.2	12.2		32.8	32.8	32.8	19.9	19.9	19.9
Effective Green, g (s)	14.2	14.2		14.2	14.2		34.8	34.8	34.8	21.9	21.9	21.9
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.61	0.61	0.61	0.38	0.38	0.38
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	340	428		233	480		397	1109	976	346	698	593
v/s Ratio Prot		c0.12			0.01		0.05	c0.28			c0.38	
v/s Ratio Perm	0.12			0.01			0.16		0.02	0.15		0.09
v/c Ratio	0.48	0.50		0.04	0.05		0.35	0.45	0.03	0.40	1.00	0.25
Uniform Delay, d1	18.2	18.4		16.2	16.3		9.3	6.0	4.4	12.7	17.6	11.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.9		0.1	0.0		0.5	0.3	0.0	0.7	34.8	0.2
Delay (s)	19.3	19.3		16.3	16.3		9.8	6.3	4.4	13.5	52.3	12.2
Level of Service	B	B		B	B		A	A	A	B	D	B
Approach Delay (s/veh)		19.3			16.3			6.9			35.4	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

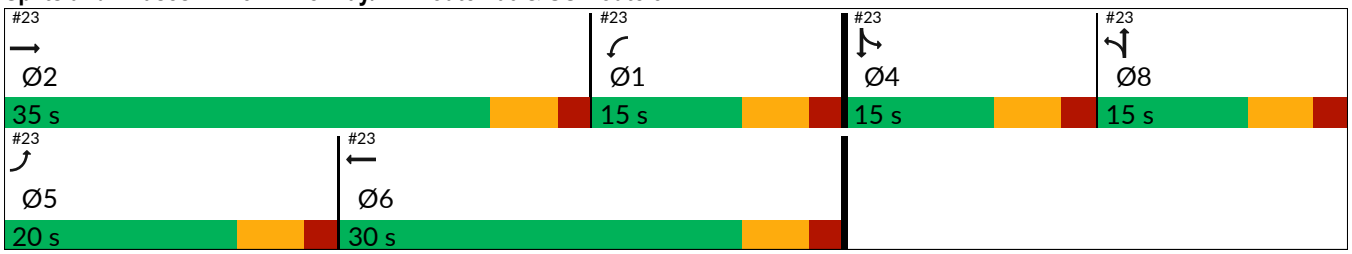


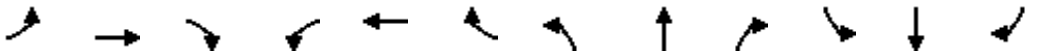
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	255	66	0	712	306	17	6	5	166	20	204
Future Volume (vph)	196	255	66	0	712	306	17	6	5	166	20	204
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1631	3261	1660	1818	3455	1759	3164	1717	1660	3164	1717	1509
Satd. Flow (RTOR)			368			368			368			368
Adj. Flow (vph)	218	283	73	0	791	340	19	7	6	184	22	227
Lane Group Flow (vph)	218	283	73	0	791	340	19	7	6	184	22	227
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	20.0	35.0		15.0	30.0		15.0	15.0		15.0	15.0	
Total Split (%)	25.0%	43.8%		18.8%	37.5%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	14.0	29.0		9.0	24.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.59	0.14	0.04		0.66	0.19	0.05	0.03	0.00	0.35	0.08	0.15
Control Delay (s/veh)	32.4	5.6	0.0		21.8	0.2	30.1	30.5	0.0	29.0	28.5	0.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	5.6	0.0		21.8	0.2	30.1	30.5	0.0	29.0	28.5	0.2
Queue Length 50th (ft)	75	15	0		124	0	3	3	0	33	7	0
Queue Length 95th (ft)	#186	48	0		235	0	14	16	0	76	31	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150			200	250		150	250		200
Base Capacity (vph)	424	2105	1660		1461	1759	566	307	1660	566	307	1509
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.13	0.04		0.54	0.19	0.03	0.02	0.00	0.33	0.07	0.15

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 63.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

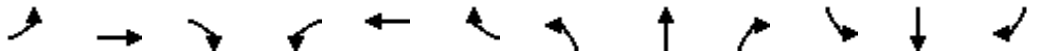




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	255	66	0	712	306	17	6	5	166	20	204
Future Volume (vph)	196	255	66	0	712	306	17	6	5	166	20	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1631	3261	1660		3455	1759	3164	1717	1660	3164	1717	1509
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)	218	283	73	0	791	340	19	7	6	184	22	227
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	218	283	73	0	791	340	19	7	6	184	22	227
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.4	38.9	67.4		20.5	67.4	2.1	2.1	67.4	8.4	8.4	67.4
Effective Green, g (s)	14.4	40.9	67.4		22.5	67.4	4.1	4.1	67.4	10.4	10.4	67.4
Actuated g/C Ratio	0.21	0.61	1.00		0.33	1.00	0.06	0.06	1.00	0.15	0.15	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	348	1978	1660		1153	1759	192	104	1660	488	264	1509
v/s Ratio Prot	c0.13	0.09			c0.23		0.01	0.00		c0.06	0.01	
v/s Ratio Perm			0.04			c0.19			0.00			0.15
v/c Ratio	0.63	0.14	0.04		0.69	0.19	0.10	0.07	0.00	0.38	0.08	0.15
Uniform Delay, d1	24.1	5.7	0.0		19.4	0.0	29.9	29.8	0.0	25.6	24.4	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.0	0.0		1.7	0.2	0.2	0.3	0.0	0.5	0.1	0.2
Delay (s)	27.6	5.7	0.0		21.1	0.2	30.1	30.1	0.0	26.1	24.6	0.2
Level of Service	C	A	A		C	A	C	C	A	C	C	A
Approach Delay (s/veh)		13.3			14.8			24.5			12.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Future Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	1770	3303	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.732			0.757	
Satd. Flow (perm)	1770	3303	0	1689	3196	0	0	1391	1830	0	1299	1459
Satd. Flow (RTOR)					2				150			376
Adj. Flow (vph)	701	1022	3	0	1078	28	1	0	1	38	0	376
Lane Group Flow (vph)	701	1025	0	0	1106	0	0	1	1	0	38	376
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.11	0.38			0.84			0.01	0.00		0.27	0.76
Control Delay (s/veh)	100.9	3.1			33.0			38.0	0.0		44.2	15.7
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	100.9	3.1			33.0			38.0	0.0		44.2	15.7
Queue Length 50th (ft)	~495	66			322			1	0		23	0
Queue Length 95th (ft)	#734	99			#435			6	0		56	#101
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	631	2670			1310			175	361		163	512
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	1.11	0.38			0.84			0.01	0.00		0.23	0.73

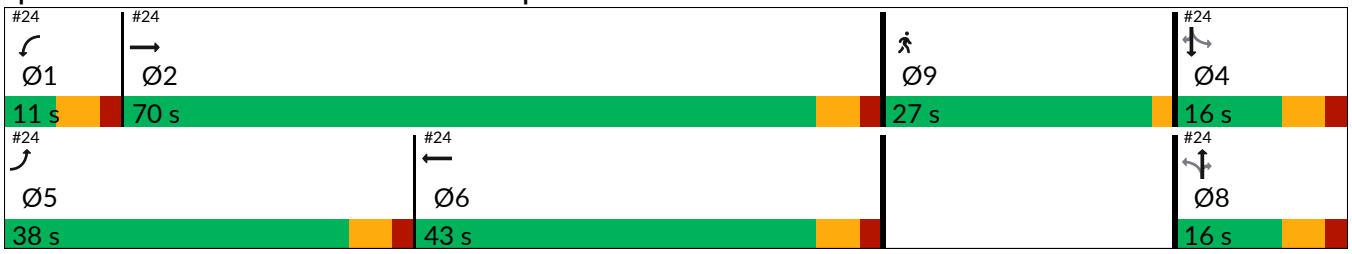
Intersection Summary
Cycle Length: 124

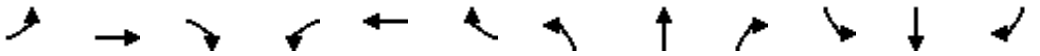
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

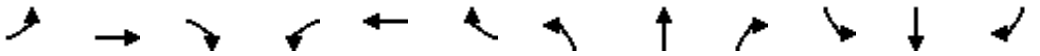




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Future Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3302			3197			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.73	1.00		0.76	1.00
Satd. Flow (perm)	1770	3302			3197			1391	1830		1300	1459
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)	701	1022	3	0	1078	28	1	0	1	38	0	376
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	1	0	0	336
Lane Group Flow (vph)	701	1025	0	0	1105	0	0	1	0	0	38	40
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	32.0	75.0			37.0			8.2	8.2		8.2	8.2
Effective Green, g (s)	34.0	77.0			39.0			10.2	10.2		10.2	10.2
Actuated g/C Ratio	0.36	0.81			0.41			0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	632	2670			1309			149	196		139	156
v/s Ratio Prot	c0.40	0.31			c0.35							
v/s Ratio Perm								0.00	0.00		c0.03	0.03
v/c Ratio	1.11	0.38			0.84			0.01	0.00		0.27	0.26
Uniform Delay, d1	30.6	2.5			25.4			38.0	37.9		39.1	39.0
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	69.6	0.1			5.2			0.0	0.0		1.1	0.9
Delay (s)	100.2	2.6			30.5			38.0	37.9		40.2	39.9
Level of Service	F	A			C			D	D		D	D
Approach Delay (s/veh)		42.2			30.5			38.0			39.9	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	843	8	8	1274	53	1	0	9	19	0	18
Future Volume (vph)	15	843	8	8	1274	53	1	0	9	19	0	18
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	4911	0	1652	3401	0	1805	1615	0	1727	1495	0
Flt Permitted	0.950			0.950			0.744			0.751		
Satd. Flow (perm)	1711	4911	0	1652	3401	0	1414	1615	0	1365	1495	0
Satd. Flow (RTOR)		1			6			729			186	
Adj. Flow (vph)	16	906	9	9	1416	59	1	0	10	21	0	20
Lane Group Flow (vph)	16	915	0	9	1475	0	1	10	0	21	20	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	34.0		26.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.8%	27.6%		21.1%			26.8%	26.8%		26.8%	26.8%	
Maximum Green (s)	6.0	28.0		20.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.14	0.55		0.03	0.59		0.00	0.01		0.10	0.05	
Control Delay (s/veh)	57.5	35.9		45.5	2.5		41.0	0.0		43.7	0.3	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.5	35.9		45.5	2.8		41.0	0.0		43.7	0.3	
Queue Length 50th (ft)	12	216		5	35		1	0		16	0	
Queue Length 95th (ft)	37	302		m7	m50		6	0		40	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	111	1660		304	2483		333	937		321	494	
Starvation Cap Reductn	0	0		0	396		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	0.14	0.55		0.03	0.71		0.00	0.01		0.07	0.04	

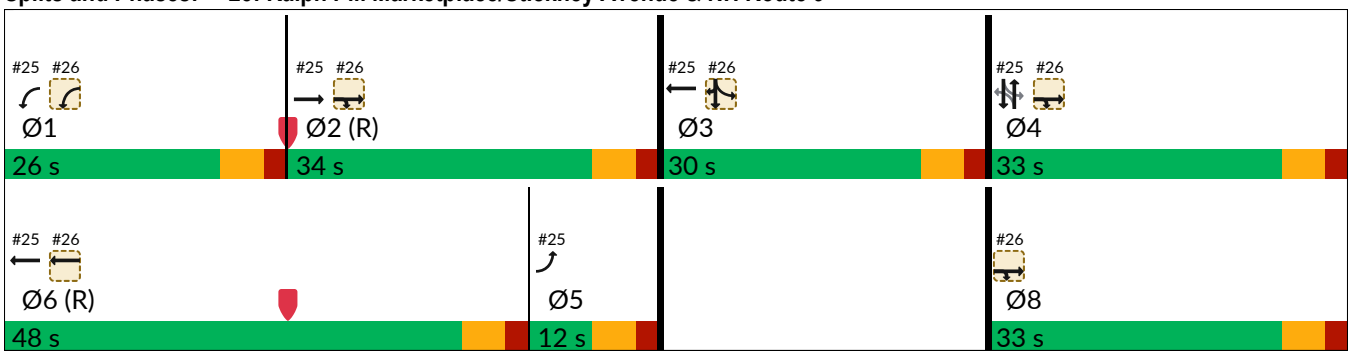
Intersection Summary
Cycle Length: 123

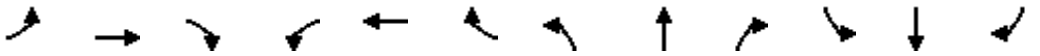
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	30.0	48.0	33.0
Total Split (%)	24%	39%	27%
Maximum Green (s)	24.0	42.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

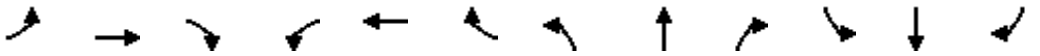




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	843	8	8	1274	53	1	0	9	19	0	18
Future Volume (vph)	15	843	8	8	1274	53	1	0	9	19	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	4909		1652	3401		1805	1615		1727	1495	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	1711	4909		1652	3401		1414	1615		1365	1495	
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	906	9	9	1416	59	1	0	10	21	0	20
RTOR Reduction (vph)	0	1	0	0	2	0	0	8	0	0	17	0
Lane Group Flow (vph)	16	914	0	9	1473	0	1	2	0	21	3	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	8%	8%	8%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	39.5		18.4	79.7		16.9	16.9		16.9	16.9	
Effective Green, g (s)	4.4	41.5		20.4	83.7		18.9	18.9		18.9	18.9	
Actuated g/C Ratio	0.04	0.34		0.17	0.68		0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	61	1656		273	2314		217	248		209	229	
v/s Ratio Prot	0.01	c0.19		0.01	c0.43			0.00			0.00	
v/s Ratio Perm							0.00			c0.02		
v/c Ratio	0.26	0.55		0.03	0.64		0.00	0.01		0.10	0.01	
Uniform Delay, d1	57.7	33.2		43.0	11.1		44.1	44.1		44.7	44.1	
Progression Factor	1.00	1.00		1.11	0.27		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	1.3		0.0	0.4		0.0	0.0		0.2	0.0	
Delay (s)	60.0	34.5		47.8	3.4		44.1	44.1		45.0	44.2	
Level of Service	E	C		D	A		D	D		D	D	
Approach Delay (s/veh)		35.0			3.7			44.1			44.6	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	738	133	308	852	0	0	0	0	266	0	483
Future Volume (vph)	0	738	133	308	852	0	0	0	0	266	0	483
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3173	3271	0	0	0	0	0	1770	1583
Satd. Flow (RTOR)			143									269
Adj. Flow (vph)	0	794	143	342	947	0	0	0	0	296	0	537
Lane Group Flow (vph)	0	794	143	342	947	0	0	0	0	0	296	537
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				26.0	48.0					30.0	30.0	30.0
Total Split (%)				21.1%	39.0%					24.4%	24.4%	24.4%
Maximum Green (s)				20.0	42.0					24.0	24.0	24.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.33	0.15	0.65	0.58						0.79	0.98
Control Delay (s/veh)		1.4	0.3	56.2	15.2						61.7	58.3
Queue Delay		0.1	0.3	3.6	1.7						0.5	0.0
Total Delay (s/veh)		1.5	0.5	59.8	16.9						62.2	58.3
Queue Length 50th (ft)		7	0	115	160						228	243
Queue Length 95th (ft)		9	0	139	347						#364	#484
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2820	1090	585	1626						377	548
Starvation Cap Reductn		714	530	159	475						0	0
Spillback Cap Reductn		94	0	0	7						7	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.38	0.26	0.80	0.82						0.80	0.98

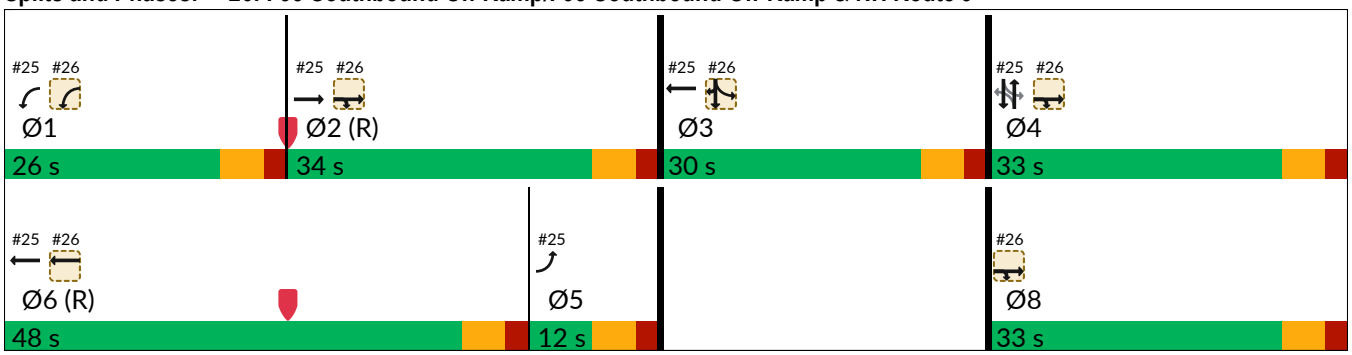
Intersection Summary
Cycle Length: 123

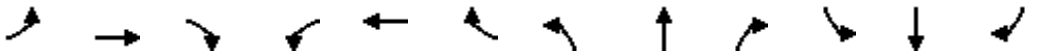
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	34.0	33.0	12.0	33.0
Total Split (%)	28%	27%	10%	27%
Maximum Green (s)	28.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 123
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

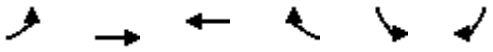




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	738	133	308	852	0	0	0	0	266	0	483
Future Volume (vph)	0	738	133	308	852	0	0	0	0	266	0	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3173	3271						1770	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3173	3271						1770	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	794	143	342	947	0	0	0	0	296	0	537
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	212
Lane Group Flow (vph)	0	794	70	342	947	0	0	0	0	0	296	325
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		56.4	56.4	18.4	55.5						24.2	24.2
Effective Green, g (s)		60.4	60.4	20.4	57.5						26.2	26.2
Actuated g/C Ratio		0.49	0.49	0.17	0.47						0.21	0.21
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2414	880	526	1529						377	337
v/s Ratio Prot		c0.16	0.04	0.11	c0.29						0.17	c0.21
v/s Ratio Perm												
v/c Ratio		0.33	0.08	0.65	0.62						0.79	0.97
Uniform Delay, d1		19.0	16.6	48.0	24.5						45.7	47.9
Progression Factor		0.11	0.01	1.06	0.57						1.00	1.00
Incremental Delay, d2		0.1	0.0	2.8	1.8						10.3	39.4
Delay (s)		2.1	0.2	53.4	15.9						56.0	87.4
Level of Service		A	A	D	B						E	F
Approach Delay (s/veh)		1.8			25.8			0.0			76.2	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

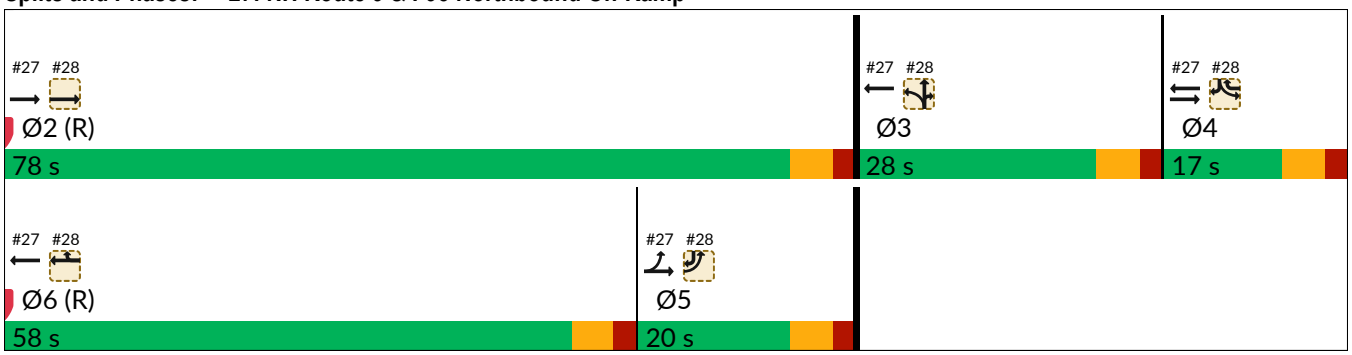


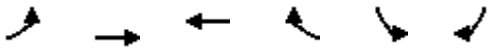
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	153	851	1160	101	0	0				
Future Volume (vph)	153	851	1160	101	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1652	3303	4700	1620	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1652	3303	4700	1620	0	0				
Satd. Flow (RTOR)				76						
Adj. Flow (vph)	170	946	1289	112	0	0				
Lane Group Flow (vph)	170	946	1289	112	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	20.0						78.0	28.0	17.0	58.0
Total Split (%)	16.3%						63%	23%	14%	47%
Maximum Green (s)	14.0						72.0	22.0	11.0	52.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.77	0.39	0.34	0.07						
Control Delay (s/veh)	61.8	7.8	1.6	0.1						
Queue Delay	8.2	0.6	0.3	0.0						
Total Delay (s/veh)	70.0	8.4	1.9	0.1						
Queue Length 50th (ft)	139	127	54	0						
Queue Length 95th (ft)	m#220	156	39	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	220	2443	3805	1620						
Starvation Cap Reductn	27	991	1623	0						
Spillback Cap Reductn	0	64	319	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.88	0.65	0.59	0.07						

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	153	851	1160	101	0	0
Future Volume (vph)	153	851	1160	101	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	2.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1652	3303	4700	1620		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1652	3303	4700	1620		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	170	946	1289	112	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	170	946	1289	112	0	0
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	14.4	88.4	96.6	123.0		
Effective Green, g (s)	16.4	90.4	98.6	123.0		
Actuated g/C Ratio	0.13	0.73	0.80	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	220	2427	3767	1620		
v/s Ratio Prot	c0.10	c0.29	c0.27			
v/s Ratio Perm				0.07		
v/c Ratio	0.77	0.39	0.34	0.07		
Uniform Delay, d1	51.5	6.1	3.3	0.0		
Progression Factor	0.76	1.22	0.43	1.00		
Incremental Delay, d2	14.5	0.1	0.0	0.1		
Delay (s)	53.5	7.5	1.5	0.1		
Level of Service	D	A	A	A		
Approach Delay (s/veh)		14.5	1.4		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

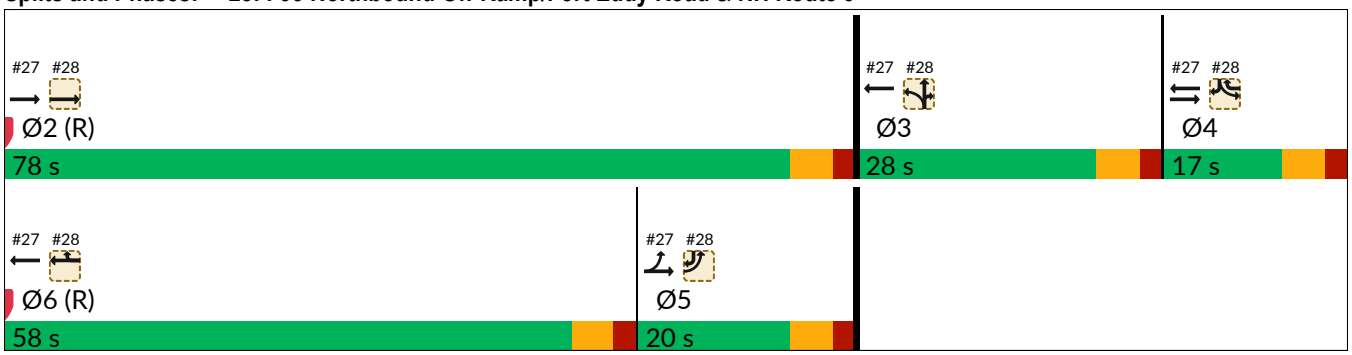
c Critical Lane Group

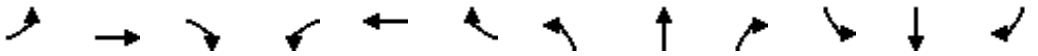
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	724	0	0	862	101	220	144	563	102	0	179
Future Volume (vph)	113	724	0	0	862	101	220	144	563	102	0	179
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.901	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3204	3421	0	0	3455	1652	1752	3025	1474	3367	0	1605
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3204	3421	0	0	3455	1652	1752	3025	1474	3367	0	1605
Satd. Flow (RTOR)						110		201	201			107
Adj. Flow (vph)	126	804	0	0	937	110	244	160	626	113	0	199
Lane Group Flow (vph)	126	804	0	0	937	110	244	473	313	113	0	199
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Detector Phase	5	2			6	4 6	3	3	3	4		4 5
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Minimum Split (s)	12.0	23.0			32.0		12.0	12.0	12.0	12.0		
Total Split (s)	20.0	78.0			58.0		28.0	28.0	28.0	17.0		
Total Split (%)	16.3%	63.4%			47.2%		22.8%	22.8%	22.8%	13.8%		
Maximum Green (s)	14.0	72.0			52.0		22.0	22.0	22.0	11.0		
Yellow Time (s)	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		
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0	-2.0	-2.0		
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0	4.0		
Lead/Lag	Lag				Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Recall Mode	None	C-Min			C-Min		None	None	None	None		
Walk Time (s)		7.0			7.0							
Flash Don't Walk (s)		10.0			19.0							
Pedestrian Calls (#/hr)		0			0							
v/c Ratio	0.29	0.39			0.63	0.11	0.70	0.62	0.69	0.32		0.43
Control Delay (s/veh)	33.9	7.2			30.0	3.5	57.8	29.4	25.1	53.6		13.1
Queue Delay	0.0	0.3			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	33.9	7.5			30.0	3.5	57.8	29.4	25.1	53.6		13.1
Queue Length 50th (ft)	44	126			320	3	188	111	91	44		39
Queue Length 95th (ft)	54	211			392	9	#288	174	213	76		86
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	428	2058			1516	1000	350	766	455	355		465
Starvation Cap Reductn	0	612			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	0.29	0.56			0.62	0.11	0.70	0.62	0.69	0.32		0.43

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 86 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

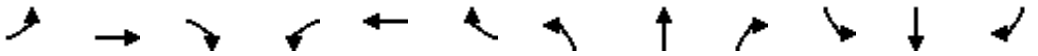




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	724	0	0	862	101	220	144	563	102	0	179
Future Volume (vph)	113	724	0	0	862	101	220	144	563	102	0	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3204	3421			3455	1652	1752	3024	1474	3367		1605
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3204	3421			3455	1652	1752	3024	1474	3367		1605
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	126	804	0	0	937	110	244	160	626	113	0	199
RTOR Reduction (vph)	0	0	0	0	0	47	0	161	161	0	0	81
Lane Group Flow (vph)	126	804	0	0	937	63	244	312	152	113	0	118
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA			NA	pt+ov	Split	NA	Prot	Prot		pt+ov
Protected Phases	5	2			6	4 6	3	3	3	4		4 5
Permitted Phases												
Actuated Green, G (s)	14.4	71.4			51.0	68.0	22.6	22.6	22.6	11.0		25.4
Effective Green, g (s)	16.4	73.4			53.0	70.0	24.6	24.6	24.6	13.0		29.4
Actuated g/C Ratio	0.13	0.60			0.43	0.57	0.20	0.20	0.20	0.11		0.24
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	427	2041			1488	940	350	604	294	355		383
v/s Ratio Prot	0.04	c0.24			c0.27	0.04	c0.14	0.10	0.10	c0.03		0.07
v/s Ratio Perm												
v/c Ratio	0.30	0.39			0.63	0.07	0.70	0.52	0.52	0.32		0.31
Uniform Delay, d1	48.1	13.1			27.3	11.9	45.7	43.9	43.9	50.9		38.4
Progression Factor	0.66	0.51			1.02	1.53	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	0.5			2.0	0.0	5.9	0.7	1.5	0.5		0.5
Delay (s)	32.2	7.2			29.8	18.1	51.7	44.6	45.4	51.4		38.9
Level of Service	C	A			C	B	D	D	D	D		D
Approach Delay (s/veh)		10.6			28.6			46.6			43.4	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

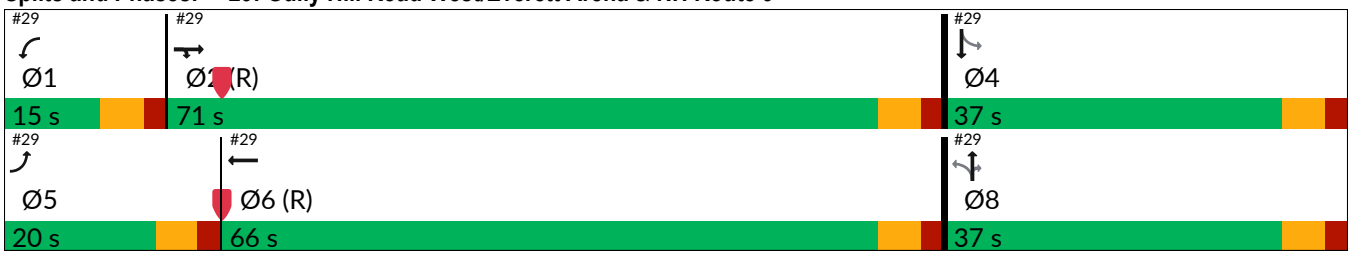


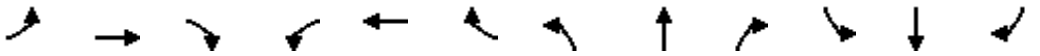
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Future Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1728	3455	1492	1728	3455	0	0	1752	1620	0	1792	0
Flt Permitted	0.950			0.950				0.748				
Satd. Flow (perm)	1728	3455	1492	1728	3455	0	0	1380	1620	0	1792	0
Satd. Flow (RTOR)			80						80		12	
Adj. Flow (vph)	3	1392	163	31	968	0	44	0	10	0	2	12
Lane Group Flow (vph)	3	1392	163	31	968	0	0	44	10	0	14	0
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0	
Total Split (s)	20.0	71.0	71.0	15.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	16.3%	57.7%	57.7%	12.2%	53.7%		30.1%	30.1%	30.1%	30.1%	30.1%	
Maximum Green (s)	14.0	65.0	65.0	9.0	60.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)		24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
v/c Ratio	0.03	0.51	0.14	0.23	0.33			0.34	0.04		0.08	
Control Delay (s/veh)	60.7	5.3	2.7	68.2	1.9			58.6	0.3		26.3	
Queue Delay	0.0	0.0	0.0	0.0	0.1			0.0	0.0		0.0	
Total Delay (s/veh)	60.7	5.3	2.7	68.2	2.0			58.6	0.3		26.3	
Queue Length 50th (ft)	2	162	11	25	63			34	0		1	
Queue Length 95th (ft)	m6	150	m7	63	32			69	0		6	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150								
Base Capacity (vph)	224	2747	1203	158	2928			370	493		489	
Starvation Cap Reductn	0	0	0	0	479			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	0.01	0.51	0.14	0.20	0.40			0.12	0.02		0.03	

Intersection Summary
Cycle Length: 123

Actuated Cycle Length: 123
Offset: 55 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Future Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	3455			1752	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	3455			1380	1620		1792	
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	3	1392	163	31	968	0	44	0	10	0	2	12
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	9	0	11	0
Lane Group Flow (vph)	3	1392	144	31	968	0	0	44	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA	
Protected Phases	5	2	2	1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.3	91.4	91.4	5.3	95.4			8.3	8.3		8.3	
Effective Green, g (s)	3.3	93.4	93.4	7.3	97.4			10.3	10.3		10.3	
Actuated g/C Ratio	0.03	0.76	0.76	0.06	0.79			0.08	0.08		0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2623	1132	102	2735			115	135		150	
v/s Ratio Prot	0.00	c0.40	0.10	c0.02	c0.28						0.00	
v/s Ratio Perm								c0.03	0.00			
v/c Ratio	0.07	0.53	0.13	0.30	0.35			0.38	0.01		0.02	
Uniform Delay, d1	58.3	6.0	3.9	55.4	3.7			53.3	51.7		51.7	
Progression Factor	1.12	0.70	0.85	1.23	0.50			1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.7	0.2	1.6	0.3			2.1	0.0		0.1	
Delay (s)	65.8	4.9	3.6	69.8	2.2			55.5	51.7		51.8	
Level of Service	E	A	A	E	A			E	D		D	
Approach Delay (s/veh)		4.9			4.3			54.8			51.8	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Future Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.998							0.850			
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3448	0	0	1728	3455	0	1703	1524	0	1865	1963
Satd. Flow (RTOR)		1							541			
Adj. Flow (vph)	3	1378	20	1	51	1019	1	34	0	45	4	0
Lane Group Flow (vph)	3	1398	0	0	52	1020	0	34	45	0	4	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	15.0	50.0		15.0	15.0	50.0		14.0	15.0		14.0	15.0
Total Split (%)	12.2%	40.7%		12.2%	12.2%	40.7%		11.4%	12.2%		11.4%	12.2%
Maximum Green (s)	9.0	44.0		9.0	9.0	44.0		8.0	9.0		8.0	9.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.03	0.53			0.33	0.35		0.21	0.07		0.03	
Control Delay (s/veh)	65.0	5.3			57.4	4.0		52.4	0.2		54.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0		0.0	
Total Delay (s/veh)	65.0	5.3			57.4	4.0		52.4	0.2		54.0	
Queue Length 50th (ft)	3	16			40	63		27	0		3	
Queue Length 95th (ft)	m5	153			79	230		57	0		5	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	154	2634			168	2927		170	628		151	
Starvation Cap Reductn	0	0			0	0		0	0		0	
Spillback Cap Reductn	0	0			0	0		0	0		0	
Storage Cap Reductn	0	0			0	0		0	0		0	
Reduced v/c Ratio	0.02	0.53			0.31	0.35		0.20	0.07		0.03	

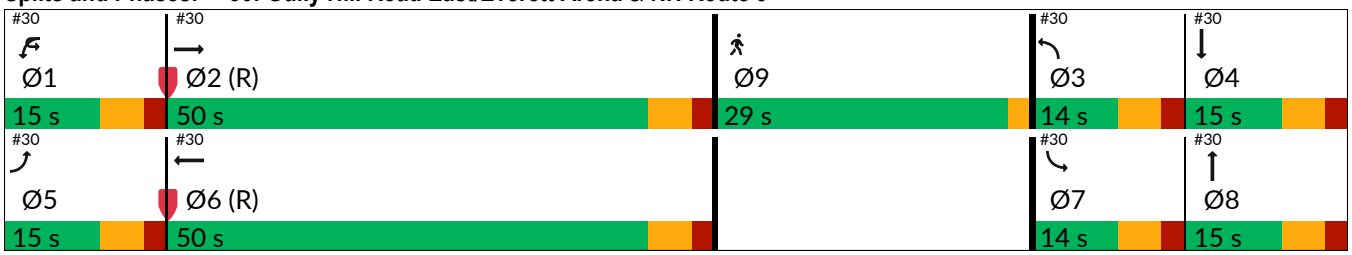
Intersection Summary
Cycle Length: 123

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		24%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 123
Offset: 61 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



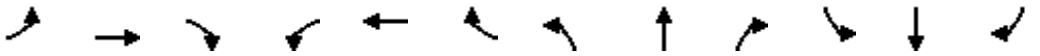
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Future Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	
Frt	1.00	1.00			1.00	1.00		1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (prot)	1728	3448			1728	3455		1703	1524		1865	
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	
Satd. Flow (perm)	1728	3448			1728	3455		1703	1524		1865	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	3	1378	20	1	51	1019	1	34	0	45	4	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	42	0	0	0
Lane Group Flow (vph)	3	1398	0	0	52	1020	0	34	3	0	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.3	82.7			8.0	89.4		7.1	7.0		1.3	
Effective Green, g (s)	3.3	84.7			10.0	91.4		9.1	9.0		3.3	
Actuated g/C Ratio	0.03	0.69			0.08	0.74		0.07	0.07		0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	46	2374			140	2567		125	111		50	
v/s Ratio Prot	0.00	c0.41			c0.03	0.30		c0.02	c0.00		0.00	
v/s Ratio Perm												
v/c Ratio	0.07	0.59			0.37	0.40		0.27	0.03		0.08	
Uniform Delay, d1	58.3	10.0			53.5	5.8		53.8	52.9		58.4	
Progression Factor	1.20	0.54			1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.9			1.7	0.5		1.2	0.1		0.7	
Delay (s)	70.5	6.4			55.2	6.2		55.0	53.1		59.1	
Level of Service	E	A			E	A		D	D		E	
Approach Delay (s/veh)		6.5				8.6			53.9			59.1
Approach LOS		A				A			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	123.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

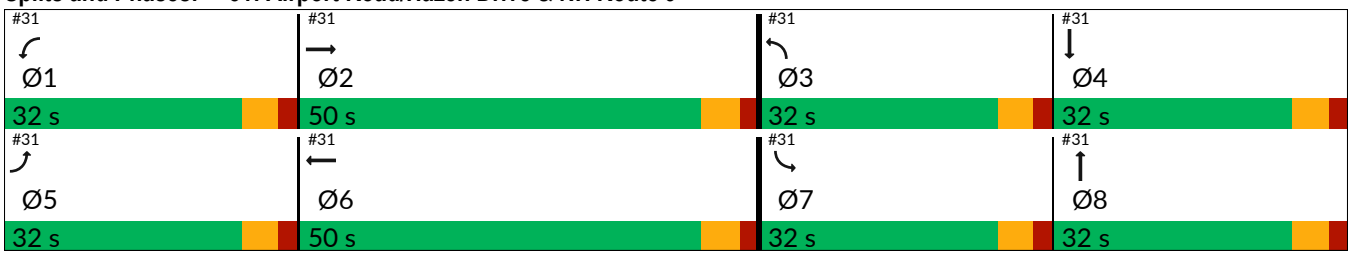


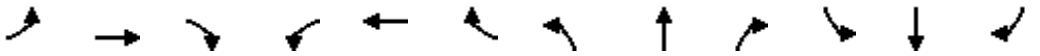
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Future Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			263			157			157			157
Adj. Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
Lane Group Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.76	0.56	0.16	0.59	0.75	0.09	0.53	0.33	0.08	0.19	0.55	0.06
Control Delay (s/veh)	56.1	31.0	0.2	55.0	40.8	0.1	56.4	39.9	0.1	58.2	55.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.1	31.0	0.2	55.0	40.8	0.1	56.4	39.9	0.1	58.2	55.7	0.1
Queue Length 50th (ft)	231	225	0	123	288	0	93	101	0	20	107	0
Queue Length 95th (ft)	#480	378	0	223	424	0	179	183	0	57	200	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	446	1435	1599	446	1417	1652	422	486	1568	418	440	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.53	0.16	0.39	0.58	0.09	0.31	0.32	0.08	0.06	0.34	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 114.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

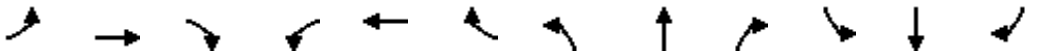




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Future Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1694	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	25.8	43.2	117.1	17.1	34.5	117.1	14.6	28.1	117.1	4.7	18.2	117.1
Effective Green, g (s)	27.8	45.2	117.1	19.1	36.5	117.1	16.6	30.1	117.1	6.7	20.2	117.1
Actuated g/C Ratio	0.24	0.39	1.00	0.16	0.31	1.00	0.14	0.26	1.00	0.06	0.17	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	424	1333	1599	291	1076	1652	240	458	1568	96	304	1501
v/s Ratio Prot	c0.19	0.22		0.10	c0.24		c0.08	0.09		0.02	c0.08	
v/s Ratio Perm			0.16			0.09			0.08			0.06
v/c Ratio	0.78	0.57	0.16	0.60	0.77	0.09	0.54	0.34	0.08	0.28	0.49	0.06
Uniform Delay, d1	41.8	28.3	0.0	45.5	36.5	0.0	46.7	35.4	0.0	52.9	43.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.6	0.2	3.5	3.3	0.1	2.5	0.4	0.1	1.6	1.2	0.1
Delay (s)	50.8	28.8	0.2	49.0	39.8	0.1	49.2	35.8	0.1	54.5	45.0	0.1
Level of Service	D	C	A	D	D	A	D	D	A	D	D	A
Approach Delay (s/veh)		28.6			36.0			29.0			30.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Future Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.994			0.963			0.986			0.945	
Flt Protected	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (prot)	1787	3316	0	1652	3295	0	1652	1714	0	1585	1684	0
Flt Permitted	0.950			0.950			0.950			0.950	0.997	
Satd. Flow (perm)	1787	3316	0	1652	3295	0	1652	1714	0	1585	1684	0
Satd. Flow (RTOR)		3			29			3			17	
Adj. Flow (vph)	57	624	26	12	709	232	104	122	13	223	231	146
Lane Group Flow (vph)	57	650	0	12	941	0	104	135	0	201	399	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.29	0.43		0.08	0.78		0.41	0.51		0.54	0.98	
Control Delay (s/veh)	44.9	19.5		44.5	33.4		42.5	44.1		40.8	78.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.9	19.5		44.5	33.4		42.5	44.1		40.8	78.7	
Queue Length 50th (ft)	33	126		7	271		60	77		117	~260	
Queue Length 95th (ft)	75	241		27	#425		115	141		214	#520	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125			130			350		
Base Capacity (vph)	322	1522		298	1208		385	402		370	406	
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	0.18	0.43		0.04	0.78		0.27	0.34		0.54	0.98	

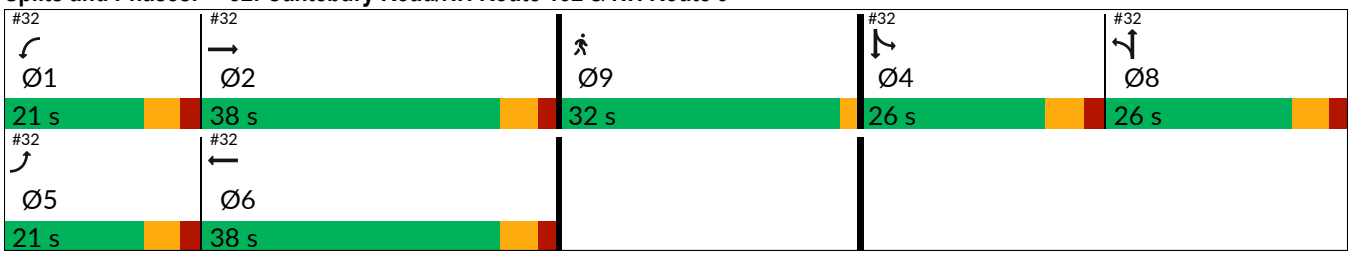
Intersection Summary
Cycle Length: 143

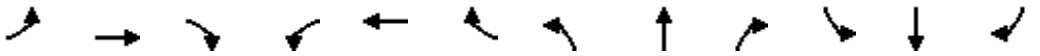
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.2
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9

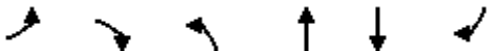




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Future Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3316		1652	3295		1652	1713		1585	1684	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1787	3316		1652	3295		1652	1713		1585	1684	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	624	26	12	709	232	104	122	13	223	231	146
RTOR Reduction (vph)	0	2	0	0	18	0	0	3	0	0	13	0
Lane Group Flow (vph)	57	648	0	12	923	0	104	132	0	201	386	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	7.1	41.6		1.4	35.9		12.7	12.7		20.2	20.2	
Effective Green, g (s)	9.1	43.6		3.4	37.9		14.7	14.7		22.2	22.2	
Actuated g/C Ratio	0.09	0.44		0.03	0.38		0.15	0.15		0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	162	1447		56	1250		243	252		352	374	
v/s Ratio Prot	c0.03	0.20		0.01	c0.28		0.06	c0.08		0.13	c0.23	
v/s Ratio Perm												
v/c Ratio	0.35	0.45		0.21	0.74		0.43	0.53		0.57	1.03	
Uniform Delay, d1	42.6	19.7		47.0	26.7		38.8	39.4		34.6	38.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.2		1.9	2.3		1.2	2.0		2.2	54.9	
Delay (s)	44.0	19.9		48.9	29.0		40.0	41.4		36.8	93.7	
Level of Service	D	B		D	C		D	D		D	F	
Approach Delay (s/veh)		21.9			29.3			40.8			74.7	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

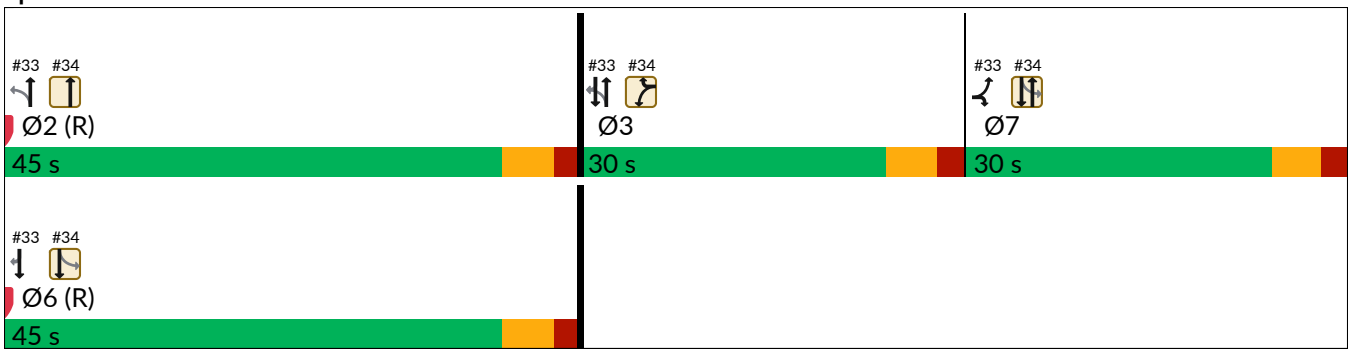


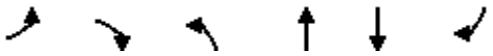
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	116	13	31	337	488	582			
Future Volume (vph)	116	13	31	337	488	582			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	1719	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.933					
Satd. Flow (perm)	1719	1538	0	1664	1881	1546			
Satd. Flow (RTOR)		14				647			
Adj. Flow (vph)	129	14	34	374	542	647			
Lane Group Flow (vph)	129	14	0	408	542	647			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.29	0.03		0.37	0.43	0.52			
Control Delay (s/veh)	34.0	14.5		8.8	9.4	2.8			
Queue Delay	0.0	0.0		0.0	1.9	0.8			
Total Delay (s/veh)	34.0	14.5		8.8	11.2	3.6			
Queue Length 50th (ft)	74	0		108	182	45			
Queue Length 95th (ft)	129	17		160	243	43			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	445	409		1097	1239	1239			
Starvation Cap Reductn	0	0		0	516	300			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.29	0.03		0.37	0.75	0.69			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	116	13	31	337	488	582
Future Volume (vph)	116	13	31	337	488	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1719	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.93	1.00	1.00
Satd. Flow (perm)	1719	1538		1663	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	14	34	374	542	647
RTOR Reduction (vph)	0	10	0	0	0	217
Lane Group Flow (vph)	129	4	0	408	542	430
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	25.2	25.2		67.8	67.8	67.8
Effective Green, g (s)	27.2	27.2		69.8	69.8	69.8
Actuated g/C Ratio	0.26	0.26		0.66	0.66	0.66
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	445	398		1105	1250	1027
v/s Ratio Prot	c0.08	0.00			c0.29	
v/s Ratio Perm				0.25		0.28
v/c Ratio	0.29	0.01		0.37	0.43	0.42
Uniform Delay, d1	31.2	28.9		7.8	8.3	8.2
Progression Factor	1.00	1.00		1.00	1.04	3.12
Incremental Delay, d2	0.4	0.0		0.2	0.2	0.2
Delay (s)	31.5	28.9		8.0	8.8	25.7
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	31.3			8.0	18.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

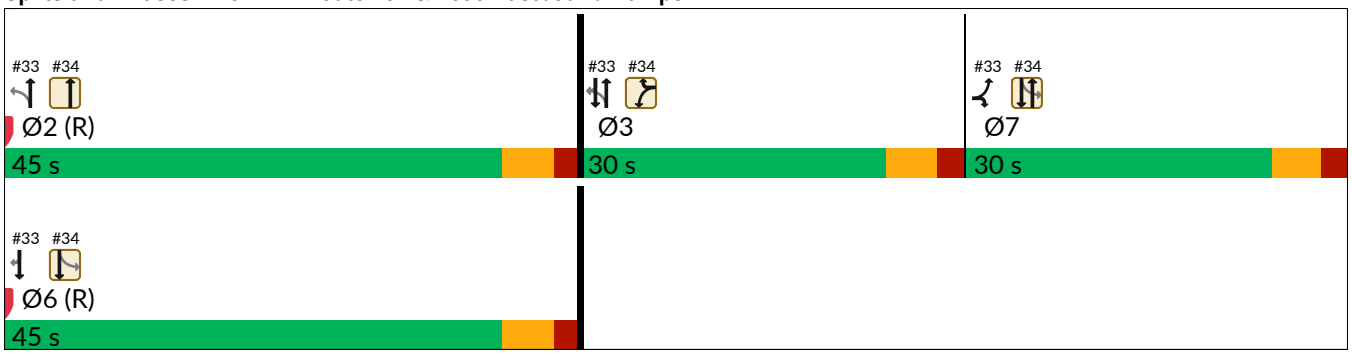
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	305	153	418	54	37	781			
Future Volume (vph)	305	153	418	54	37	781			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.983						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3267	0	1728	1818			
Flt Permitted	0.950				0.443				
Satd. Flow (perm)	1770	1583	3267	0	806	1818			
Satd. Flow (RTOR)		146	29						
Adj. Flow (vph)	339	170	464	60	41	868			
Lane Group Flow (vph)	339	170	524	0	41	868			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.76	0.33	0.24		0.08	0.71			
Control Delay (s/veh)	48.8	9.6	4.7		6.3	14.9			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	48.8	9.6	4.9		6.3	14.9			
Queue Length 50th (ft)	216	13	44		9	326			
Queue Length 95th (ft)	#349	67	59		21	474			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	447	509	2256		554	1250			
Starvation Cap Reductn	0	0	970		0	0			
Spillback Cap Reductn	0	0	0		0	5			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.76	0.33	0.41		0.07	0.70			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	305	153	418	54	37	781
Future Volume (vph)	305	153	418	54	37	781
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3266		1728	1818
Flt Permitted	0.95	1.00	1.00		0.44	1.00
Satd. Flow (perm)	1770	1583	3266		806	1818
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	339	170	464	60	41	868
RTOR Reduction (vph)	0	109	10	0	0	0
Lane Group Flow (vph)	339	61	514	0	41	868
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	24.6	24.6	68.4		68.4	68.4
Effective Green, g (s)	26.6	26.6	70.4		70.4	70.4
Actuated g/C Ratio	0.25	0.25	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	448	401	2189		540	1218
v/s Ratio Prot	c0.19	0.04	0.16			c0.48
v/s Ratio Perm					0.05	
v/c Ratio	0.76	0.15	0.24		0.08	0.71
Uniform Delay, d1	36.2	30.4	6.8		6.0	10.9
Progression Factor	1.00	1.00	0.71		1.00	1.00
Incremental Delay, d2	7.2	0.2	0.1		0.1	2.0
Delay (s)	43.4	30.6	4.8		6.1	12.9
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	39.1		4.8			12.6
Approach LOS	D		A			B

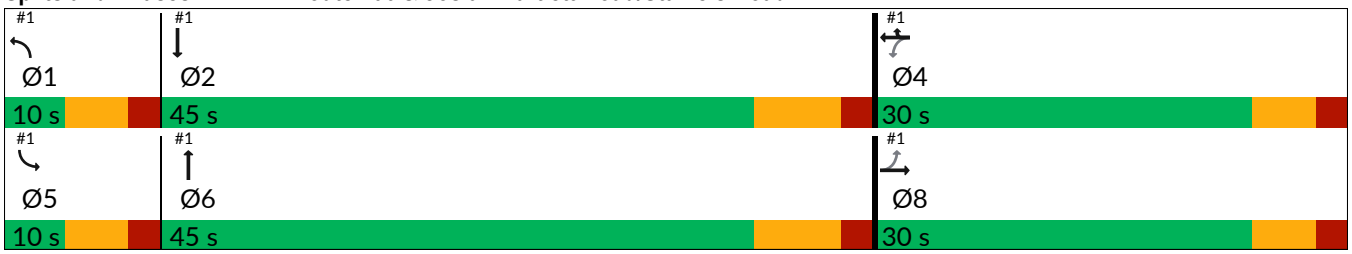
Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

2037 Build Weekday Evening Peak-Hour

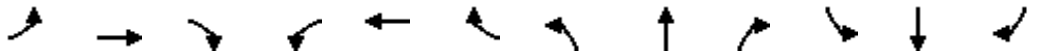
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	5	76	1	69	1	1292	144	34	709	7
Future Volume (vph)	0	2	5	76	1	69	1	1292	144	34	709	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.90			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1642			1811	1583	1787	3521		1770	3534	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1374	1583	1787	3521		1770	3534	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	2	6	84	1	77	1	1374	153	37	762	8
RTOR Reduction (vph)	0	5	0	0	0	66	0	7	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	85	11	1	1520	0	37	769	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.7			7.7	7.7	0.7	41.4		2.1	42.8	
Effective Green, g (s)		9.7			9.7	9.7	0.7	43.4		2.1	44.8	
Actuated g/C Ratio		0.14			0.14	0.14	0.01	0.61		0.03	0.63	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		225			188	217	17	2161		52	2239	
v/s Ratio Prot		0.00				0.01	0.00	c0.43		c0.02	0.22	
v/s Ratio Perm					c0.06							
v/c Ratio		0.01			0.45	0.05	0.06	0.70		0.71	0.34	
Uniform Delay, d1		26.4			28.1	26.5	34.7	9.3		34.0	6.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.7	0.1	1.5	1.1		36.8	0.1	
Delay (s)		26.4			29.8	26.6	36.1	10.3		70.8	6.2	
Level of Service		C			C	C	D	B		E	A	
Approach Delay (s/veh)		26.4			28.3			10.3			9.1	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	15.5
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

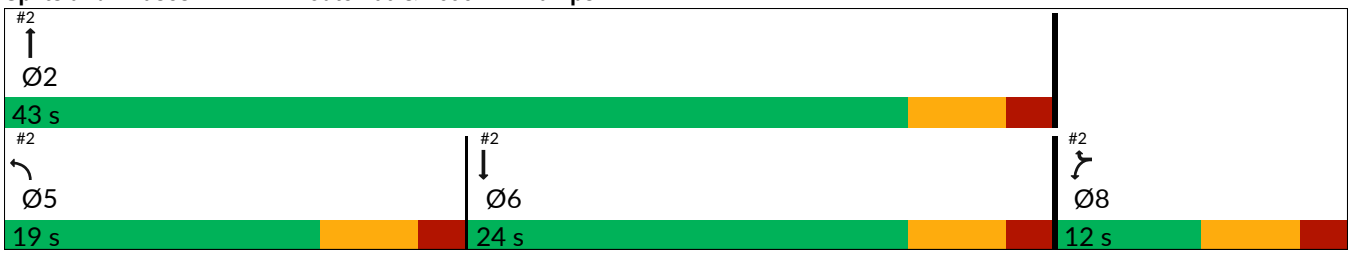


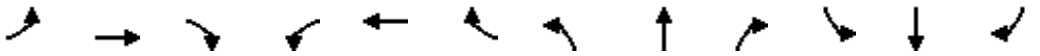
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	8	0	17	812	1727	0	0	575	433
Future Volume (vph)	0	0	0	8	0	17	812	1727	0	0	575	433
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1847	0	1599	3385	3490	0	0	3421	1531
Satd. Flow (RTOR)						179						451
Adj. Flow (vph)	0	0	0	9	0	19	855	1818	0	0	599	451
Lane Group Flow (vph)	0	0	0	9	0	19	855	1818	0	0	599	451
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.03		0.04	0.72	0.59			0.47	0.29
Control Delay (s/veh)				19.9		0.2	21.3	3.7			12.7	0.5
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.9		0.2	21.3	3.7			12.7	0.5
Queue Length 50th (ft)				2		0	89	0			45	0
Queue Length 95th (ft)				13		0	#240	205			118	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				348		446	1196	3022			1612	1531
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				0.03		0.04	0.71	0.60			0.37	0.29

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 44.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

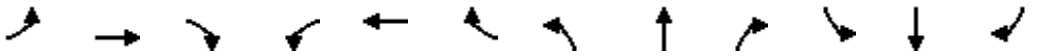




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	8	0	17	812	1727	0	0	575	433
Future Volume (vph)	0	0	0	8	0	17	812	1727	0	0	575	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1847		1599	3385	3490			3421	1531
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1847		1599	3385	3490			3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	9	0	19	855	1818	0	0	599	451
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	9	0	2	855	1818	0	0	599	451
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.9		1.9	13.4	34.2			14.8	48.1
Effective Green, g (s)				3.9		3.9	15.4	36.2			16.8	48.1
Actuated g/C Ratio				0.08		0.08	0.32	0.75			0.35	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				149		129	1083	2626			1194	1531
v/s Ratio Prot				0.00		0.00	c0.25	c0.52			0.18	
v/s Ratio Perm												c0.29
v/c Ratio				0.06		0.01	0.79	0.69			0.50	0.29
Uniform Delay, d1				20.4		20.3	14.9	3.1			12.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		0.0	3.9	0.8			0.3	0.5
Delay (s)				20.6		20.4	18.8	3.9			12.7	0.5
Level of Service				C		C	B	A			B	A
Approach Delay (s/veh)		0.0			20.4			8.6			7.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

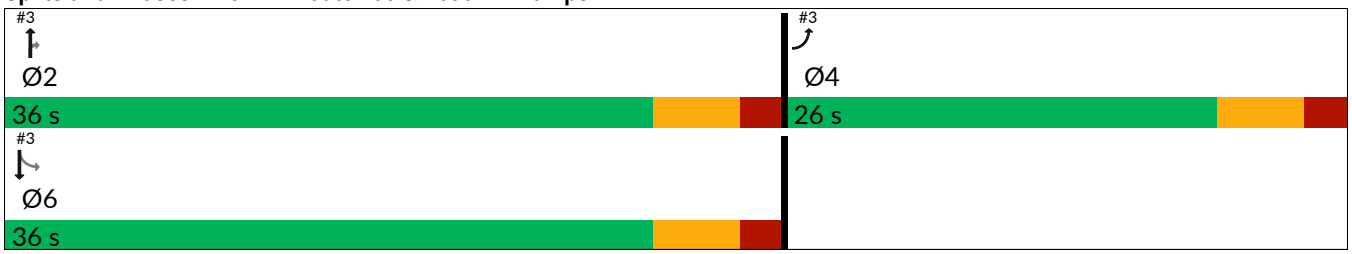


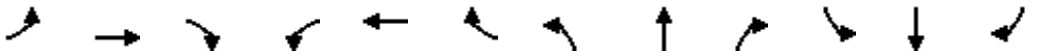
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	862	0	970	0	0	0	0	1677	9	9	574	0
Future Volume (vph)	862	0	970	0	0	0	0	1677	9	9	574	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.790	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	2757	0
Satd. Flow (RTOR)			980						53			
Adj. Flow (vph)	871	0	980	0	0	0	0	1843	10	10	638	0
Lane Group Flow (vph)	871	0	980	0	0	0	0	1843	10	0	648	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.74		0.35					1.01	0.01		0.45	
Control Delay (s/veh)	22.1		0.3					40.8	0.0		10.4	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	22.1		0.3					40.8	0.0		10.4	
Queue Length 50th (ft)	142		0					~375	0		74	
Queue Length 95th (ft)	202		0					#535	0		111	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1259		2814					1825	841		1456	
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	0.69		0.35					1.01	0.01		0.45	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 60.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & I-393 EB Ramps

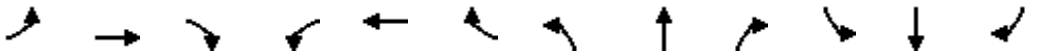




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	862	0	970	0	0	0	0	1677	9	9	574	0
Future Volume (vph)	862	0	970	0	0	0	0	1677	9	9	574	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3487	
Flt Permitted	0.95		1.00					1.00	1.00		0.79	
Satd. Flow (perm)	3467		2814					3455	1546		2758	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	871	0	980	0	0	0	0	1843	10	10	638	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	5	0	0	0
Lane Group Flow (vph)	871	0	980	0	0	0	0	1843	5	0	648	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	18.6		60.6					30.0	30.0		30.0	
Effective Green, g (s)	20.6		60.6					32.0	32.0		32.0	
Actuated g/C Ratio	0.34		1.00					0.53	0.53		0.53	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	1178		2814					1824	816		1456	
v/s Ratio Prot	c0.25							c0.53				
v/s Ratio Perm			0.35						0.00		0.23	
v/c Ratio	0.74		0.35					1.01	0.01		0.45	
Uniform Delay, d1	17.6		0.0					14.3	6.8		8.8	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	2.5		0.3					23.7	0.0		0.2	
Delay (s)	20.1		0.3					38.0	6.8		9.0	
Level of Service	C		A					D	A		A	
Approach Delay (s/veh)		9.6			0.0			37.8			9.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

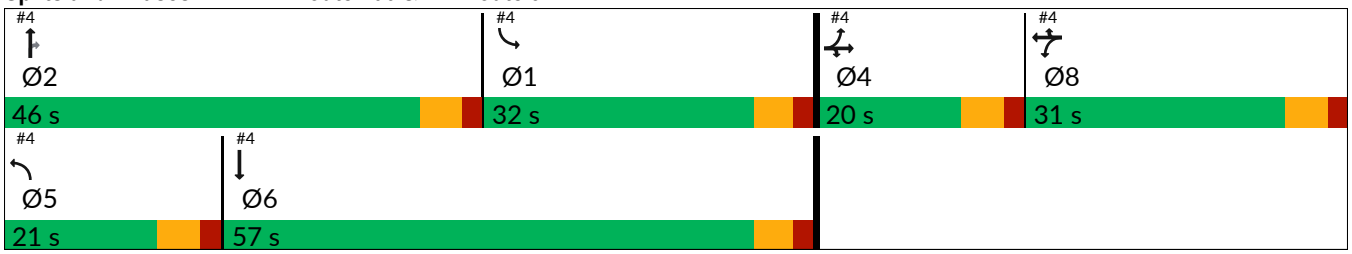


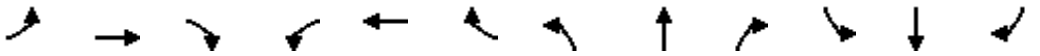
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Future Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.985		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1557	3228	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.985		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1557	3228	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			602			519
Adj. Flow (vph)	787	403	64	356	317	54	64	1013	602	108	859	764
Lane Group Flow (vph)	787	403	64	221	452	54	64	1013	602	108	859	764
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	1.61	1.53	0.17	0.68	0.67	0.12	0.36	0.80	0.63	0.48	0.59	0.42
Control Delay (s/veh)	317.5	288.7	1.0	52.7	46.3	0.5	54.0	38.0	5.7	52.8	28.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total Delay (s/veh)	317.5	288.7	1.0	52.7	46.3	0.5	54.0	38.0	5.7	52.8	28.7	0.7
Queue Length 50th (ft)	~434	~420	0	164	168	0	45	344	0	75	262	0
Queue Length 95th (ft)	#609	#670	0	276	243	0	92	481	88	135	360	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	488	264	377	382	793	510	267	1320	962	440	1666	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	255	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.61	1.53	0.17	0.58	0.57	0.11	0.24	0.77	0.63	0.25	0.61	0.42

Intersection Summary
Cycle Length: 129
Actuated Cycle Length: 110.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Future Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1557	3229	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1557	3229	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	787	403	64	356	317	54	64	1013	602	108	859	764
RTOR Reduction (vph)	0	0	55	0	0	43	0	0	383	0	0	0
Lane Group Flow (vph)	787	403	9	221	452	11	64	1013	219	108	859	764
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.1	14.1	14.1	21.2	21.2	21.2	8.1	38.8	38.8	14.0	44.7	112.1
Effective Green, g (s)	16.1	16.1	16.1	23.2	23.2	23.2	10.1	40.8	40.8	16.0	46.7	112.1
Actuated g/C Ratio	0.14	0.14	0.14	0.21	0.21	0.21	0.09	0.36	0.36	0.14	0.42	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	481	261	222	322	668	316	155	1257	562	246	1439	1812
v/s Ratio Prot	c0.23	0.22	0.01	c0.14	0.14	0.01	0.04	c0.29		0.06	c0.25	
v/s Ratio Perm									0.14			0.42
v/c Ratio	1.64	1.54	0.04	0.69	0.68	0.04	0.41	0.81	0.39	0.44	0.60	0.42
Uniform Delay, d1	48.0	48.0	41.4	41.1	41.0	35.5	48.2	32.1	26.4	43.9	25.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	295.6	263.0	0.1	6.0	2.7	0.0	1.8	3.9	0.4	1.3	0.7	0.7
Delay (s)	343.6	311.0	41.4	47.0	43.7	35.6	50.0	36.0	26.9	45.2	26.1	0.7
Level of Service	F	F	D	D	D	D	D	D	C	D	C	A
Approach Delay (s/veh)		317.7			44.1			33.2			16.1	
Approach LOS		F			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	95.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	112.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	91.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1	15	73	1	159	11	1017	20	98	942	5
Future Vol, veh/h	4	1	15	73	1	159	11	1017	20	98	942	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	32	32	32	85	85	85	90	90	90	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	3	3	3
Mvmt Flow	13	3	47	86	1	187	12	1130	22	100	961	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2319	2340	964	2317	2321	1130	966	0	0	1152	0	0
Stage 1	1164	1164	-	1154	1154	-	-	-	-	-	-	-
Stage 2	1155	1177	-	1163	1166	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.13	-	-
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	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	27	37	312	~ 27	38	250	717	-	-	603	-	-
Stage 1	239	271	-	242	274	-	-	-	-	-	-	-
Stage 2	242	267	-	239	270	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 5	30	312	~ 17	31	250	717	-	-	603	-	-
Mov Cap-2 Maneuver	~ 5	30	-	~ 17	31	-	-	-	-	-	-	-
Stage 1	199	226	-	238	269	-	-	-	-	-	-	-
Stage 2	60	263	-	167	225	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	$ 448	$ 747.66	0.11	1.14
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	717	-	-	6	312	17	250	603	-	-
HCM Lane V/C Ratio	0.017	-	-	2.434	0.15	5.029	0.748	0.166	-	-
HCM Ctrl Dly (s/v)	10.1	-	-	$ 1736.4	18.5	$ 2262	52.4	12.2	-	-
HCM Lane LOS	B	-	-	F	C	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	0.5	11.4	5.3	0.6	-	-

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

Intersection	
Int Delay, s/veh	15.6

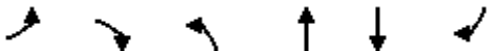
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	144	148	1296	895	135
Future Vol, veh/h	37	144	148	1296	895	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	90	90	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	39	150	164	1440	942	142

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2711	942	1084	0	-	0
Stage 1	942	-	-	-	-	-
Stage 2	1769	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 23	320	647	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 17	320	647	-	-	-
Mov Cap-2 Maneuver	~ 17	-	-	-	-	-
Stage 1	284	-	-	-	-	-
Stage 2	151	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	227.45	1.28	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	647	-	17	320	-	-
HCM Lane V/C Ratio	0.254	-	2.21	0.469	-	-
HCM Ctrl Dly (s/v)	12.4	-	$ 1012.4	25.8	-	-
HCM Lane LOS	B	-	F	D	-	-
HCM 95th %tile Q(veh)	1	-	5.3	2.4	-	-

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

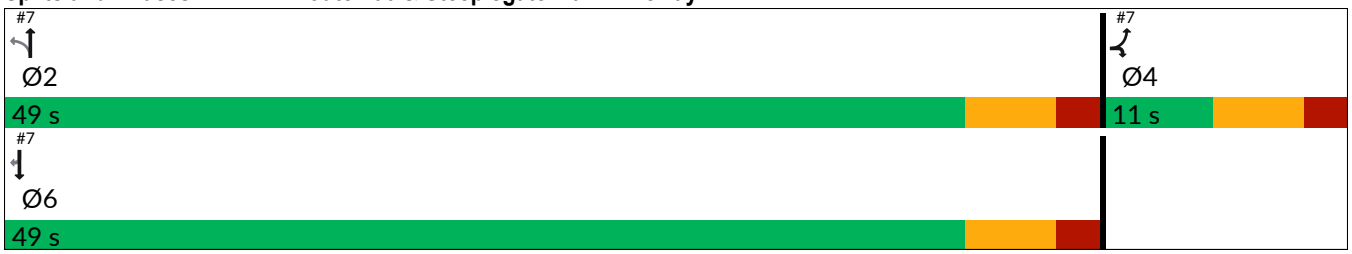


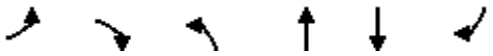
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	127	99	108	1317	913	127
Future Volume (vph)	127	99	108	1317	913	127
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1583	1728	1881	1845	1516
Flt Permitted	0.950		0.219			
Satd. Flow (perm)	1888	1583	398	1881	1845	1516
Satd. Flow (RTOR)		110				138
Adj. Flow (vph)	141	110	120	1463	992	138
Lane Group Flow (vph)	141	110	120	1463	992	138
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	11.0	16.0	16.0	16.0	16.0
Total Split (s)	11.0	11.0	49.0	49.0	49.0	49.0
Total Split (%)	18.3%	18.3%	81.7%	81.7%	81.7%	81.7%
Maximum Green (s)	5.0	5.0	43.0	43.0	43.0	43.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min
v/c Ratio	0.65	0.39	0.38	0.97	0.67	0.11
Control Delay (s/veh)	41.7	10.7	6.8	28.6	6.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.7	10.7	6.8	28.6	6.6	0.7
Queue Length 50th (ft)	51	0	11	~595	139	0
Queue Length 95th (ft)	#121	39	36	#824	252	9
Internal Link Dist (ft)	425			617	959	
Turn Bay Length (ft)		140	250			275
Base Capacity (vph)	217	279	318	1504	1475	1240
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	0.65	0.39	0.38	0.97	0.67	0.11

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 7: NH Route 106 & Steeplegate Mall Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	127	99	108	1317	913	127
Future Volume (vph)	127	99	108	1317	913	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	12	11	12	12	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1888	1583	1728	1881	1845	1516
Flt Permitted	0.95	1.00	0.22	1.00	1.00	1.00
Satd. Flow (perm)	1888	1583	399	1881	1845	1516
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.92	0.92
Adj. Flow (vph)	141	110	120	1463	992	138
RTOR Reduction (vph)	0	99	0	0	0	31
Lane Group Flow (vph)	141	11	120	1463	992	107
Heavy Vehicles (%)	2%	2%	1%	1%	3%	3%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	4	4		2	6	
Permitted Phases			2			6
Actuated Green, G (s)	4.1	4.1	45.9	45.9	45.9	45.9
Effective Green, g (s)	6.1	6.1	47.9	47.9	47.9	47.9
Actuated g/C Ratio	0.10	0.10	0.77	0.77	0.77	0.77
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	185	155	308	1453	1425	1171
v/s Ratio Prot	c0.07	0.01		c0.78	0.54	
v/s Ratio Perm			0.30			0.07
v/c Ratio	0.76	0.07	0.39	1.01	0.70	0.09
Uniform Delay, d1	27.2	25.4	2.3	7.1	3.5	1.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.8	0.2	0.8	25.3	1.5	0.0
Delay (s)	44.1	25.6	3.1	32.3	5.0	1.8
Level of Service	D	C	A	C	A	A
Approach Delay (s/veh)	36.0			30.1	4.6	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

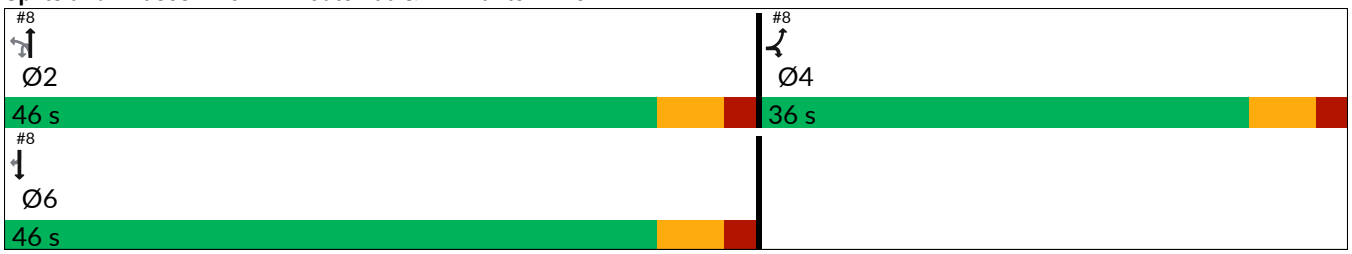
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	414	140	1	208	1010	700	312
Future Volume (vph)	414	140	1	208	1010	700	312
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1711	1863	1783	1568
Flt Permitted	0.950			0.202			
Satd. Flow (perm)	1745	1561	0	364	1863	1783	1568
Satd. Flow (RTOR)		141					339
Adj. Flow (vph)	418	141	1	231	1122	761	339
Lane Group Flow (vph)	418	141	0	232	1122	761	339
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.74	0.23		1.13	1.06	0.75	0.33
Control Delay (s/veh)	30.6	4.3		125.1	66.2	20.1	2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	4.3		125.1	66.2	20.1	2.2
Queue Length 50th (ft)	168	0		~129	~596	251	0
Queue Length 95th (ft)	263	33		#292	#948	#554	39
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	753	754		206	1056	1010	1035
Starvation Cap Reductn	0	0		0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0
Reduced v/c Ratio	0.56	0.19		1.13	1.06	0.75	0.33

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 74.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	414	140	1	208	1010	700	312
Future Volume (vph)	414	140	1	208	1010	700	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1711	1863	1783	1568
Flt Permitted	0.95	1.00		0.20	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		364	1863	1783	1568
Peak-hour factor, PHF	0.99	0.99	0.90	0.90	0.90	0.92	0.92
Adj. Flow (vph)	418	141	1	231	1122	761	339
RTOR Reduction (vph)	0	95	0	0	0	0	147
Lane Group Flow (vph)	418	46	0	232	1122	761	192
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	22.2	22.2		40.2	40.2	40.2	40.2
Effective Green, g (s)	24.2	24.2		42.2	42.2	42.2	42.2
Actuated g/C Ratio	0.33	0.33		0.57	0.57	0.57	0.57
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	567	507		206	1056	1011	889
v/s Ratio Prot	c0.24	0.03			0.60	0.43	
v/s Ratio Perm				c0.64			0.12
v/c Ratio	0.74	0.09		1.13	1.06	0.75	0.22
Uniform Delay, d1	22.3	17.4		16.1	16.1	12.2	7.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1		100.7	45.9	3.2	0.1
Delay (s)	27.3	17.5		116.8	62.0	15.4	8.1
Level of Service	C	B		F	E	B	A
Approach Delay (s/veh)	24.8				71.4	13.1	
Approach LOS	C				E	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	46.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	205	195	1200	904	37
Future Vol, veh/h	17	205	195	1200	904	37
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	228	214	1319	983	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2730	983	1023	0	-	0
Stage 1	983	-	-	-	-	-
Stage 2	1747	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	23	303	683	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 16	303	683	-	-	-
Mov Cap-2 Maneuver	~ 16	-	-	-	-	-
Stage 1	250	-	-	-	-	-
Stage 2	155	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	$ 518.68	1.77	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	683	-	126	-	-
HCM Lane V/C Ratio	0.314	-	1.962	-	-
HCM Ctrl Dly (s/v)	12.7	-	$ 518.7	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.8	-	-

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

Intersection	
Int Delay, s/veh	22.2

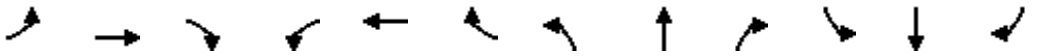
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	427	85	120	287	111	130	0	127	0	0	81
Future Vol, veh/h	41	427	85	120	287	111	130	0	127	0	0	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	0	-	50	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	91	91	91	96	96	96	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	2	2	2
Mvmt Flow	46	474	94	132	315	122	135	0	132	0	0	90

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	437	0	0	569	0	0	1192	-	284	-	-	315
Stage 1	-	-	-	-	-	-	613	-	-	-	-	-
Stage 2	-	-	-	-	-	-	579	-	-	-	-	-
Critical Hdwy	4.115	-	-	4.115	-	-	7.315	-	6.915	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.515	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.115	-	-	-	-	-
Follow-up Hdwy	2.2095	-	-	2.2095	-	-	3.5095	-	3.3095	-	-	3.319
Pot Cap-1 Maneuver	1127	-	-	1007	-	-	154	0	716	0	0	724
Stage 1	-	-	-	-	-	-	449	0	-	0	0	-
Stage 2	-	-	-	-	-	-	502	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1127	-	-	1007	-	-	~ 112	-	716	-	-	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 112	-	-	-	-	-
Stage 1	-	-	-	-	-	-	431	-	-	-	-	-
Stage 2	-	-	-	-	-	-	382	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.62	2.11	118.07	10.67
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	112	716	1127	-	-	1007	-	-	724
HCM Lane V/C Ratio	1.204	0.185	0.04	-	-	0.131	-	-	0.124
HCM Ctrl Dly (s/v)	222.5	11.2	8.3	-	-	9.1	-	-	10.7
HCM Lane LOS	F	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	8.7	0.7	0.1	-	-	0.4	-	-	0.4

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

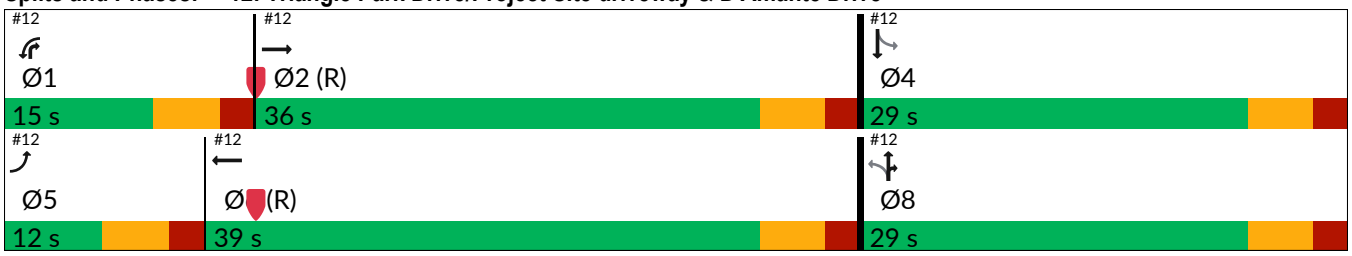


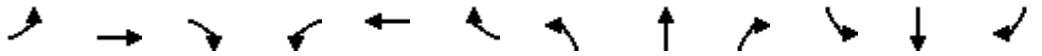
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Future Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956			0.963				0.850		0.869	
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1787	3303	0	1728	1812	0	0	1804	1599	1770	1619	0
Flt Permitted	0.950			0.950				0.607		0.631		
Satd. Flow (perm)	1787	3303	0	1728	1812	0	0	1142	1599	1175	1619	0
Satd. Flow (RTOR)		97			26				76		130	
Adj. Flow (vph)	139	340	143	60	372	121	121	19	76	199	19	130
Lane Group Flow (vph)	139	483	0	60	493	0	0	140	76	199	149	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0		11.0	11.0		28.0	28.0	
Total Split (s)	12.0	36.0		15.0	39.0		29.0	29.0		29.0	29.0	
Total Split (%)	15.0%	45.0%		18.8%	48.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	6.0	30.0		9.0	33.0		23.0	23.0		23.0	23.0	
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)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.54	0.28		0.28	0.58			0.50	0.11	0.69	0.30	
Control Delay (s/veh)	45.8	7.9		35.1	19.4			31.2	3.3	39.4	7.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay (s/veh)	45.8	7.9		35.1	19.4			31.2	3.3	39.4	7.3	
Queue Length 50th (ft)	74	42		28	182			60	0	91	7	
Queue Length 95th (ft)	#169	61		63	274			107	20	152	47	
Internal Link Dist (ft)		981			380			958			344	
Turn Bay Length (ft)	50			250					170			
Base Capacity (vph)	256	1735		238	868			356	728	367	595	
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	0.54	0.28		0.25	0.57			0.39	0.10	0.54	0.25	

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive

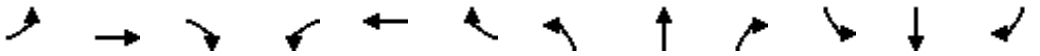




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Future Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.96			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3302		1728	1812			1803	1599	1770	1619	
Flt Permitted	0.95	1.00		0.95	1.00			0.61	1.00	0.63	1.00	
Satd. Flow (perm)	1787	3302		1728	1812			1141	1599	1175	1619	
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)	139	340	143	60	372	121	121	19	76	199	19	130
RTOR Reduction (vph)	0	49	0	0	14	0	0	0	45	0	98	0
Lane Group Flow (vph)	139	434	0	60	479	0	0	140	31	199	51	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Actuated Green, G (s)	9.5	37.6		6.7	34.8			17.7	30.4	17.7	17.7	
Effective Green, g (s)	11.5	39.6		8.7	36.8			19.7	32.4	19.7	19.7	
Actuated g/C Ratio	0.14	0.50		0.11	0.46			0.25	0.41	0.25	0.25	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	256	1634		187	833			280	647	289	398	
v/s Ratio Prot	c0.08	c0.13		0.03	c0.26				0.02		0.03	
v/s Ratio Perm								0.12		c0.17		
v/c Ratio	0.54	0.27		0.32	0.57			0.50	0.05	0.69	0.13	
Uniform Delay, d1	31.8	11.7		32.9	15.9			25.9	14.4	27.4	23.5	
Progression Factor	1.12	0.70		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.4		1.0	2.9			1.4	0.0	6.7	0.1	
Delay (s)	37.8	8.6		33.9	18.7			27.3	14.5	34.0	23.6	
Level of Service	D	A		C	B			C	B	C	C	
Approach Delay (s/veh)		15.1			20.4			22.8			29.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



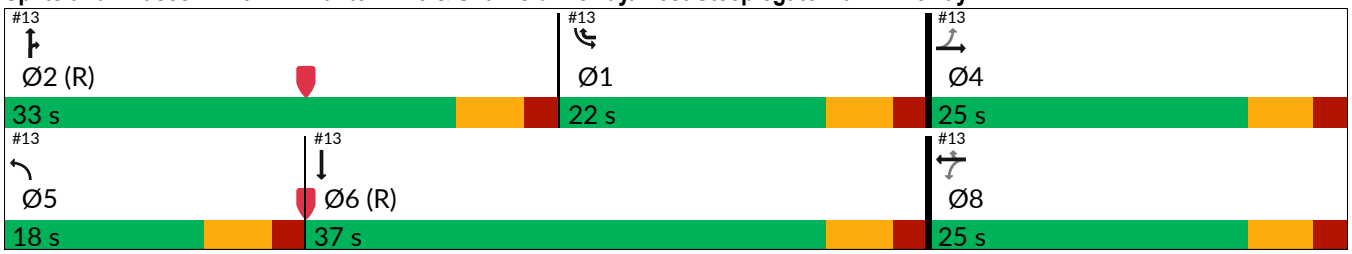
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Future Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.954				0.850			0.850		0.986	
Flt Protected		0.966			0.950		0.950			0.950		
Satd. Flow (prot)	0	3327	0	0	1829	1636	1787	3455	1546	3351	3407	0
Flt Permitted		0.694			0.660		0.950			0.950		
Satd. Flow (perm)	0	2390	0	0	1270	1636	1787	3455	1546	3351	3407	0
Satd. Flow (RTOR)		205				123			123		16	
Adj. Flow (vph)	101	0	44	140	0	123	46	528	88	156	527	53
Lane Group Flow (vph)	0	145	0	0	140	123	46	528	88	156	580	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	25.0	25.0		25.0	25.0	22.0	18.0	33.0	33.0	22.0	37.0	
Total Split (%)	31.3%	31.3%		31.3%	31.3%	27.5%	22.5%	41.3%	41.3%	27.5%	46.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	16.0	12.0	27.0	27.0	16.0	31.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.23			0.55	0.16	0.22	0.32	0.11	0.28	0.29	
Control Delay (s/veh)		2.1			36.2	2.9	30.5	14.7	4.7	30.5	10.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		2.1			36.2	2.9	30.5	14.7	4.7	30.5	10.7	
Queue Length 50th (ft)		0			64	0	23	100	6	35	78	
Queue Length 95th (ft)		8			111	25	m41	138	m23	62	141	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130		130	150		
Base Capacity (vph)		784			336	750	312	1675	813	753	2019	
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		0.18			0.42	0.16	0.15	0.32	0.11	0.21	0.29	

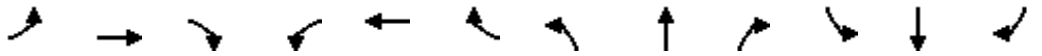
Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Future Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3330			1829	1636	1787	3455	1546	3351	3408	
Flt Permitted		0.69			0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2391			1270	1636	1787	3455	1546	3351	3408	
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	101	0	44	140	0	123	46	528	88	156	527	53
RTOR Reduction (vph)	0	116	0	0	0	74	0	0	48	0	7	0
Lane Group Flow (vph)	0	29	0	0	140	49	46	528	40	156	573	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		14.0			14.0	27.7	5.2	34.3	34.3	13.7	42.8	
Effective Green, g (s)		16.0			16.0	31.7	7.2	36.3	36.3	15.7	44.8	
Actuated g/C Ratio		0.20			0.20	0.40	0.09	0.45	0.45	0.20	0.56	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		478			254	730	160	1567	701	657	1908	
v/s Ratio Prot						0.01	0.03	c0.15	0.03	0.05	c0.17	
v/s Ratio Perm		0.01			c0.11	0.02						
v/c Ratio		0.06			0.55	0.07	0.29	0.34	0.06	0.24	0.30	
Uniform Delay, d1		25.9			28.8	15.0	34.0	14.1	12.3	27.1	9.3	
Progression Factor		1.00			1.00	1.00	0.91	1.03	2.82	1.00	1.00	
Incremental Delay, d2		0.1			2.6	0.0	0.9	0.5	0.1	0.2	0.4	
Delay (s)		26.0			31.3	15.0	31.7	15.1	34.7	27.3	9.7	
Level of Service		C			C	B	C	B	C	C	A	
Approach Delay (s/veh)		26.0			23.7			18.8			13.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

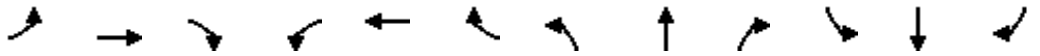
Intersection	
Int Delay, s/veh	0.5

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	61	1203	129	19	1323
Future Vol, veh/h	0	61	1203	129	19	1323
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	85	85	90	90	93	93
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	72	1337	143	20	1423

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2160	740	0	0	1480	0
Stage 1	1408	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	42	364	-	-	456	-
Stage 1	195	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	40	364	-	-	456	-
Mov Cap-2 Maneuver	40	-	-	-	-	-
Stage 1	187	-	-	-	-	-
Stage 2	432	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	17.31	0	0.19
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	364	456	-
HCM Lane V/C Ratio	-	-	0.197	0.045	-
HCM Ctrl Dly (s/v)	-	-	17.3	13.3	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

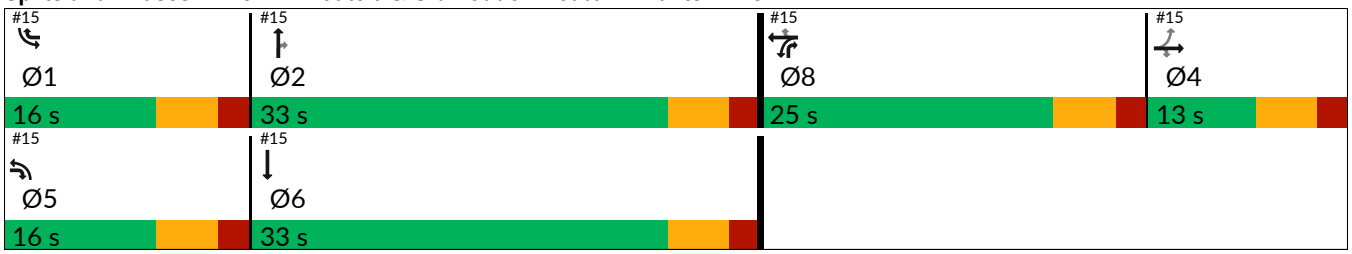


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Future Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.987		0.950	0.965		0.950			0.950		
Satd. Flow (prot)	0	1813	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Flt Permitted		0.795		0.950	0.965		0.950			0.950		
Satd. Flow (perm)	0	1460	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Satd. Flow (RTOR)			113			147			474		3	
Adj. Flow (vph)	16	43	98	542	90	147	121	719	563	119	724	16
Lane Group Flow (vph)	0	59	98	314	318	147	121	719	563	119	740	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	16.0	25.0	25.0	16.0	16.0	33.0	25.0	16.0	33.0	
Total Split (%)	14.9%	14.9%	18.4%	28.7%	28.7%	18.4%	18.4%	37.9%	28.7%	18.4%	37.9%	
Maximum Green (s)	7.0	7.0	10.0	19.0	19.0	10.0	10.0	27.0	19.0	10.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.35	0.20	0.74	0.71	0.21	0.47	0.64	0.47	0.26	0.59	
Control Delay (s/veh)		42.5	5.0	41.6	39.4	2.8	40.9	26.1	2.9	35.4	25.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		42.5	5.0	41.6	39.4	2.8	40.9	26.1	2.9	35.4	25.3	
Queue Length 50th (ft)		30	0	164	165	0	60	167	17	30	180	
Queue Length 95th (ft)		69	29	#310	#303	24	117	234	59	56	241	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		175	523	460	483	732	286	1344	1217	555	1336	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.34	0.19	0.68	0.66	0.20	0.42	0.53	0.46	0.21	0.55	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 78.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

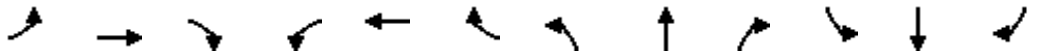
Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Future Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1812	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Flt Permitted		0.80	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1461	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	16	43	98	542	90	147	121	719	563	119	724	16
RTOR Reduction (vph)	0	0	78	0	0	92	0	0	196	0	2	0
Lane Group Flow (vph)	0	59	20	314	318	55	121	719	367	119	738	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.2	12.4	18.1	18.1	26.3	7.2	25.2	43.3	8.2	26.2	
Effective Green, g (s)		7.2	16.4	20.1	20.1	30.3	9.2	27.2	47.3	10.2	28.2	
Actuated g/C Ratio		0.09	0.20	0.25	0.25	0.38	0.11	0.34	0.59	0.13	0.35	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		130	394	408	429	560	203	1164	1016	438	1203	
v/s Ratio Prot			0.01	c0.19	0.18	0.01	c0.07	0.21	0.09	0.03	c0.21	
v/s Ratio Perm		c0.04	0.01			0.02			0.14			
v/c Ratio		0.45	0.05	0.77	0.74	0.10	0.60	0.62	0.36	0.27	0.61	
Uniform Delay, d1		34.9	25.9	28.1	27.9	16.3	34.0	22.4	8.8	31.9	21.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.5	0.1	8.5	6.8	0.1	4.6	1.0	0.2	0.3	0.9	
Delay (s)		37.4	25.9	36.6	34.7	16.4	38.6	23.4	9.0	32.2	22.7	
Level of Service		D	C	D	C	B	D	C	A	C	C	
Approach Delay (s/veh)		30.2			32.0			18.9			24.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

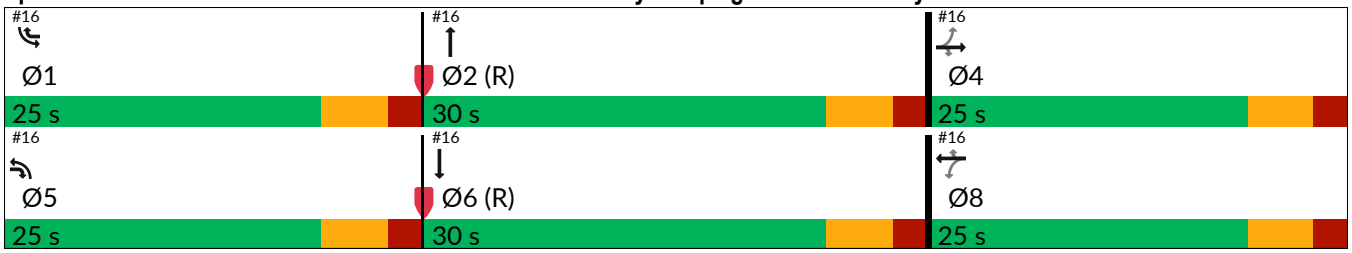


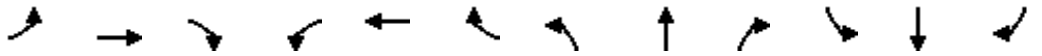
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Future Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.977			0.986	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3376	0	1787	3407	0
Flt Permitted		0.611			0.694		0.950			0.950		
Satd. Flow (perm)	0	1161	1615	0	1336	1636	1847	3376	0	1787	3407	0
Satd. Flow (RTOR)			69			76		27			15	
Adj. Flow (vph)	97	0	84	137	0	291	80	649	116	297	673	72
Lane Group Flow (vph)	0	97	84	0	137	291	80	765	0	297	745	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	30.0		25.0	30.0	
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	37.5%		31.3%	37.5%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	19.0	24.0		19.0	24.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.44	0.13		0.54	0.35	0.32	0.53		0.70	0.39	
Control Delay (s/veh)		33.5	5.0		36.0	9.4	33.9	20.1		32.5	16.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		33.5	5.0		36.0	9.4	33.9	20.1		32.5	16.3	
Queue Length 50th (ft)		43	5		63	60	37	145		136	93	
Queue Length 95th (ft)		81	25		109	91	74	230		224	253	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		304	848		350	869	484	1430		477	1887	
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		0.32	0.10		0.39	0.33	0.17	0.53		0.62	0.39	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 10 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Future Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		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)		1805	1615		1829	1636	1847	3377		1787	3405	
Flt Permitted		0.61	1.00		0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1161	1615		1336	1636	1847	3377		1787	3405	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	97	0	84	137	0	291	80	649	116	297	673	72
RTOR Reduction (vph)	0	0	47	0	0	43	0	16	0	0	7	0
Lane Group Flow (vph)	0	97	37	0	137	248	80	749	0	297	738	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		13.3	21.0		13.3	30.4	7.7	31.6		17.1	41.0	
Effective Green, g (s)		15.3	25.0		15.3	34.4	9.7	33.6		19.1	43.0	
Actuated g/C Ratio		0.19	0.31		0.19	0.43	0.12	0.42		0.24	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		222	585		255	785	223	1418		426	1830	
v/s Ratio Prot			0.01			0.08	0.04	c0.22		c0.17	0.22	
v/s Ratio Perm		0.08	0.02		c0.10	0.08						
v/c Ratio		0.44	0.06		0.54	0.32	0.36	0.53		0.70	0.40	
Uniform Delay, d1		28.5	19.3		29.2	15.0	32.3	17.3		27.8	10.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.87	1.27	
Incremental Delay, d2		1.4	0.0		2.2	0.2	1.0	1.4		4.6	0.6	
Delay (s)		29.9	19.3		31.3	15.3	33.3	18.7		28.8	14.5	
Level of Service		C	B		C	B	C	B		C	B	
Approach Delay (s/veh)		25.0			20.4			20.1			18.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

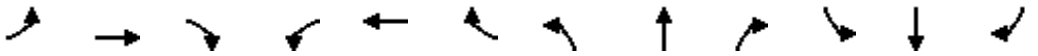
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	33	930	29	37	907
Future Vol, veh/h	32	33	930	29	37	907
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	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	97	97	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	55	57	959	30	41	1008

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1560	494	0	0	989	0
Stage 1	974	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	105	526	-	-	701	-
Stage 1	331	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	99	526	-	-	701	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	312	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	61.14	0	0.41
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	168	701	-
HCM Lane V/C Ratio	-	-	0.666	0.059	-
HCM Ctrl Dly (s/v)	-	-	61.1	10.5	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	3.9	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Future Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.993	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3431	0
Flt Permitted		0.638			0.688		0.950			0.950		
Satd. Flow (perm)	0	1200	1599	0	1294	1599	1805	3490	1561	1787	3431	0
Satd. Flow (RTOR)			205			205			123		6	
Adj. Flow (vph)	62	8	93	109	7	31	74	861	47	18	879	42
Lane Group Flow (vph)	0	70	93	0	116	31	74	861	47	18	921	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	23.0	31.0	31.0	23.0	31.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	28.8%	38.8%	38.8%	28.8%	38.8%	
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	25.0	25.0	17.0	25.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.21		0.50	0.07	0.31	0.35	0.04	0.08	0.44	
Control Delay (s/veh)		31.3	1.0		36.1	0.3	33.4	11.6	3.6	46.8	19.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.3	1.0		36.1	0.3	33.4	11.6	3.6	46.8	19.9	
Queue Length 50th (ft)		31	0		53	0	39	76	0	10	113	
Queue Length 95th (ft)		59	0		68	0	m75	296	m9	m25	324	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		330	588		355	588	428	2460	1136	424	2090	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.21	0.16		0.33	0.05	0.17	0.35	0.04	0.04	0.44	

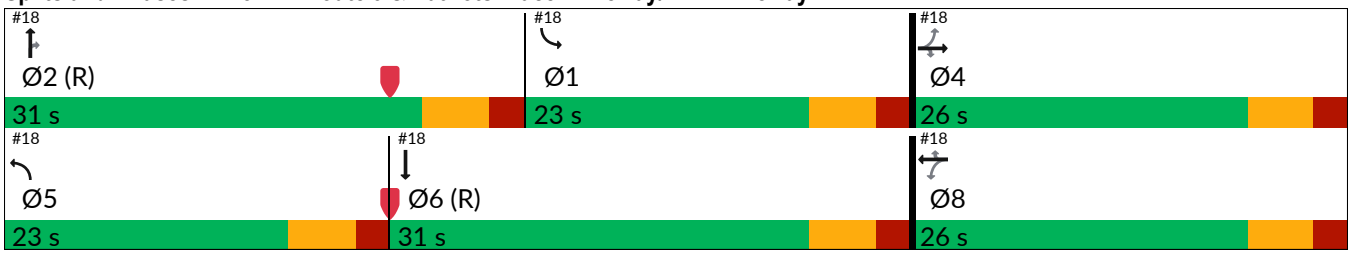
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

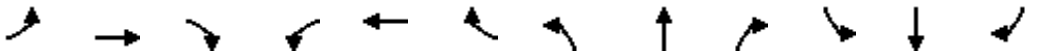
Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Future Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3431	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1201	1599		1295	1599	1805	3490	1561	1787	3431	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.90	0.90	0.90
Adj. Flow (vph)	62	8	93	109	7	31	74	861	47	18	879	42
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	18	0	3	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	861	29	18	918	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.0	11.0		11.0	11.0	7.5	47.6	47.6	3.4	43.5	
Effective Green, g (s)		13.0	13.0		13.0	13.0	9.5	49.6	49.6	5.4	45.5	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.12	0.62	0.62	0.07	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	259		210	259	214	2163	967	120	1951	
v/s Ratio Prot							0.04	c0.25		0.01	c0.27	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.36	0.06		0.55	0.02	0.35	0.40	0.03	0.15	0.47	
Uniform Delay, d1		29.8	28.3		30.8	28.1	32.4	7.7	5.9	35.1	10.2	
Progression Factor		1.00	1.00		1.00	1.00	0.99	1.29	1.00	1.64	1.58	
Incremental Delay, d2		1.1	0.1		3.1	0.0	0.9	0.5	0.1	0.5	0.8	
Delay (s)		30.9	28.4		33.9	28.2	32.9	10.4	5.9	58.1	16.8	
Level of Service		C	C		C	C	C	B	A	E	B	
Approach Delay (s/veh)		29.5			32.7			11.9			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Future Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3458	0
Flt Permitted		0.655			0.655		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1191	1546	1787	3455	1599	1685	3458	0
Satd. Flow (RTOR)			42			50			123		9	
Adj. Flow (vph)	100	20	42	89	26	213	64	833	22	136	816	54
Lane Group Flow (vph)	0	120	42	0	115	213	64	833	22	136	870	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0	21.0	26.0	26.0	21.0	21.0	33.0	33.0	21.0	33.0	
Total Split (%)	32.5%	32.5%	26.3%	32.5%	32.5%	26.3%	26.3%	41.3%	41.3%	26.3%	41.3%	
Maximum Green (s)	20.0	20.0	15.0	20.0	20.0	15.0	15.0	27.0	27.0	15.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.08		0.53	0.35	0.28	0.46	0.02	0.47	0.41	
Control Delay (s/veh)		37.5	4.7		38.0	12.9	40.9	12.1	0.8	34.5	12.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		37.5	4.7		38.0	12.9	40.9	12.1	0.8	34.5	12.3	
Queue Length 50th (ft)		55	0		53	53	35	119	0	62	128	
Queue Length 95th (ft)		93	15		89	71	57	304	m4	108	221	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		342	689		327	669	379	1829	904	363	2118	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.35	0.06		0.35	0.32	0.17	0.46	0.02	0.37	0.41	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

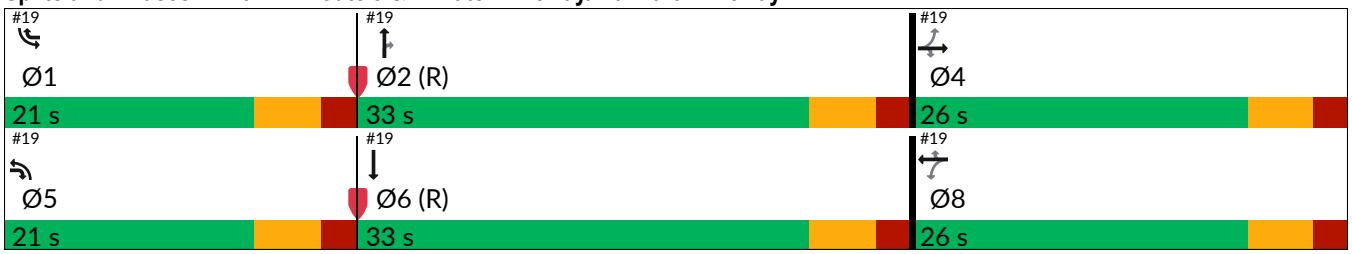
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green

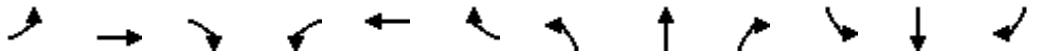
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway

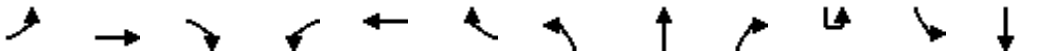




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Future Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3457	
Flt Permitted		0.65	1.00		0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1192	1546	1787	3455	1599	1685	3457	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	20	42	89	26	213	64	833	22	136	816	54
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	11	0	4	0
Lane Group Flow (vph)	0	120	12	0	115	180	64	833	11	136	866	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.1	18.3		11.1	22.8	7.2	39.2	39.2	11.7	43.7	
Effective Green, g (s)		13.1	22.3		13.1	26.8	9.2	41.2	41.2	13.7	45.7	
Actuated g/C Ratio		0.16	0.28		0.16	0.34	0.12	0.52	0.52	0.17	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	530		195	595	205	1779	823	288	1974	
v/s Ratio Prot			0.00			0.05	0.04	c0.24		c0.08	0.25	
v/s Ratio Perm		0.10	0.00		c0.10	0.06			0.01			
v/c Ratio		0.59	0.02		0.59	0.30	0.31	0.47	0.01	0.47	0.44	
Uniform Delay, d1		31.0	20.9		31.0	19.7	32.5	12.4	9.5	29.9	9.8	
Progression Factor		1.00	1.00		1.00	1.00	1.23	0.78	1.00	1.00	1.00	
Incremental Delay, d2		4.6	0.0		4.5	0.3	0.8	0.9	0.0	1.2	0.7	
Delay (s)		35.5	21.0		35.5	20.0	40.9	10.5	9.5	31.1	10.5	
Level of Service		D	C		D	B	D	B	A	C	B	
Approach Delay (s/veh)		31.7			25.4			12.6			13.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	139	0	14	0	0	1	10	998	1	3	1	865
Future Volume (vph)	139	0	14	0	0	1	10	998	1	3	1	865
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.865							0.979
Flt Protected		0.950					0.950				0.950	
Satd. Flow (prot)	0	2046	1669	0	1863	0	1668	3455	0	0	1787	3383
Flt Permitted		0.755					0.950				0.950	
Satd. Flow (perm)	0	1626	1669	0	1863	0	1668	3455	0	0	1787	3383
Satd. Flow (RTOR)			164		258							31
Adj. Flow (vph)	154	0	16	0	0	4	11	1062	1	3	1	920
Lane Group Flow (vph)	0	154	16	0	4	0	11	1063	0	0	4	1069
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	11.0	16.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		11.0	22.0		11.0	11.0	22.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		18.3%	36.7%		18.3%	18.3%	36.7%
Maximum Green (s)	21.0	21.0	21.0	21.0	21.0		5.0	16.0		5.0	5.0	16.0
Yellow Time (s)	4.0	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		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	None	Min
v/c Ratio		0.35	0.03		0.01		0.04	0.53			0.01	0.55
Control Delay (s/veh)		14.8	0.1		0.0		17.1	11.7			17.0	11.7
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)		14.8	0.1		0.0		17.1	11.7			17.0	11.7
Queue Length 50th (ft)		24	0		0		2	71			1	70
Queue Length 95th (ft)		76	0		0		14	#277			8	#279
Internal Link Dist (ft)		54			538			1735				1472
Turn Bay Length (ft)							160				200	
Base Capacity (vph)		926	1021		1172		289	1987			309	1958
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.17	0.02		0.00		0.04	0.53			0.01	0.55

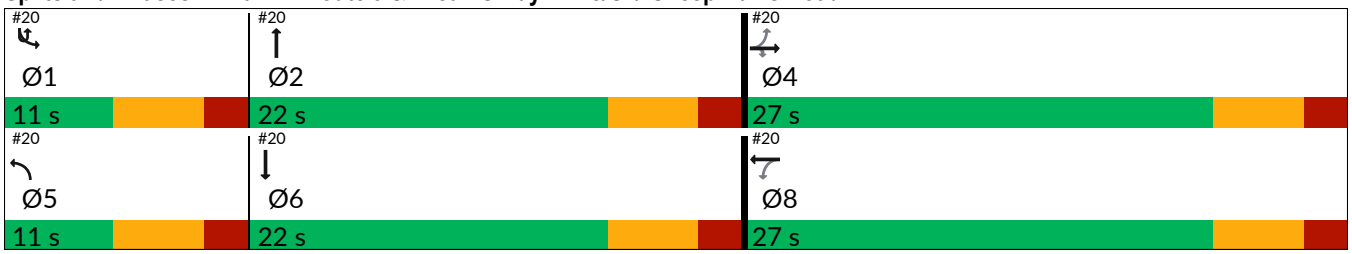
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 41.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	149
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road



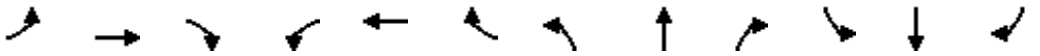
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	139	0	14	0	0	1	10	998	1	3	1	865
Future Volume (vph)	139	0	14	0	0	1	10	998	1	3	1	865
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	16	13	14	16	14	10	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95			1.00	0.95
Frt		1.00	0.85		0.87		1.00	1.00			1.00	0.98
Flt Protected		0.95	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)		2046	1669		1863		1668	3455			1787	3383
Flt Permitted		0.76	1.00		1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1626	1669		1863		1668	3455			1787	3383
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	154	0	16	0	0	4	11	1062	1	3	1	920
RTOR Reduction (vph)	0	0	13	0	3	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	154	3	0	1	0	11	1063	0	0	4	1053
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)		7.8	7.8		7.8		0.8	20.7			0.8	20.7
Effective Green, g (s)		9.8	9.8		9.8		2.8	22.7			2.8	22.7
Actuated g/C Ratio		0.21	0.21		0.21		0.06	0.48			0.06	0.48
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0			6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		336	345		385		98	1658			105	1623
v/s Ratio Prot					0.00		c0.01	0.31			0.00	c0.31
v/s Ratio Perm		c0.09	0.00									
v/c Ratio		0.46	0.01		0.00		0.11	0.64			0.04	0.65
Uniform Delay, d1		16.4	14.9		14.9		21.1	9.2			21.0	9.3
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		1.0	0.0		0.0		0.5	0.9			0.1	0.9
Delay (s)		17.4	14.9		14.9		21.6	10.1			21.1	10.2
Level of Service		B	B		B		C	B			C	B
Approach Delay (s/veh)		17.2			14.9			10.2				10.2
Approach LOS		B			B			B				B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	140
Future Volume (vph)	140
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	149
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

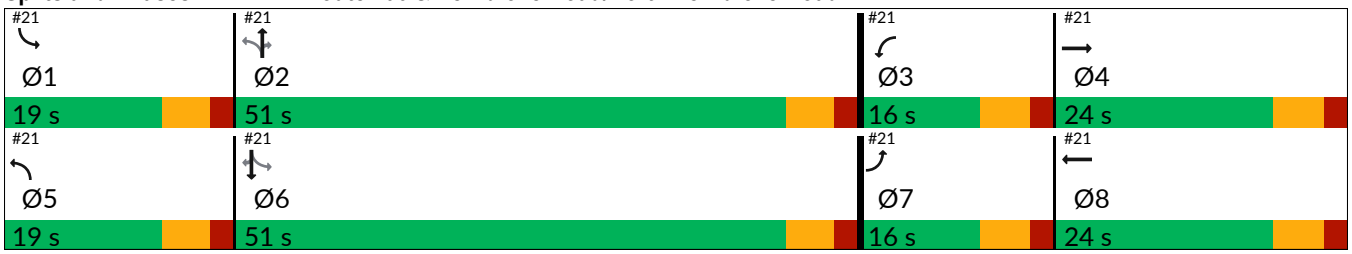


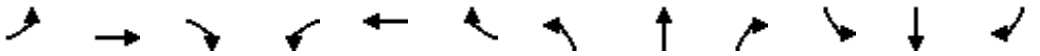
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Future Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915			0.912				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1721	0	1736	1500	0	1811	1845	1568	1829	1863	1531
Flt Permitted	0.950			0.950			0.084			0.084		
Satd. Flow (perm)	1787	1721	0	1736	1500	0	160	1845	1568	162	1863	1531
Satd. Flow (RTOR)		52			57				149			149
Adj. Flow (vph)	273	86	111	32	48	68	86	1190	67	101	915	175
Lane Group Flow (vph)	273	197	0	32	116	0	86	1190	67	101	915	175
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	1.21	0.47		0.19	0.46		0.33	1.30	0.08	0.38	0.98	0.21
Control Delay (s/veh)	166.8	31.1		45.3	27.7		13.4	169.1	0.2	14.4	52.7	4.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	166.8	31.1		45.3	27.7		13.4	169.1	0.2	14.4	52.7	4.8
Queue Length 50th (ft)	~214	84		19	35		20	~993	0	23	~573	8
Queue Length 95th (ft)	#420	168		52	91		51	#1428	0	61	#982	51
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	226	437		219	361		358	914	852	362	930	839
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.45		0.15	0.32		0.24	1.30	0.08	0.28	0.98	0.21

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 95.9
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

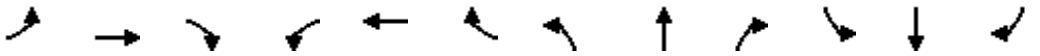




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Future Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1722		1736	1500		1811	1845	1568	1829	1863	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1787	1722		1736	1500		160	1845	1568	161	1863	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	273	86	111	32	48	68	86	1190	67	101	915	175
RTOR Reduction (vph)	0	41	0	0	48	0	0	0	35	0	0	77
Lane Group Flow (vph)	273	156	0	32	68	0	86	1190	32	101	915	98
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	19.0		4.7	13.6		51.8	45.6	45.6	52.4	45.9	45.9
Effective Green, g (s)	12.1	21.0		6.7	15.6		55.8	47.6	47.6	56.4	47.9	47.9
Actuated g/C Ratio	0.12	0.21		0.07	0.16		0.56	0.48	0.48	0.57	0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	362		116	234		225	879	747	233	894	734
v/s Ratio Prot	c0.15	c0.09		0.02	0.05		0.03	c0.65		c0.04	0.49	
v/s Ratio Perm							0.18		0.02	0.21		0.06
v/c Ratio	1.26	0.43		0.28	0.29		0.38	1.35	0.04	0.43	1.02	0.13
Uniform Delay, d1	43.9	34.2		44.2	37.2		20.2	26.1	13.9	20.2	26.0	14.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	150.3	0.8		1.3	0.7		1.1	166.7	0.0	1.3	36.2	0.1
Delay (s)	194.1	35.0		45.5	37.9		21.2	192.8	14.0	21.5	62.1	14.5
Level of Service	F	D		D	D		C	F	B	C	E	B
Approach Delay (s/veh)		127.4			39.5			172.9			51.7	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	114.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Future Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.861			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1566	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.686			0.673			0.125			0.289		
Satd. Flow (perm)	1290	1566	0	1279	1981	0	227	1818	1599	544	1818	1546
Satd. Flow (RTOR)		121			59				66			352
Adj. Flow (vph)	453	10	121	17	51	59	65	785	1	10	716	352
Lane Group Flow (vph)	453	131	0	17	110	0	65	785	1	10	716	352
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	1.20	0.24		0.05	0.18		0.19	0.75	0.00	0.04	0.87	0.39
Control Delay (s/veh)	139.9	6.0		16.8	10.2		7.0	15.2	0.0	13.3	33.0	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	139.9	6.0		16.8	10.2		7.0	15.2	0.0	13.3	33.0	3.4
Queue Length 50th (ft)	~222	3		5	14		10	194	0	2	~275	0
Queue Length 95th (ft)	#382	37		17	46		23	326	0	11	#501	47
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	376	542		373	620		423	1091	986	247	825	894
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.20	0.24		0.05	0.18		0.15	0.72	0.00	0.04	0.87	0.39

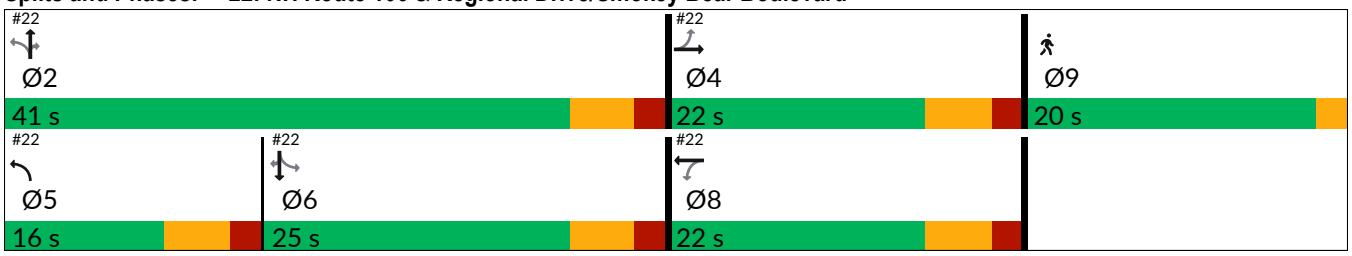
Intersection Summary
Cycle Length: 83

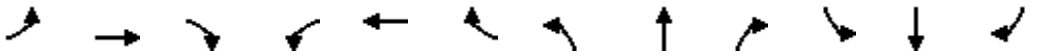
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 61.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

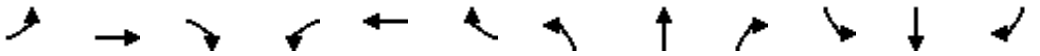




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Future Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.69	1.00		0.67	1.00		0.13	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	1291	1567		1279	1980		227	1818	1599	545	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	453	10	121	17	51	59	65	785	1	10	716	352
RTOR Reduction (vph)	0	87	0	0	42	0	0	0	0	0	0	198
Lane Group Flow (vph)	453	44	0	17	68	0	65	785	1	10	716	154
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.0	16.0		16.0	16.0		36.1	36.1	36.1	26.0	26.0	26.0
Effective Green, g (s)	18.0	18.0		18.0	18.0		38.1	38.1	38.1	28.0	28.0	28.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.59	0.59	0.59	0.44	0.44	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	362	440		359	556		277	1080	950	238	794	675
v/s Ratio Prot		0.03			0.03		0.02	c0.43			c0.39	
v/s Ratio Perm	c0.35			0.01			0.12		0.00	0.02		0.10
v/c Ratio	1.25	0.10		0.05	0.12		0.23	0.73	0.00	0.04	0.90	0.23
Uniform Delay, d1	23.0	17.1		16.8	17.2		10.3	9.3	5.3	10.4	16.8	11.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	134.0	0.1		0.1	0.1		0.4	2.5	0.0	0.1	13.4	0.2
Delay (s)	157.1	17.2		16.9	17.3		10.7	11.8	5.3	10.4	30.2	11.5
Level of Service	F	B		B	B		B	B	A	B	C	B
Approach Delay (s/veh)		125.7			17.2			11.7			23.9	
Approach LOS		F			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

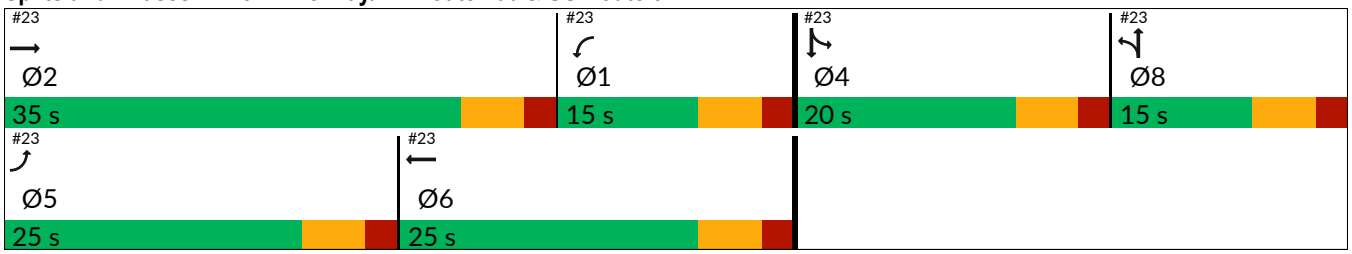


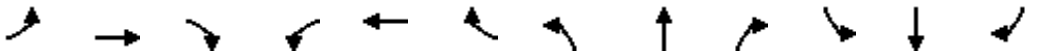
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	762	8	1	399	366	55	22	5	514	2	227
Future Volume (vph)	196	762	8	1	399	366	55	22	5	514	2	227
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Satd. Flow (RTOR)			347			398			347			347
Adj. Flow (vph)	209	811	9	1	434	398	77	31	7	565	2	249
Lane Group Flow (vph)	209	811	9	1	434	398	77	31	7	565	2	249
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		20.0	20.0	
Total Split (%)	29.4%	41.2%		17.6%	29.4%		17.6%	17.6%		23.5%	23.5%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		14.0	14.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.55	0.49	0.01	0.00	0.53	0.23	0.18	0.13	0.00	0.75	0.00	0.16
Control Delay (s/veh)	32.3	15.7	0.0	32.0	28.1	0.3	32.4	33.0	0.0	36.5	27.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.3	15.7	0.0	32.0	28.1	0.3	32.4	33.0	0.0	36.5	27.0	0.2
Queue Length 50th (ft)	86	121	0	0	93	0	17	13	0	128	1	0
Queue Length 95th (ft)	164	250	0	5	152	0	31	33	0	#250	7	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350		150	200		200	250		150	250		200
Base Capacity (vph)	531	1732	1759	277	1061	1759	529	287	1725	777	421	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.47	0.01	0.00	0.41	0.23	0.15	0.11	0.00	0.73	0.00	0.16

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 71.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

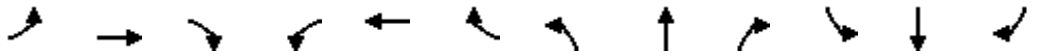




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	762	8	1	399	366	55	22	5	514	2	227
Future Volume (vph)	196	762	8	1	399	366	55	22	5	514	2	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3455	1759	1728	3455	1759	3286	1783	1725	3319	1801	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.71	0.71	0.71	0.91	0.91	0.91
Adj. Flow (vph)	209	811	9	1	434	398	77	31	7	565	2	249
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	209	811	9	1	434	398	77	31	7	565	2	249
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.7	32.1	77.2	1.5	19.9	77.2	5.6	5.6	77.2	14.0	14.0	77.2
Effective Green, g (s)	15.7	34.1	77.2	3.5	21.9	77.2	7.6	7.6	77.2	16.0	16.0	77.2
Actuated g/C Ratio	0.20	0.44	1.00	0.05	0.28	1.00	0.10	0.10	1.00	0.21	0.21	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	351	1526	1759	78	980	1759	323	175	1725	687	373	1583
v/s Ratio Prot	c0.12	c0.23		0.00	c0.13		0.02	0.02		c0.17	0.00	
v/s Ratio Perm			0.01			c0.23			0.00			0.16
v/c Ratio	0.60	0.53	0.01	0.01	0.44	0.23	0.24	0.18	0.00	0.82	0.01	0.16
Uniform Delay, d1	27.9	15.7	0.0	35.2	22.7	0.0	32.1	31.9	0.0	29.2	24.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.4	0.0	0.1	0.3	0.3	0.4	0.5	0.0	7.9	0.0	0.2
Delay (s)	30.6	16.1	0.0	35.3	23.0	0.3	32.5	32.4	0.0	37.1	24.3	0.2
Level of Service	C	B	A	D	C	A	C	C	A	D	C	A
Approach Delay (s/veh)		18.9			12.2			30.5			25.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Future Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	1787	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.871			0.726	
Satd. Flow (perm)	1787	3336	0	1668	3316	0	0	1655	1830	0	1320	1546
Satd. Flow (RTOR)					3				150			635
Adj. Flow (vph)	484	1219	1	2	1170	49	2	2	4	103	1	1020
Lane Group Flow (vph)	484	1220	0	2	1219	0	0	4	4	0	104	1020
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.77	0.47		0.02	0.91			0.02	0.01		0.64	1.37
Control Delay (s/veh)	38.0	5.2		42.5	39.1			38.0	0.0		59.4	188.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	38.0	5.2		42.5	39.1			38.0	0.0		59.4	188.2
Queue Length 50th (ft)	265	99		1	368			2	0		62	~472
Queue Length 95th (ft)	#400	225		8	#511			7	0		#135	#719
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	626	2572		120	1335			204	357		163	747
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	0.77	0.47		0.02	0.91			0.02	0.01		0.64	1.37

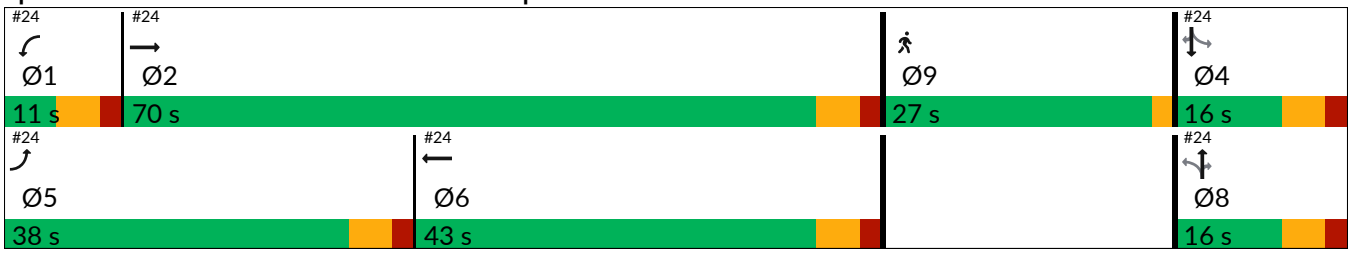
Intersection Summary
Cycle Length: 124

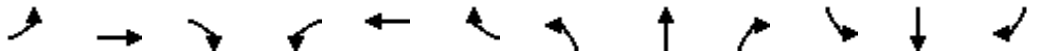
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 97
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 24: Black Hill Road/Old Turnpike Road & US Route 3

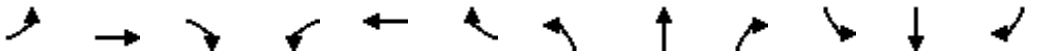




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Future Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	1787	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.87	1.00		0.73	1.00
Satd. Flow (perm)	1787	3336		1668	3316			1655	1830		1320	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	484	1219	1	2	1170	49	2	2	4	103	1	1020
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	4	0	0	560
Lane Group Flow (vph)	484	1220	0	2	1217	0	0	4	0	0	104	460
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	32.0	72.8		1.0	41.8			10.0	10.0		10.0	10.0
Effective Green, g (s)	34.0	74.8		3.0	43.8			12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.33	0.73		0.03	0.43			0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	596	2451		49	1426			195	215		155	182
v/s Ratio Prot	c0.27	0.37		0.00	c0.37							
v/s Ratio Perm								0.00	0.00		0.08	c0.30
v/c Ratio	0.81	0.50		0.04	0.85			0.02	0.00		0.67	2.53
Uniform Delay, d1	31.0	5.6		48.0	26.1			39.7	39.6		43.0	44.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	8.3	0.2		0.3	5.2			0.0	0.0		10.9	703.0
Delay (s)	39.3	5.8		48.3	31.3			39.7	39.6		53.9	747.9
Level of Service	D	A		D	C			D	D		D	F
Approach Delay (s/veh)		15.3			31.3			39.7			683.7	
Approach LOS		B			C			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	205.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	101.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1494	8	5	1282	53	5	0	22	60	0	33
Future Volume (vph)	11	1494	8	5	1282	53	5	0	22	60	0	33
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4959	0	1668	3434	0	1805	1615	0	1760	1524	0
Flt Permitted	0.950			0.950			0.733			0.742		
Satd. Flow (perm)	1728	4959	0	1668	3434	0	1393	1615	0	1374	1524	0
Satd. Flow (RTOR)		1			6			553			164	
Adj. Flow (vph)	12	1606	9	5	1393	58	6	0	24	67	0	37
Lane Group Flow (vph)	12	1615	0	5	1451	0	6	24	0	67	37	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			16.0	16.0		16.0	16.0	
Total Split (s)	12.0	53.0		32.0			33.0	33.0		33.0	33.0	
Total Split (%)	8.6%	37.9%		22.9%			23.6%	23.6%		23.6%	23.6%	
Maximum Green (s)	6.0	47.0		26.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.12	0.93		0.01	0.61		0.02	0.03		0.24	0.08	
Control Delay (s/veh)	65.7	54.4		59.8	2.4		44.6	0.1		49.1	0.4	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.7	54.4		59.8	2.5		44.6	0.1		49.1	0.4	
Queue Length 50th (ft)	11	521		4	28		4	0		54	0	
Queue Length 95th (ft)	33	#602		m6	45		17	0		102	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	98	1736		340	2386		288	772		284	445	
Starvation Cap Reductn	0	0		0	237		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	0.12	0.93		0.01	0.68		0.02	0.03		0.24	0.08	

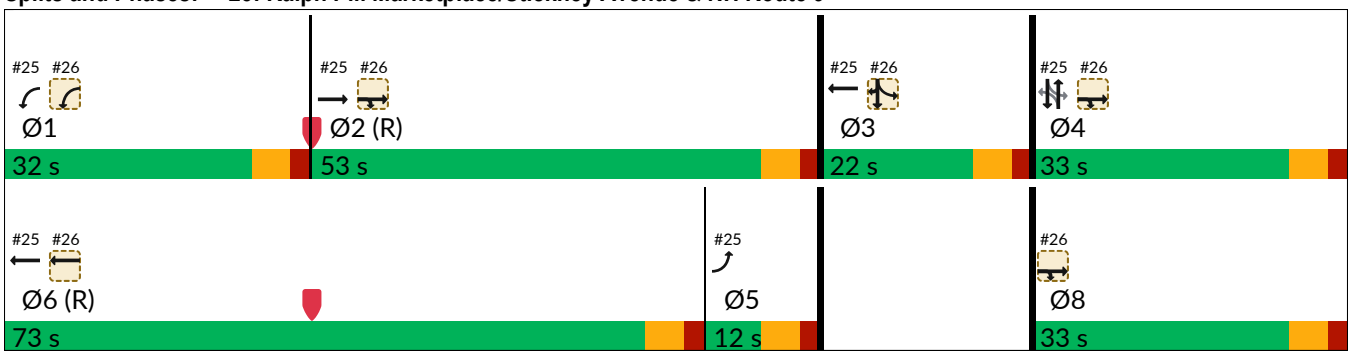
Intersection Summary
Cycle Length: 140

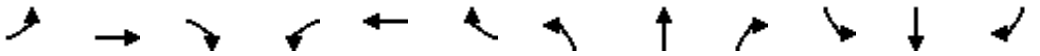
Lane Group	Ø3	Ø6	Ø8
Lane Configurations	[redacted]	[redacted]	[redacted]
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	16.0	24.0	33.0
Total Split (s)	22.0	73.0	33.0
Total Split (%)	16%	52%	24%
Maximum Green (s)	16.0	67.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
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.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

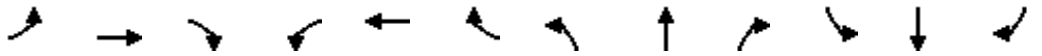




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1494	8	5	1282	53	5	0	22	60	0	33
Future Volume (vph)	11	1494	8	5	1282	53	5	0	22	60	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4960		1668	3434		1805	1615		1760	1524	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1728	4960		1668	3434		1393	1615		1374	1524	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	1606	9	5	1393	58	6	0	24	67	0	37
RTOR Reduction (vph)	0	1	0	0	2	0	0	19	0	0	29	0
Lane Group Flow (vph)	12	1614	0	5	1449	0	6	5	0	67	8	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	47.0		26.6	87.2		26.4	26.4		26.4	26.4	
Effective Green, g (s)	4.4	49.0		28.6	91.2		28.4	28.4		28.4	28.4	
Actuated g/C Ratio	0.03	0.35		0.20	0.65		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	54	1736		340	2237		282	327		278	309	
v/s Ratio Prot	0.01	c0.33		0.00	c0.42			0.00			0.00	
v/s Ratio Perm							0.00			c0.05		
v/c Ratio	0.22	0.93		0.01	0.65		0.02	0.01		0.24	0.02	
Uniform Delay, d1	66.1	43.8		44.5	14.7		44.7	44.6		46.8	44.7	
Progression Factor	1.00	1.00		1.32	0.16		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	10.4		0.0	0.5		0.0	0.0		0.5	0.0	
Delay (s)	68.2	54.2		58.8	2.9		44.7	44.6		47.2	44.7	
Level of Service	E	D		E	A		D	D		D	D	
Approach Delay (s/veh)		54.3			3.0			44.6			46.3	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1333	243	764	1102	0	0	0	0	233	0	238
Future Volume (vph)	0	1333	243	764	1102	0	0	0	0	233	0	238
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4916	1794	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			267									164
Adj. Flow (vph)	0	1465	267	780	1124	0	0	0	0	259	0	264
Lane Group Flow (vph)	0	1465	267	780	1124	0	0	0	0	0	259	264
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					16.0	16.0	16.0
Total Split (s)				32.0	73.0					22.0	22.0	22.0
Total Split (%)				22.9%	52.1%					15.7%	15.7%	15.7%
Maximum Green (s)				26.0	67.0					16.0	16.0	16.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.54	0.24	1.18	0.61						1.13	0.76
Control Delay (s/veh)		1.7	0.4	161.3	10.9						152.6	37.0
Queue Delay		0.9	1.7	4.1	1.1						21.1	0.0
Total Delay (s/veh)		2.6	2.0	165.4	12.0						173.7	37.0
Queue Length 50th (ft)		15	0	~443	110						~275	89
Queue Length 95th (ft)		m41	m0	#572	191						#456	#214
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2738	1117	661	1830						229	348
Starvation Cap Reductn		887	673	261	433						0	0
Spillback Cap Reductn		536	0	0	2						149	0
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.79	0.60	1.95	0.80						3.24	0.76

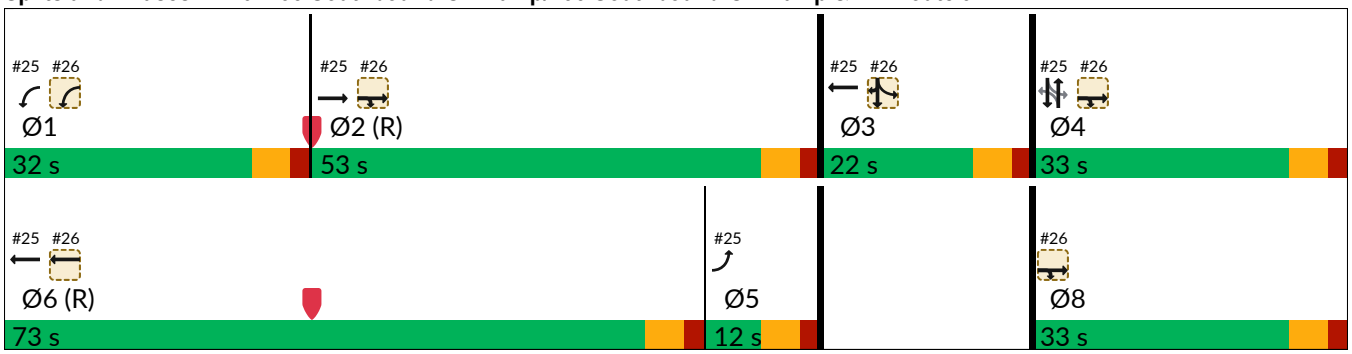
Intersection Summary
Cycle Length: 140

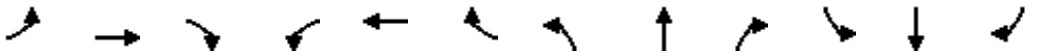
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	16.0	12.0	33.0
Total Split (s)	53.0	33.0	12.0	33.0
Total Split (%)	38%	24%	9%	24%
Maximum Green (s)	47.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 140
Offset: 123 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

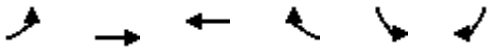




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1333	243	764	1102	0	0	0	0	233	0	238
Future Volume (vph)	0	1333	243	764	1102	0	0	0	0	233	0	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4916	1794	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4916	1794	3236	3336						1787	1599
Peak-hour factor, PHF	0.91	0.91	0.91	0.98	0.98	0.98	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1465	267	780	1124	0	0	0	0	259	0	264
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	0	143
Lane Group Flow (vph)	0	1465	148	780	1124	0	0	0	0	0	259	121
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		73.4	73.4	26.6	71.2						16.0	16.0
Effective Green, g (s)		77.4	77.4	28.6	73.2						18.0	18.0
Actuated g/C Ratio		0.55	0.55	0.20	0.52						0.13	0.13
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2717	991	661	1744						229	205
v/s Ratio Prot		c0.30	0.08	c0.24	c0.34						c0.14	0.08
v/s Ratio Perm												
v/c Ratio		0.54	0.15	1.18	0.64						1.13	0.59
Uniform Delay, d1		19.9	15.3	55.7	24.0						61.0	57.5
Progression Factor		0.13	0.17	1.51	0.42						1.00	1.00
Incremental Delay, d2		0.1	0.0	94.1	1.6						99.3	4.5
Delay (s)		2.7	2.7	178.2	11.7						160.3	62.0
Level of Service		A	A	F	B						F	E
Approach Delay (s/veh)		2.7			79.9			0.0			110.7	
Approach LOS		A			E			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

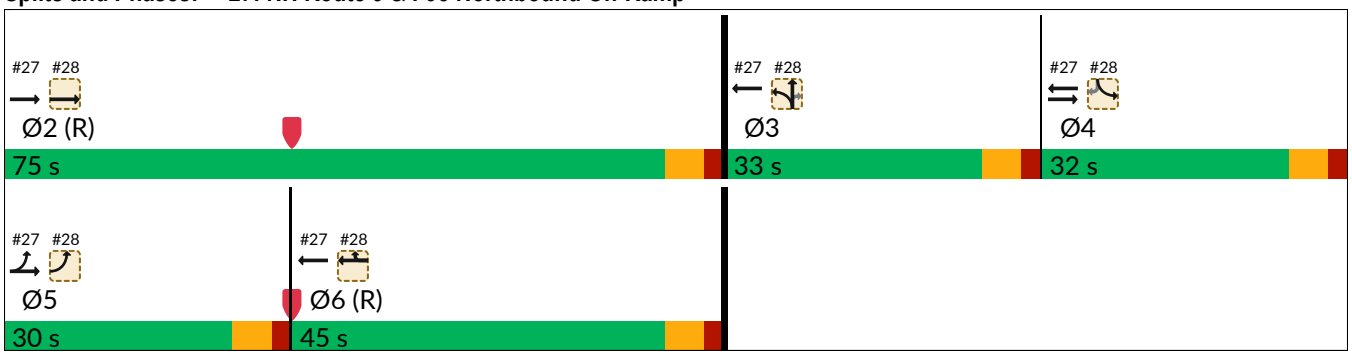


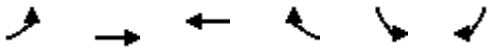
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	264	1302	1866	384	0	0				
Future Volume (vph)	264	1302	1866	384	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1652	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1652	0	0				
Satd. Flow (RTOR)				159						
Adj. Flow (vph)	293	1447	1944	400	0	0				
Lane Group Flow (vph)	293	1447	1944	400	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	30.0						75.0	33.0	32.0	45.0
Total Split (%)	21.4%						54%	24%	23%	32%
Maximum Green (s)	24.0						69.0	27.0	26.0	39.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lead							Lead	Lag	Lag
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	None	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.95	0.59	0.54	0.24						
Control Delay (s/veh)	100.1	25.9	1.8	0.0						
Queue Delay	51.0	6.6	48.1	0.0						
Total Delay (s/veh)	151.1	32.5	49.8	0.0						
Queue Length 50th (ft)	288	523	42	0						
Queue Length 95th (ft)	m#427	m574	m31	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	309	2454	3628	1652						
Starvation Cap Reductn	148	955	1911	0						
Spillback Cap Reductn	0	309	1326	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	1.82	0.97	1.13	0.24						

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
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.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

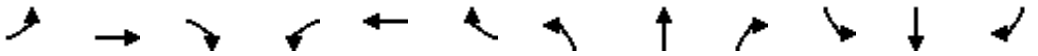




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	264	1302	1866	384	0	0
Future Volume (vph)	264	1302	1866	384	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1652		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1652		
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.90	0.90
Adj. Flow (vph)	293	1447	1944	400	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	293	1447	1944	400	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	24.0	101.0	104.0	140.0		
Effective Green, g (s)	26.0	103.0	106.0	140.0		
Actuated g/C Ratio	0.19	0.74	0.76	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	309	2454	3628	1652		
v/s Ratio Prot	c0.18	c0.43	c0.41			
v/s Ratio Perm				0.24		
v/c Ratio	0.95	0.59	0.54	0.24		
Uniform Delay, d1	56.3	8.6	6.9	0.0		
Progression Factor	1.20	2.85	0.25	1.00		
Incremental Delay, d2	32.0	0.3	0.0	0.0		
Delay (s)	99.3	24.9	1.7	0.0		
Level of Service	F	C	A	A		
Approach Delay (s/veh)		37.4	1.4		0.0	
Approach LOS		D	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

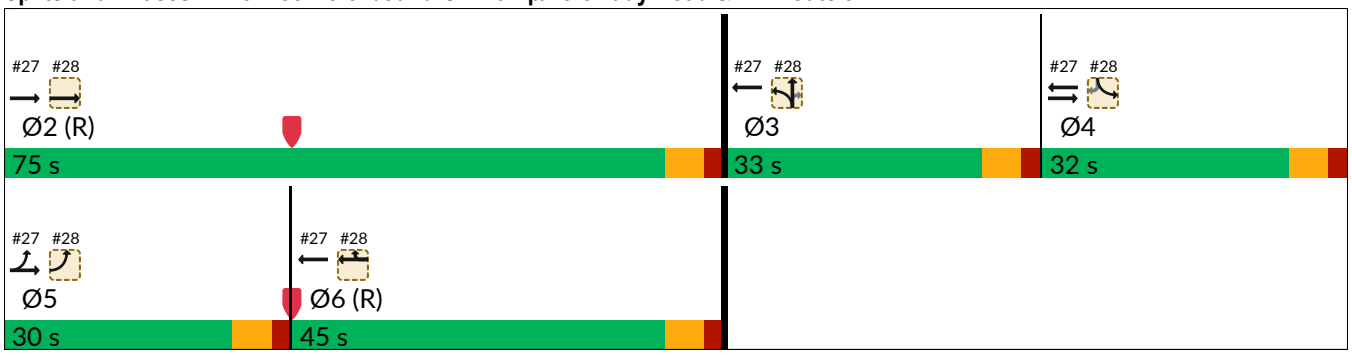


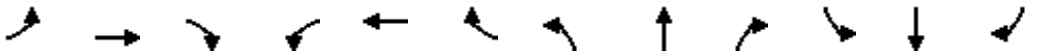
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	911	0	0	1407	408	182	325	518	246	0	661
Future Volume (vph)	391	911	0	0	1407	408	182	325	518	246	0	661
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.934	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1770	3166	1489	3467	0	1652
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1770	3166	1489	3467	0	1652
Satd. Flow (RTOR)						280		109	117			383
Adj. Flow (vph)	434	1012	0	0	1563	453	202	361	576	267	0	718
Lane Group Flow (vph)	434	1012	0	0	1563	453	202	643	294	267	0	718
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	30.0	75.0			45.0	45.0	33.0	33.0	33.0	32.0		32.0
Total Split (%)	21.4%	53.6%			32.1%	32.1%	23.6%	23.6%	23.6%	22.9%		22.9%
Maximum Green (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead				Lag	Lag	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.72	0.58			1.55	0.67	0.55	0.87	0.73	0.39		1.13
Control Delay (s/veh)	40.4	23.6			287.3	32.2	56.2	57.5	42.6	50.5		100.2
Queue Delay	38.3	1.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay (s/veh)	78.7	24.6			287.3	32.2	56.2	57.5	42.6	50.5		100.2
Queue Length 50th (ft)	201	415			~1053	208	169	269	172	110		~463
Queue Length 95th (ft)	227	489			#1204	m326	256	#374	297	155		#714
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	600	1752			1011	681	366	742	401	693		636
Starvation Cap Reductn	189	455			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	0	0	0	0		0
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.06	0.78			1.55	0.67	0.55	0.87	0.73	0.39		1.13

Intersection Summary
Cycle Length: 140

Actuated Cycle Length: 140
Offset: 108 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	911	0	0	1407	408	182	325	518	246	0	661
Future Volume (vph)	391	911	0	0	1407	408	182	325	518	246	0	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1770	3167	1489	3467		1652
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1770	3167	1489	3467		1652
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	434	1012	0	0	1563	453	202	361	576	267	0	718
RTOR Reduction (vph)	0	0	0	0	0	198	0	86	93	0	0	306
Lane Group Flow (vph)	434	1012	0	0	1563	255	202	557	201	267	0	412
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	24.0	69.0			39.0	39.0	27.0	27.0	27.0	26.0		26.0
Effective Green, g (s)	26.0	71.0			41.0	41.0	29.0	29.0	29.0	28.0		28.0
Actuated g/C Ratio	0.19	0.51			0.29	0.29	0.21	0.21	0.21	0.20		0.20
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	600	1752			1011	483	366	656	308	693		330
v/s Ratio Prot	c0.13	0.29			c0.45	0.15	0.11	c0.18		0.08		
v/s Ratio Perm									0.14			c0.25
v/c Ratio	0.72	0.58			1.55	0.53	0.55	0.85	0.65	0.39		1.25
Uniform Delay, d1	53.6	24.0			49.5	41.4	49.7	53.4	50.9	48.5		56.0
Progression Factor	0.64	0.92			1.21	1.82	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.5	1.1			248.6	2.4	1.8	10.0	4.9	0.4		134.1
Delay (s)	37.6	23.3			308.5	77.8	51.5	63.4	55.8	48.9		190.1
Level of Service	D	C			F	E	D	E	E	D		F
Approach Delay (s/veh)		27.6			256.7			59.3			151.8	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	138.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Future Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	3455	0	0	1805	1669	0	1763
Flt Permitted		0.950			0.950				0.719			
Satd. Flow (perm)	0	1728	3455	1492	1728	3455	0	0	1366	1669	0	1763
Satd. Flow (RTOR)				112						86		57
Adj. Flow (vph)	2	32	1420	309	27	1601	0	375	0	86	0	2
Lane Group Flow (vph)	0	34	1420	309	27	1601	0	0	375	86	0	59
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Detector Phase	5	5	2	2	1	6		8	8	8	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	21.0		33.0	33.0	33.0	33.0	33.0
Total Split (s)	20.0	20.0	75.0	75.0	20.0	75.0		45.0	45.0	45.0	45.0	45.0
Total Split (%)	14.3%	14.3%	53.6%	53.6%	14.3%	53.6%		32.1%	32.1%	32.1%	32.1%	32.1%
Maximum Green (s)	14.0	14.0	69.0	69.0	14.0	69.0		39.0	39.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0	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	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	C-Min		None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0		7.0	7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0		8.0		20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0		0		0	0	0	0	0
v/c Ratio		0.27	0.71	0.34	0.22	0.80			0.93	0.16		0.10
Control Delay (s/veh)		63.7	22.8	10.2	60.1	24.8			77.8	7.7		9.6
Queue Delay		0.0	48.8	0.0	0.0	0.2			0.0	0.1		0.0
Total Delay (s/veh)		63.7	71.6	10.2	60.1	25.0			77.8	7.8		9.6
Queue Length 50th (ft)		27	474	123	24	431			334	0		1
Queue Length 95th (ft)		m45	592	m200	m41	575			355	22		9
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150							
Base Capacity (vph)		197	2014	916	197	2003			410	561		569
Starvation Cap Reductn		0	53	0	0	52			0	0		0
Spillback Cap Reductn		0	795	0	0	0			0	107		0
Storage Cap Reductn		0	0	0	0	0			0	0		0
Reduced v/c Ratio		0.17	1.16	0.34	0.14	0.82			0.91	0.19		0.10

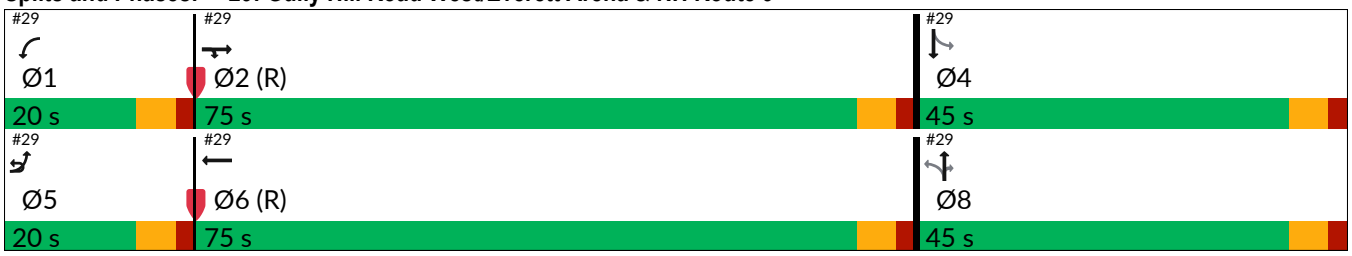
Intersection Summary
Cycle Length: 140

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	57
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Don't Walk (s)	
Pedestrian Calls (#/hr)	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 127 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



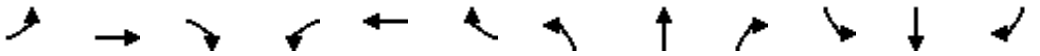
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Future Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95			1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	3455			1805	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00			0.72	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	3455			1365	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1420	309	27	1601	0	375	0	86	0	2
RTOR Reduction (vph)	0	0	0	49	0	0	0	0	0	61	0	40
Lane Group Flow (vph)	0	34	1420	260	27	1601	0	0	375	25	0	19
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	Prot	Prot	NA		Perm	NA	Perm		NA
Protected Phases	5	5	2	2	1	6			8			4
Permitted Phases								8		8	4	
Actuated Green, G (s)		5.7	77.2	77.2	5.3	76.8			39.5	39.5		39.5
Effective Green, g (s)		7.7	79.2	79.2	7.3	78.8			41.5	41.5		41.5
Actuated g/C Ratio		0.06	0.57	0.57	0.05	0.56			0.30	0.30		0.30
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)		95	1954	844	90	1944			404	494		522
v/s Ratio Prot		c0.02	0.41	0.17	0.02	c0.46						0.01
v/s Ratio Perm									c0.27	0.02		
v/c Ratio		0.36	0.73	0.31	0.30	0.82			0.93	0.05		0.04
Uniform Delay, d1		63.8	22.4	16.0	63.9	24.9			47.8	35.2		35.0
Progression Factor		0.98	0.95	0.91	0.93	0.88			1.00	1.00		1.00
Incremental Delay, d2		1.8	1.9	0.7	1.6	3.4			27.3	0.0		0.0
Delay (s)		64.5	23.2	15.3	60.8	25.4			75.1	35.2		35.1
Level of Service		E	C	B	E	C			E	D		D
Approach Delay (s/veh)			22.6			26.0			67.6			35.1
Approach LOS			C			C			E			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Future Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.998			0.851			0.850	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1818	3421	0	1728	3448	0	1770	1585	0	1847	1652	0
Flt Permitted				0.950			0.950			0.950		
Satd. Flow (perm)	1818	3421	0	1728	3448	0	1770	1585	0	1847	1652	0
Satd. Flow (RTOR)		6			1			184			408	
Adj. Flow (vph)	0	1406	96	201	1545	18	139	1	184	24	0	5
Lane Group Flow (vph)	0	1502	0	201	1563	0	139	185	0	24	5	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	12.0	58.0		17.0	63.0		21.0	20.0		16.0	15.0	
Total Split (%)	8.6%	41.4%		12.1%	45.0%		15.0%	14.3%		11.4%	10.7%	
Maximum Green (s)	6.0	52.0		11.0	57.0		15.0	14.0		10.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.82		0.53	0.58		0.56	0.58		0.19	0.01	
Control Delay (s/veh)		43.9		54.6	8.1		63.9	15.2		64.7	0.0	
Queue Delay		48.0		0.0	0.0		4.9	0.0		0.0	0.0	
Total Delay (s/veh)		91.9		54.6	8.1		68.8	15.2		64.7	0.0	
Queue Length 50th (ft)		766		168	244		120	1		21	0	
Queue Length 95th (ft)		#910		251	471		184	66		23	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)				200			90					
Base Capacity (vph)		1834		381	2706		264	353		158	505	
Starvation Cap Reductn		583		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	1		73	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.20		0.53	0.58		0.73	0.52		0.15	0.01	

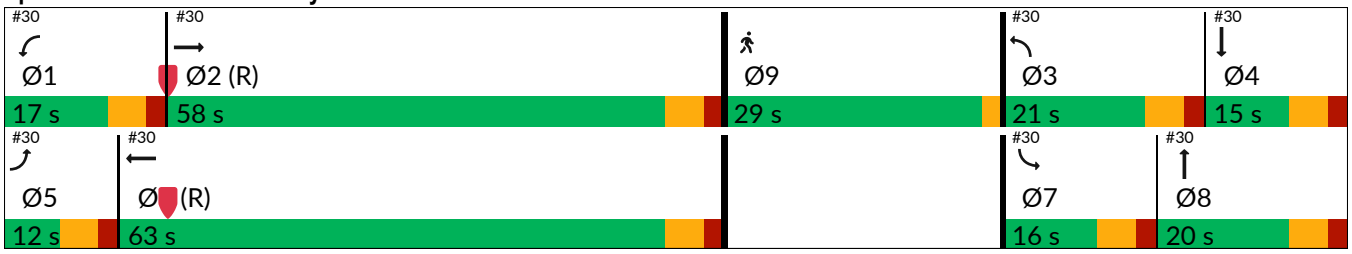
Intersection Summary
Cycle Length: 140

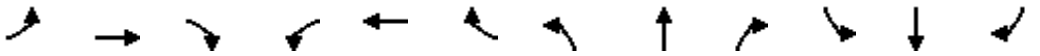
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	21%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 140
Offset: 57 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

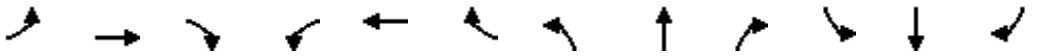




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Future Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3422		1728	3449		1770	1585		1847	1652	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3422		1728	3449		1770	1585		1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1406	96	201	1545	18	139	1	184	24	0	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	163	0	0	5	0
Lane Group Flow (vph)	0	1499	0	201	1563	0	139	22	0	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)		68.2		28.9	103.1		17.7	13.9		5.0	1.2	
Effective Green, g (s)		70.2		30.9	105.1		19.7	15.9		7.0	3.2	
Actuated g/C Ratio		0.50		0.22	0.75		0.14	0.11		0.05	0.02	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1715		381	2589		249	180		92	37	
v/s Ratio Prot		c0.44		0.12	c0.45		c0.08	c0.01		0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.87		0.53	0.60		0.56	0.12		0.26	0.00	
Uniform Delay, d1		31.0		48.1	8.0		56.1	55.8		64.0	66.8	
Progression Factor		1.48		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.9		1.3	1.1		2.7	0.3		1.5	0.0	
Delay (s)		50.8		49.4	9.0		58.8	56.1		65.5	66.9	
Level of Service		D		D	A		E	E		E	E	
Approach Delay (s/veh)		50.8			13.6			57.2			65.8	
Approach LOS		D			B			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

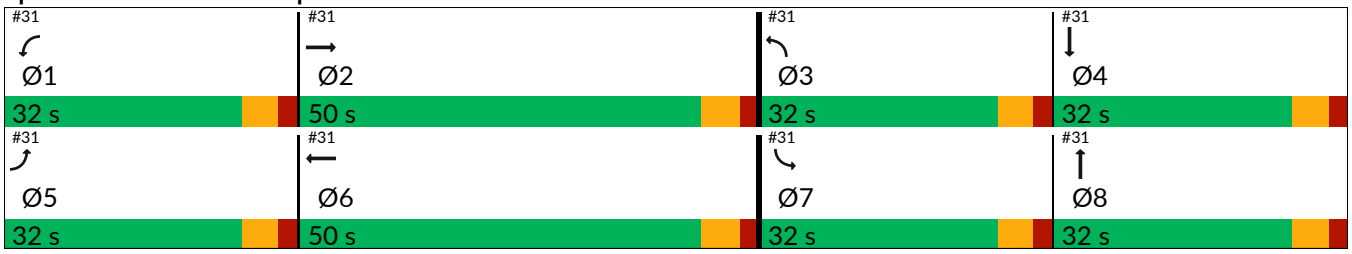


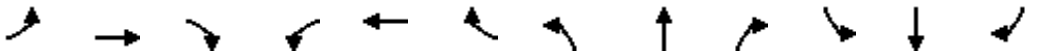
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Future Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			179			157			279			368
Adj. Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
Lane Group Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.45	1.14	0.17	0.75	0.71	0.04	0.86	0.26	0.17	0.46	0.76	0.24
Control Delay (s/veh)	68.0	114.8	0.2	70.6	37.0	0.0	78.9	42.3	0.2	68.3	70.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.0	114.8	0.2	70.6	37.0	0.0	78.9	42.3	0.2	68.3	70.7	0.4
Queue Length 50th (ft)	69	~780	0	207	437	0	264	92	0	70	213	0
Queue Length 95th (ft)	124	#965	0	309	568	0	#444	160	0	126	317	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	368	1169	1599	368	1508	1652	356	491	1599	356	374	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	1.14	0.17	0.64	0.71	0.04	0.82	0.26	0.17	0.22	0.64	0.24

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 136.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ 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: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Future Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	9.7	45.7	138.1	21.7	57.7	138.1	24.8	35.0	138.1	11.7	21.9	138.1
Effective Green, g (s)	11.7	47.7	138.1	23.7	59.7	138.1	26.8	37.0	138.1	13.7	23.9	138.1
Actuated g/C Ratio	0.08	0.35	1.00	0.17	0.43	1.00	0.19	0.27	1.00	0.10	0.17	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	151	1193	1599	306	1493	1652	335	487	1599	171	314	1546
v/s Ratio Prot	0.04	c0.39		c0.13	0.31		c0.17	0.07		0.05	c0.13	
v/s Ratio Perm			0.17			0.04			0.17			0.24
v/c Ratio	0.51	1.12	0.17	0.76	0.71	0.04	0.87	0.26	0.17	0.46	0.77	0.24
Uniform Delay, d1	60.5	45.2	0.0	54.5	32.2	0.0	54.0	39.8	0.0	58.7	54.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	64.2	0.2	10.8	1.6	0.0	21.2	0.3	0.2	2.0	10.7	0.4
Delay (s)	63.2	109.4	0.2	65.4	33.8	0.0	75.1	40.1	0.2	60.7	65.2	0.4
Level of Service	E	F	A	E	C	A	E	D	A	E	E	A
Approach Delay (s/veh)		89.9			37.4			38.8			30.0	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	138.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Future Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.996			0.960			0.971			0.951
Flt Protected		0.950			0.950			0.950			0.950	0.988
Satd. Flow (prot)	0	1787	3323	0	1668	3317	0	1668	1705	0	1585	1679
Flt Permitted		0.950			0.950			0.950			0.950	0.988
Satd. Flow (perm)	0	1787	3323	0	1668	3317	0	1668	1705	0	1585	1679
Satd. Flow (RTOR)			2			35			7			14
Adj. Flow (vph)	9	106	1280	39	37	1050	388	142	293	69	418	147
Lane Group Flow (vph)	0	115	1319	0	37	1438	0	142	362	0	339	335
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.50	0.99		0.25	1.35		0.42	1.03		1.05	0.95
Control Delay (s/veh)		51.5	57.4		49.8	193.0		42.4	97.6		106.6	78.7
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		51.5	57.4		49.8	193.0		42.4	97.6		106.6	78.7
Queue Length 50th (ft)		76	~561		25	~691		87	~267		~273	235
Queue Length 95th (ft)		134	#724		58	#861		154	#471		#477	#441
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		281	1327		262	1069		340	353		323	353
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		0.41	0.99		0.14	1.35		0.42	1.03		1.05	0.95

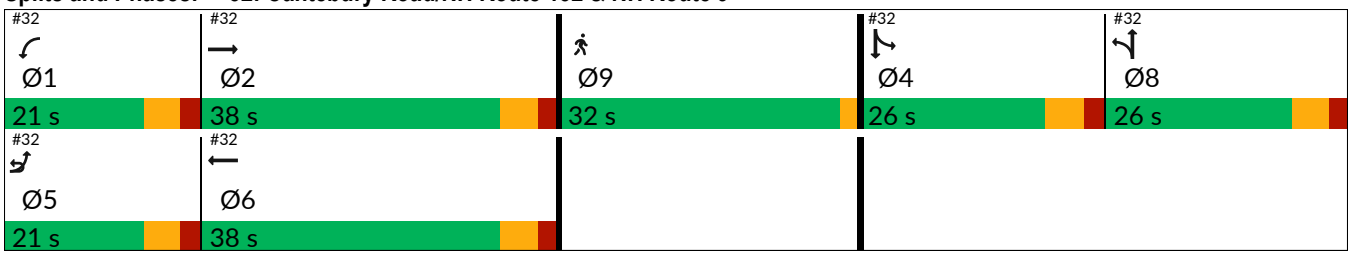
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	105	
Future Volume (vph)	105	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	109	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 108
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



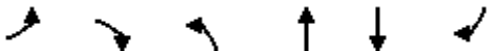
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Future Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	1.00		1.00	0.96		1.00	0.97		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (prot)		1787	3321		1668	3315		1668	1706		1585	1680
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.99
Satd. Flow (perm)		1787	3321		1668	3315		1668	1706		1585	1680
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	9	106	1280	39	37	1050	388	142	293	69	418	147
RTOR Reduction (vph)	0	0	1	0	0	23	0	0	6	0	0	11
Lane Group Flow (vph)	0	115	1318	0	37	1415	0	142	356	0	339	324
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		11.9	41.1		5.3	34.5		20.0	20.0		20.0	20.0
Effective Green, g (s)		13.9	43.1		7.3	36.5		22.0	22.0		22.0	22.0
Actuated g/C Ratio		0.13	0.39		0.07	0.33		0.20	0.20		0.20	0.20
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		224	1296		110	1095		332	339		315	334
v/s Ratio Prot		c0.06	c0.40		0.02	c0.43		0.09	c0.21		c0.21	0.19
v/s Ratio Perm												
v/c Ratio		0.51	1.02		0.34	1.29		0.43	1.05		1.08	0.97
Uniform Delay, d1		45.1	33.7		49.2	37.0		38.7	44.2		44.2	43.9
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.0	29.3		1.8	138.2		0.9	63.0		72.5	40.5
Delay (s)		47.1	62.9		51.1	175.2		39.6	107.2		116.7	84.4
Level of Service		D	E		D	F		D	F		F	F
Approach Delay (s/veh)			61.7			172.1			88.1			100.6
Approach LOS			E			F			F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	111.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	547	64	8	649	537	159			
Future Volume (vph)	547	64	8	649	537	159			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1787	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.993					
Satd. Flow (perm)	1787	1599	0	1806	1881	1546			
Satd. Flow (RTOR)		62				175			
Adj. Flow (vph)	608	71	9	721	590	175			
Lane Group Flow (vph)	608	71	0	730	590	175			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					45.0	25.0	45.0
Total Split (%)	33.3%	33.3%					43%	24%	43%
Maximum Green (s)	29.0	29.0					39.0	19.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	1.15	0.14		0.64	0.50	0.17			
Control Delay (s/veh)	124.1	9.4		15.5	16.0	4.9			
Queue Delay	0.0	0.0		0.0	1.4	0.0			
Total Delay (s/veh)	124.1	9.4		15.5	17.4	4.9			
Queue Length 50th (ft)	~487	4		283	228	10			
Queue Length 95th (ft)	#703	37		406	m292	m31			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	527	515		1133	1180	1035			
Starvation Cap Reductn	0	0		0	379	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	1.15	0.14		0.64	0.74	0.17			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 75

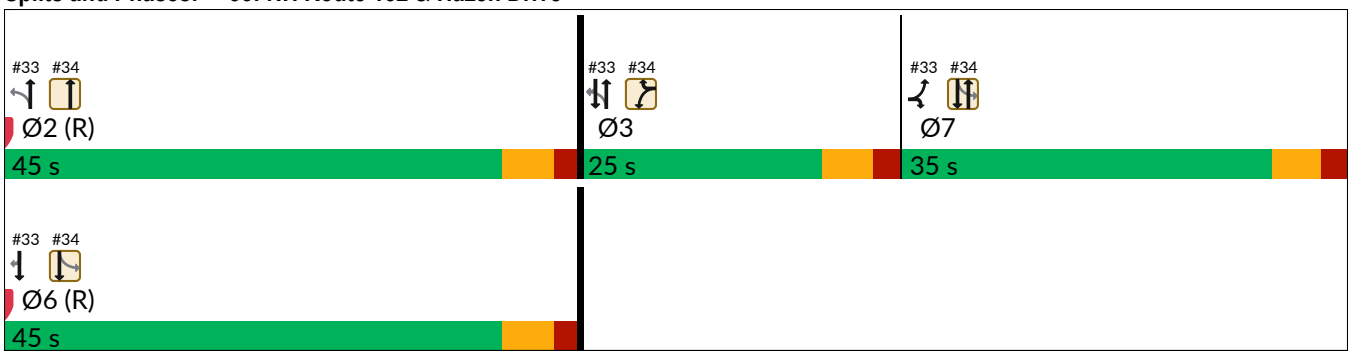
Control Type: Actuated-Coordinated

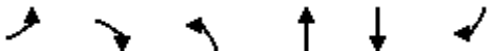
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	547	64	8	649	537	159
Future Volume (vph)	547	64	8	649	537	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1787	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1787	1599		1805	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.91	0.91
Adj. Flow (vph)	608	71	9	721	590	175
RTOR Reduction (vph)	0	44	0	0	0	65
Lane Group Flow (vph)	608	27	0	730	590	110
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	29.0	29.0		64.0	64.0	64.0
Effective Green, g (s)	31.0	31.0		66.0	66.0	66.0
Actuated g/C Ratio	0.30	0.30		0.63	0.63	0.63
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	527	472		1134	1182	971
v/s Ratio Prot	c0.34	0.02			0.31	
v/s Ratio Perm				c0.40		0.07
v/c Ratio	1.15	0.06		0.64	0.50	0.11
Uniform Delay, d1	37.0	26.5		12.2	10.6	7.8
Progression Factor	1.00	1.00		1.00	1.36	3.76
Incremental Delay, d2	89.1	0.1		1.3	0.3	0.0
Delay (s)	126.1	26.6		13.4	14.6	29.4
Level of Service	F	C		B	B	C
Approach Delay (s/veh)	115.7			13.4	18.0	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	302	171	964	243	49	411			
Future Volume (vph)	302	171	964	243	49	411			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.970						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3351	0	1728	1818			
Flt Permitted	0.950				0.163				
Satd. Flow (perm)	1787	1599	3351	0	296	1818			
Satd. Flow (RTOR)		155	77						
Adj. Flow (vph)	336	190	1071	270	53	442			
Lane Group Flow (vph)	336	190	1341	0	53	442			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	25.0	25.0					45.0	45.0	35.0
Total Split (%)	23.8%	23.8%					43%	43%	33%
Maximum Green (s)	19.0	19.0					39.0	39.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.91	0.42	0.55		0.25	0.34			
Control Delay (s/veh)	71.3	12.4	3.4		8.3	6.3			
Queue Delay	0.0	0.0	1.3		0.0	0.0			
Total Delay (s/veh)	71.3	12.4	4.6		8.3	6.3			
Queue Length 50th (ft)	226	20	69		10	94			
Queue Length 95th (ft)	#401	83	m101		29	138			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	369	453	2446		214	1315			
Starvation Cap Reductn	0	0	820		0	0			
Spillback Cap Reductn	0	0	0		0	32			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.91	0.42	0.82		0.25	0.34			

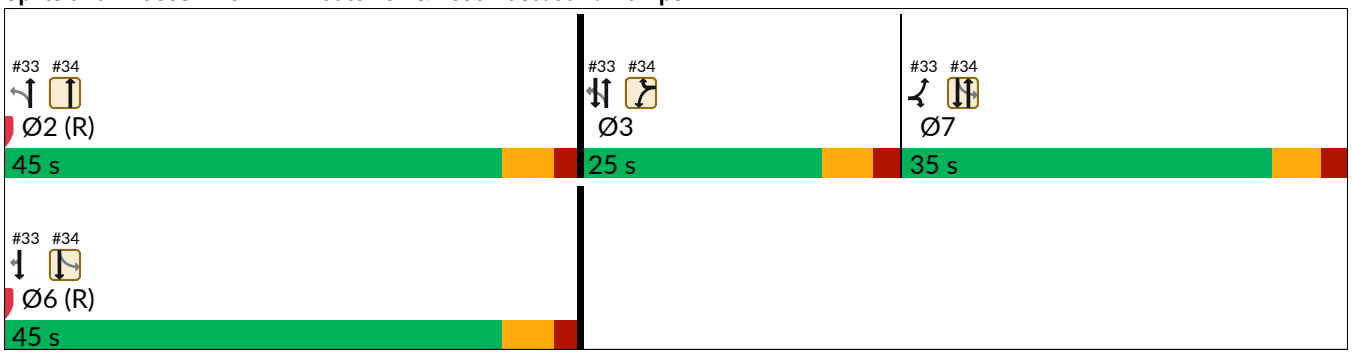
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 75

Control Type: Actuated-Coordinated

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.

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	302	171	964	243	49	411
Future Volume (vph)	302	171	964	243	49	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3351		1728	1818
Flt Permitted	0.95	1.00	1.00		0.16	1.00
Satd. Flow (perm)	1787	1599	3351		296	1818
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.93	0.93
Adj. Flow (vph)	336	190	1071	270	53	442
RTOR Reduction (vph)	0	123	22	0	0	0
Lane Group Flow (vph)	336	67	1319	0	53	442
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	19.7	19.7	73.3		73.3	73.3
Effective Green, g (s)	21.7	21.7	75.3		75.3	75.3
Actuated g/C Ratio	0.21	0.21	0.72		0.72	0.72
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	369	330	2403		212	1303
v/s Ratio Prot	c0.19	0.04	c0.39			0.24
v/s Ratio Perm					0.18	
v/c Ratio	0.91	0.20	0.55		0.25	0.34
Uniform Delay, d1	40.7	34.5	6.9		5.1	5.6
Progression Factor	1.00	1.00	0.45		1.00	1.00
Incremental Delay, d2	25.9	0.3	0.1		0.6	0.2
Delay (s)	66.6	34.8	3.2		5.7	5.7
Level of Service	E	C	A		A	A
Approach Delay (s/veh)	55.1		3.2			5.7
Approach LOS	E		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

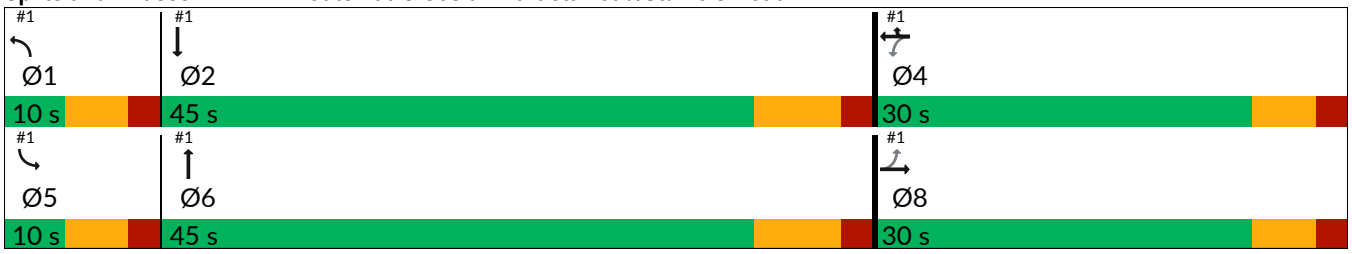
c Critical Lane Group

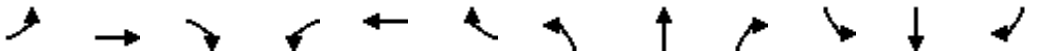
2037 Build Saturday Midday Peak-Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Future Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.983				0.850		0.989			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1868	0	0	1805	1615	1787	3535	0	1787	3571	0
Flt Permitted					0.747		0.950			0.950		
Satd. Flow (perm)	0	1868	0	0	1419	1615	1787	3535	0	1787	3571	0
Satd. Flow (RTOR)		2				135		13			1	
Adj. Flow (vph)	0	14	2	86	0	50	7	1001	78	36	1127	8
Lane Group Flow (vph)	0	16	0	0	86	50	7	1079	0	36	1135	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	10.0	45.0		10.0	45.0	
Total Split (%)	35.3%	35.3%		35.3%	35.3%	35.3%	11.8%	52.9%		11.8%	52.9%	
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	4.0	37.5		4.0	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.29	0.11	0.05	0.47		0.26	0.47	
Control Delay (s/veh)		20.6			24.7	0.5	31.5	9.1		34.8	7.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		20.6			24.7	0.5	31.5	9.1		34.8	7.8	
Queue Length 50th (ft)		3			20	0	2	82		10	90	
Queue Length 95th (ft)		9			60	0	15	221		45	238	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		948			719	885	139	2621		139	2684	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.02			0.12	0.06	0.05	0.41		0.26	0.42	

Intersection Summary
Cycle Length: 85
Actuated Cycle Length: 55.1
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

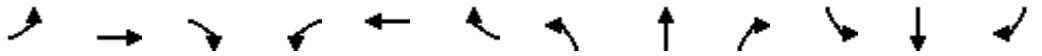
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Future Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1868			1805	1615	1787	3536		1787	3570	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1868			1419	1615	1787	3536		1787	3570	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	0	14	2	86	0	50	7	1001	78	36	1127	8
RTOR Reduction (vph)	0	2	0	0	0	42	0	6	0	0	0	0
Lane Group Flow (vph)	0	14	0	0	86	8	7	1073	0	36	1135	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.6			7.6	7.6	0.6	32.7		1.3	33.4	
Effective Green, g (s)		9.6			9.6	9.6	0.6	34.7		1.3	35.4	
Actuated g/C Ratio		0.16			0.16	0.16	0.01	0.57		0.02	0.58	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		293			222	253	17	2008		38	2068	
v/s Ratio Prot		0.01				0.00	0.00	0.30		c0.02	c0.32	
v/s Ratio Perm					c0.06							
v/c Ratio		0.05			0.39	0.03	0.41	0.53		0.95	0.55	
Uniform Delay, d1		21.9			23.1	21.8	30.1	8.2		29.9	7.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.1	0.1	15.4	0.3		123.8	0.3	
Delay (s)		21.9			24.2	21.9	45.5	8.5		153.7	8.2	
Level of Service		C			C	C	D	A		F	A	
Approach Delay (s/veh)		21.9			23.4			8.7			12.7	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	15.5
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

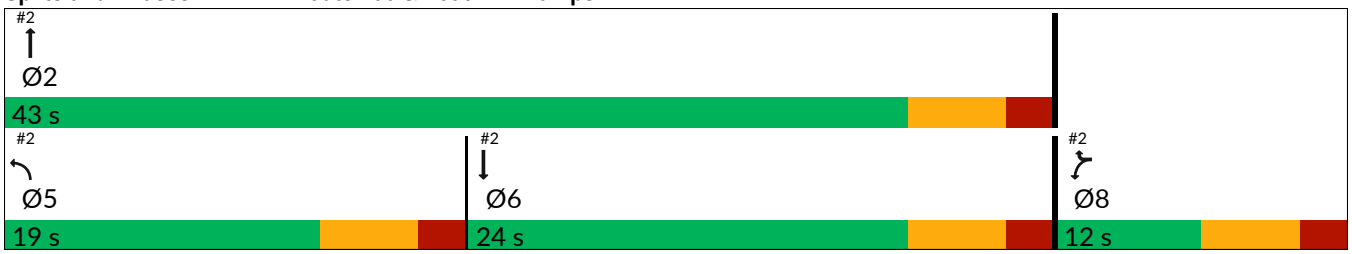


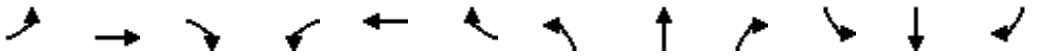
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	16	0	18	974	916	0	0	656	368
Future Volume (vph)	0	0	0	16	0	18	974	916	0	0	656	368
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1793	0	1553	3351	3455	0	0	3455	1546
Satd. Flow (RTOR)						179						409
Adj. Flow (vph)	0	0	0	18	0	20	1036	974	0	0	729	409
Lane Group Flow (vph)	0	0	0	18	0	20	1036	974	0	0	729	409
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Detector Phase				8		8	5	2			6	
Switch Phase												
Minimum Initial (s)				5.0		5.0	5.0	5.0			5.0	
Minimum Split (s)				11.0		11.0	11.0	11.0			11.0	
Total Split (s)				12.0		12.0	19.0	43.0			24.0	
Total Split (%)				21.8%		21.8%	34.5%	78.2%			43.6%	
Maximum Green (s)				6.0		6.0	13.0	37.0			18.0	
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)				-2.0		-2.0	-2.0	-2.0			-2.0	
Total Lost Time (s)				4.0		4.0	4.0	4.0			4.0	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Recall Mode				None		None	None	Min			Min	
v/c Ratio				0.06		0.05	0.88	0.32			0.56	0.26
Control Delay (s/veh)				19.8		0.2	29.8	2.1			13.8	0.4
Queue Delay				0.0		0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)				19.8		0.2	29.8	2.1			13.8	0.4
Queue Length 50th (ft)				3		0	102	0			57	0
Queue Length 95th (ft)				20		0	#317	72			146	0
Internal Link Dist (ft)		715			600			473			449	
Turn Bay Length (ft)				175								350
Base Capacity (vph)				335		436	1177	3039			1618	1546
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				0.05		0.05	0.88	0.32			0.45	0.26

Intersection Summary
Cycle Length: 55
Actuated Cycle Length: 44.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 2: NH Route 106 & I-393 WB Ramps

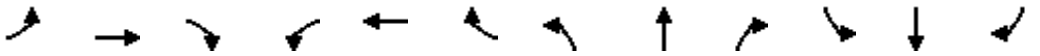




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	16	0	18	974	916	0	0	656	368
Future Volume (vph)	0	0	0	16	0	18	974	916	0	0	656	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	12	12	11	11	11	11	11	11
Total Lost time (s)				4.0		4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				1.00		1.00	0.97	0.95			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1793		1553	3351	3455			3455	1546
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1793		1553	3351	3455			3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	18	0	20	1036	974	0	0	729	409
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	18	0	2	1036	974	0	0	729	409
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type				Prot		Prot	Prot	NA			NA	Free
Protected Phases				8		8	5	2			6	
Permitted Phases												Free
Actuated Green, G (s)				1.9		1.9	13.5	34.3			14.8	48.2
Effective Green, g (s)				3.9		3.9	15.5	36.3			16.8	48.2
Actuated g/C Ratio				0.08		0.08	0.32	0.75			0.35	1.00
Clearance Time (s)				6.0		6.0	6.0	6.0			6.0	
Vehicle Extension (s)				3.0		3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				145		125	1077	2602			1204	1546
v/s Ratio Prot				0.01		0.00	c0.31	0.28			c0.21	
v/s Ratio Perm												c0.26
v/c Ratio				0.12		0.01	0.96	0.37			0.61	0.26
Uniform Delay, d1				20.6		20.4	16.1	2.0			13.0	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.4		0.0	18.8	0.1			0.9	0.4
Delay (s)				21.0		20.4	34.9	2.1			13.8	0.4
Level of Service				C		C	C	A			B	A
Approach Delay (s/veh)		0.0			20.7			19.0			9.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

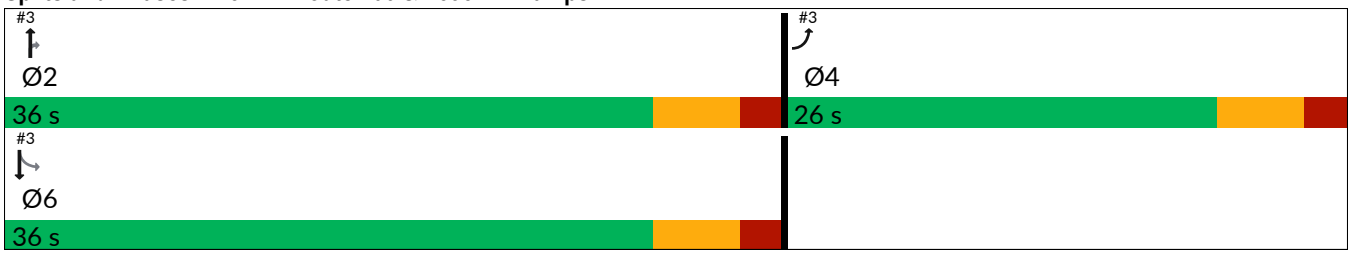


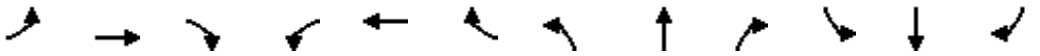
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	0	1124	0	0	0	0	1540	15	10	661	0
Future Volume (vph)	350	0	1124	0	0	0	0	1540	15	10	661	0
Lane Util. Factor	0.97	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950										0.999	
Satd. Flow (prot)	3467	0	2814	0	0	0	0	3455	1546	0	3486	0
Flt Permitted	0.950										0.920	
Satd. Flow (perm)	3467	0	2814	0	0	0	0	3455	1546	0	3210	0
Satd. Flow (RTOR)			946						53			
Adj. Flow (vph)	354	0	1135	0	0	0	0	1674	16	11	734	0
Lane Group Flow (vph)	354	0	1135	0	0	0	0	1674	16	0	745	0
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Detector Phase	4							2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0							5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0							11.0	11.0	11.0	11.0	
Total Split (s)	26.0							36.0	36.0	36.0	36.0	
Total Split (%)	41.9%							58.1%	58.1%	58.1%	58.1%	
Maximum Green (s)	20.0							30.0	30.0	30.0	30.0	
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)	-2.0							-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0							4.0	4.0		4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0							3.0	3.0	3.0	3.0	
Recall Mode	None							Min	Min	Min	Min	
v/c Ratio	0.43		0.40					0.79	0.02		0.38	
Control Delay (s/veh)	18.8		0.4					12.2	0.2		6.2	
Queue Delay	0.0		0.0					0.0	0.0		0.0	
Total Delay (s/veh)	18.8		0.4					12.2	0.2		6.2	
Queue Length 50th (ft)	48		0					174	0		51	
Queue Length 95th (ft)	78		0					#308	1		93	
Internal Link Dist (ft)		892			451			411			473	
Turn Bay Length (ft)	405		390									
Base Capacity (vph)	1435		2814					2118	968		1968	
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	0.25		0.40					0.79	0.02		0.38	

Intersection Summary
Cycle Length: 62
Actuated Cycle Length: 53.2
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 3: NH Route 106 & I-393 EB Ramps

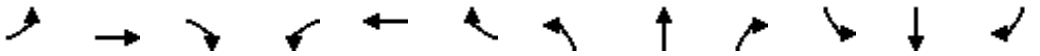




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	0	1124	0	0	0	0	1540	15	10	661	0
Future Volume (vph)	350	0	1124	0	0	0	0	1540	15	10	661	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	
Lane Util. Factor	0.97		0.88					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	3467		2814					3455	1546		3487	
Flt Permitted	0.95		1.00					1.00	1.00		0.92	
Satd. Flow (perm)	3467		2814					3455	1546		3211	
Peak-hour factor, PHF	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	354	0	1135	0	0	0	0	1674	16	11	734	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	354	0	1135	0	0	0	0	1674	10	0	745	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Prot		Free					NA	Perm	Perm	NA	
Protected Phases	4							2			6	
Permitted Phases			Free						2	6		
Actuated Green, G (s)	10.6		53.2					30.6	30.6		30.6	
Effective Green, g (s)	12.6		53.2					32.6	32.6		32.6	
Actuated g/C Ratio	0.24		1.00					0.61	0.61		0.61	
Clearance Time (s)	6.0							6.0	6.0		6.0	
Vehicle Extension (s)	3.0							3.0	3.0		3.0	
Lane Grp Cap (vph)	821		2814					2117	947		1967	
v/s Ratio Prot	0.10							c0.48				
v/s Ratio Perm			c0.40						0.01		0.23	
v/c Ratio	0.43		0.40					0.79	0.01		0.38	
Uniform Delay, d1	17.3		0.0					7.7	4.0		5.2	
Progression Factor	1.00		1.00					1.00	1.00		1.00	
Incremental Delay, d2	0.4		0.4					2.1	0.0		0.1	
Delay (s)	17.6		0.4					9.8	4.0		5.3	
Level of Service	B		A					A	A		A	
Approach Delay (s/veh)		4.5			0.0			9.8			5.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



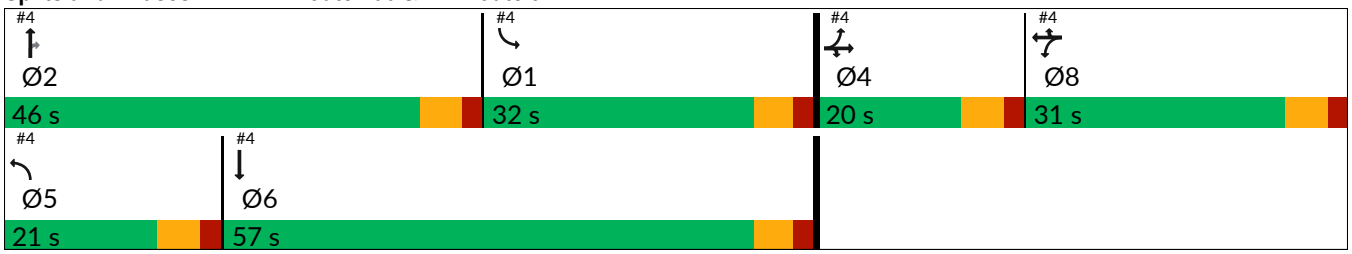
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Future Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.987		0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	1572	3267	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950	0.987		0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	1572	3267	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			178			178			444			599
Adj. Flow (vph)	840	396	76	447	431	37	79	762	444	59	927	952
Lane Group Flow (vph)	840	396	76	286	592	37	79	762	444	59	927	952
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	20.0	20.0	31.0	31.0	31.0	21.0	46.0	46.0	32.0	57.0	
Total Split (%)	15.5%	15.5%	15.5%	24.0%	24.0%	24.0%	16.3%	35.7%	35.7%	24.8%	44.2%	
Maximum Green (s)	14.0	14.0	14.0	25.0	25.0	25.0	15.0	40.0	40.0	26.0	51.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	1.61	1.40	0.19	0.76	0.75	0.07	0.39	0.67	0.55	0.23	0.74	0.53
Control Delay (s/veh)	313.0	235.0	1.1	54.9	47.0	0.3	54.4	35.4	5.6	44.9	34.0	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (s/veh)	313.0	235.0	1.1	54.9	47.0	0.3	54.4	35.4	5.6	44.9	34.2	1.1
Queue Length 50th (ft)	~462	~397	0	209	217	0	54	247	0	38	305	0
Queue Length 95th (ft)	#697	#697	0	#431	#365	0	113	363	77	80	401	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	523	283	391	414	860	538	286	1416	895	471	1787	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	196	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.61	1.40	0.19	0.69	0.69	0.07	0.28	0.54	0.50	0.13	0.58	0.53

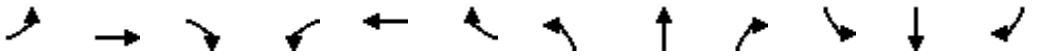
Intersection Summary

Cycle Length: 129
Actuated Cycle Length: 106.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Future Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	1572	3265	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	1572	3265	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	840	396	76	447	431	37	79	762	444	59	927	952
RTOR Reduction (vph)	0	0	64	0	0	28	0	0	299	0	0	0
Lane Group Flow (vph)	840	396	12	286	592	9	79	762	145	59	927	952
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	14.6	14.6	14.6	23.6	23.6	23.6	8.5	33.2	33.2	12.1	36.8	107.5
Effective Green, g (s)	16.6	16.6	16.6	25.6	25.6	25.6	10.5	35.2	35.2	14.1	38.8	107.5
Actuated g/C Ratio	0.15	0.15	0.15	0.24	0.24	0.24	0.10	0.33	0.33	0.13	0.36	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	517	280	238	374	777	368	168	1131	506	226	1247	1812
v/s Ratio Prot	c0.25	0.22	0.01	c0.18	0.18	0.01	0.05	c0.22		0.03	c0.27	
v/s Ratio Perm									0.09			0.53
v/c Ratio	1.62	1.41	0.05	0.76	0.76	0.02	0.47	0.67	0.29	0.26	0.74	0.53
Uniform Delay, d1	45.4	45.4	38.7	38.1	38.1	31.4	45.9	31.2	26.8	42.0	30.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	289.9	206.3	0.1	9.0	4.4	0.0	2.1	1.6	0.3	0.6	2.4	1.1
Delay (s)	335.4	251.7	38.8	47.1	42.6	31.4	47.9	32.8	27.2	42.6	32.4	1.1
Level of Service	F	F	D	D	D	C	D	C	C	D	C	A
Approach Delay (s/veh)		292.9			43.5			31.8			17.4	
Approach LOS		F			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	91.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	107.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1997.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	187	0	301	7	998	27	279	1213	9
Future Vol, veh/h	5	0	10	187	0	301	7	998	27	279	1213	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	0	-	125	400	-	400	600	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	79	79	79	94	94	94	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	10	0	20	237	0	381	7	1062	29	303	1318	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3006	3035	1323	3002	-	1062	1328	0	0	1090	0	0
Stage 1	1930	1930	-	1077	-	-	-	-	-	-	-	-
Stage 2	1077	1105	-	1925	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	-	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	-	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 8	13	193	~ 9	0	~ 274	523	-	-	644	-	-
Stage 1	87	115	-	268	0	-	-	-	-	-	-	-
Stage 2	268	289	-	~ 87	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	7	193	~ 4	-	~ 274	523	-	-	644	-	-
Mov Cap-2 Maneuver	-	7	-	~ 4	-	-	-	-	-	-	-	-
Stage 1	46	61	-	264	-	-	-	-	-	-	-	-
Stage 2	-	285	-	~ 41	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		$ 10910.74	0.08	2.88
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	523	-	-	-	-	4	274	644	-	-
HCM Lane V/C Ratio	0.014	-	-	-	-	59.447	1.39	0.471	-	-
HCM Ctrl Dly (s/v)	12	-	-	-	-	$ 28099.7	231.9	15.5	-	-
HCM Lane LOS	B	-	-	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	31.9	20.4	2.5	-	-

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

Intersection	
Int Delay, s/veh	154.6

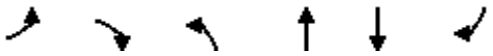
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	223	215	1184	1240	197
Future Vol, veh/h	82	223	215	1184	1240	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	400	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	85	232	224	1233	1305	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2987	1305	1513	0	-	0
Stage 1	1305	-	-	-	-	-
Stage 2	1681	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	~ 16	~ 198	445	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 8	~ 198	445	-	-	-
Mov Cap-2 Maneuver	~ 8	-	-	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	168	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	$ 1584.82	3.23	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	445	-	8	198	-	-
HCM Lane V/C Ratio	0.503	-	11.01	1.176	-	-
HCM Ctrl Dly (s/v)	21	-	$ 5436.2	168.6	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	2.8	-	12.3	11.8	-	-

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

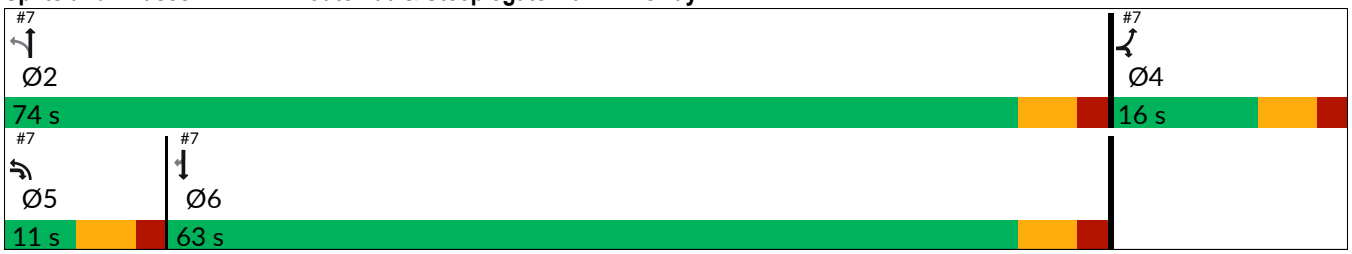


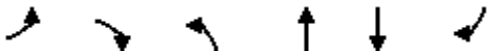
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	195	152	150	1201	1266	197
Future Volume (vph)	195	152	150	1201	1266	197
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1583	1728	1881	1881	1546
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1888	1583	115	1881	1881	1546
Satd. Flow (RTOR)		77				203
Adj. Flow (vph)	217	169	163	1305	1305	203
Lane Group Flow (vph)	217	169	163	1305	1305	203
Turn Type	Prot	pt+ov	pm+pt	NA	NA	Perm
Protected Phases	4	4 5	5	2	6	
Permitted Phases			2			6
Detector Phase	4	4 5	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	10.0
Minimum Split (s)	11.0		11.0	16.0	16.0	16.0
Total Split (s)	16.0		11.0	74.0	63.0	63.0
Total Split (%)	17.8%		12.2%	82.2%	70.0%	70.0%
Maximum Green (s)	10.0		5.0	68.0	57.0	57.0
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)	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Min	Min	Min
v/c Ratio	0.86	0.37	0.76	0.89	1.06	0.19
Control Delay (s/veh)	70.7	17.7	40.1	17.4	60.5	1.3
Queue Delay	0.0	0.0	0.0	5.7	0.0	0.0
Total Delay (s/veh)	70.7	17.7	40.1	23.1	60.5	1.3
Queue Length 50th (ft)	125	42	41	420	~829	0
Queue Length 95th (ft)	#252	99	#142	#942	#1080	21
Internal Link Dist (ft)	425			617	959	
Turn Bay Length (ft)		140	250			275
Base Capacity (vph)	251	461	214	1463	1233	1083
Starvation Cap Reductn	0	0	0	122	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.37	0.76	0.97	1.06	0.19

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 7: NH Route 106 & Steeplegate Mall Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	195	152	150	1201	1266	197
Future Volume (vph)	195	152	150	1201	1266	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	12	11	12	12	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1888	1583	1728	1881	1881	1546
Flt Permitted	0.95	1.00	0.06	1.00	1.00	1.00
Satd. Flow (perm)	1888	1583	115	1881	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.97	0.97
Adj. Flow (vph)	217	169	163	1305	1305	203
RTOR Reduction (vph)	0	57	0	0	0	70
Lane Group Flow (vph)	217	112	163	1305	1305	133
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Turn Type	Prot	pt+ov	pm+pt	NA	NA	Perm
Protected Phases	4	4 5	5	2	6	
Permitted Phases			2			6
Actuated Green, G (s)	10.0	21.0	68.0	68.0	57.0	57.0
Effective Green, g (s)	12.0	23.0	70.0	70.0	59.0	59.0
Actuated g/C Ratio	0.13	0.26	0.78	0.78	0.66	0.66
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	251	404	214	1463	1233	1013
v/s Ratio Prot	c0.11	0.07	0.06	c0.69	c0.69	
v/s Ratio Perm			0.53			0.09
v/c Ratio	0.86	0.28	0.76	0.89	1.06	0.13
Uniform Delay, d1	38.2	26.8	28.2	7.3	15.5	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.1	0.4	14.7	7.3	42.6	0.1
Delay (s)	63.3	27.2	43.0	14.5	58.1	5.9
Level of Service	E	C	D	B	E	A
Approach Delay (s/veh)	47.5			17.7	51.1	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

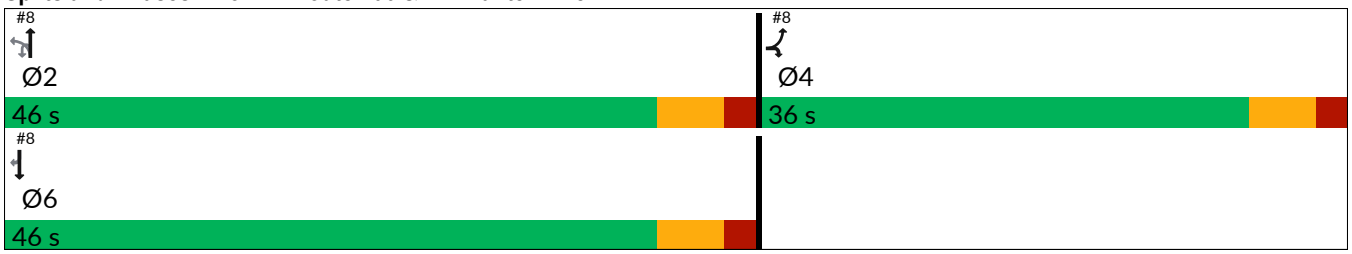
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	513	219	2	248	842	818	601
Future Volume (vph)	513	219	2	248	842	818	601
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1745	1561	0	1745	1900	1837	1615
Flt Permitted	0.950			0.105			
Satd. Flow (perm)	1745	1561	0	193	1900	1837	1615
Satd. Flow (RTOR)		120					626
Adj. Flow (vph)	547	243	2	276	936	852	626
Lane Group Flow (vph)	547	243	0	278	936	852	626
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Detector Phase	4	4	2	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	36.0	36.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	Min	Min	Min
v/c Ratio	0.85	0.37		2.73	0.93	0.87	0.54
Control Delay (s/veh)	37.6	10.8		822.2	35.5	29.5	3.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.6	10.8		822.2	35.5	29.5	3.0
Queue Length 50th (ft)	244	41		~202	436	375	0
Queue Length 95th (ft)	#414	95		#353	#711	#632	49
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			300
Base Capacity (vph)	705	703		102	1009	975	1151
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	0.78	0.35		2.73	0.93	0.87	0.54

Intersection Summary
Cycle Length: 82
Actuated Cycle Length: 79.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated

~ 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: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	513	219	2	248	842	818	601
Future Volume (vph)	513	219	2	248	842	818	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1745	1561		1745	1900	1837	1615
Flt Permitted	0.95	1.00		0.10	1.00	1.00	1.00
Satd. Flow (perm)	1745	1561		193	1900	1837	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.96	0.96
Growth Factor (vph)	96%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	547	243	2	276	936	852	626
RTOR Reduction (vph)	0	76	0	0	0	0	293
Lane Group Flow (vph)	547	167	0	278	936	852	333
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4	4			2	6	
Permitted Phases			2	2			6
Actuated Green, G (s)	27.1	27.1		40.1	40.1	40.1	40.1
Effective Green, g (s)	29.1	29.1		42.1	42.1	42.1	42.1
Actuated g/C Ratio	0.37	0.37		0.53	0.53	0.53	0.53
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	641	573		102	1009	976	858
v/s Ratio Prot	c0.31	0.11			0.49	0.46	
v/s Ratio Perm				c1.44			0.21
v/c Ratio	0.85	0.29		2.73	0.93	0.87	0.39
Uniform Delay, d1	23.1	17.7		18.6	17.1	16.2	10.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	0.3		803.4	14.0	8.7	0.3
Delay (s)	33.8	18.0		822.0	31.1	24.9	11.2
Level of Service	C	B		F	C	C	B
Approach Delay (s/veh)	28.9				212.2	19.1	
Approach LOS	C				F	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.95		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	43.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	170	218	1069	932	18
Future Vol, veh/h	23	170	218	1069	932	18
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	-	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	98	98	92	92
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	26	189	222	1091	1013	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2549	1013	1033	0	-	0
Stage 1	1013	-	-	-	-	-
Stage 2	1536	-	-	-	-	-
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	30	293	681	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 20	293	681	-	-	-
Mov Cap-2 Maneuver	~ 20	-	-	-	-	-
Stage 1	238	-	-	-	-	-
Stage 2	198	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	$ 506.64	2.17	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	681	-	112	-	-
HCM Lane V/C Ratio	0.327	-	1.913	-	-
HCM Ctrl Dly (s/v)	12.8	-	$ 506.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.4	-	17.4	-	-

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

Intersection	
Int Delay, s/veh	106.9

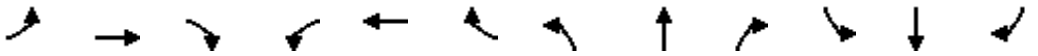
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	581	90	140	562	148	111	0	147	0	0	113
Future Vol, veh/h	58	581	90	140	562	148	111	0	147	0	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	0	-	50	0	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	90	90	76	76	76	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	2	2	2
Mvmt Flow	61	612	95	156	624	164	146	0	193	0	0	126

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	789	0	0	706	0	0	1717	-	353	-	-	624
Stage 1	-	-	-	-	-	-	781	-	-	-	-	-
Stage 2	-	-	-	-	-	-	936	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	-	6.9	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	-	3.3	-	-	3.319
Pot Cap-1 Maneuver	840	-	-	901	-	-	~ 65	0	649	0	0	484
Stage 1	-	-	-	-	-	-	358	0	-	0	0	-
Stage 2	-	-	-	-	-	-	321	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	840	-	-	901	-	-	~ 37	-	649	-	-	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 37	-	-	-	-	-
Stage 1	-	-	-	-	-	-	332	-	-	-	-	-
Stage 2	-	-	-	-	-	-	197	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.77	1.62	$ 673.41	15.02
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	37	649	840	-	-	901	-	-	484
HCM Lane V/C Ratio	3.947	0.298	0.073	-	-	0.173	-	-	0.259
HCM Ctrl Dly (s/v)	$ 1548.2	12.9	9.6	-	-	9.8	-	-	15
HCM Lane LOS	F	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	16.9	1.2	0.2	-	-	0.6	-	-	1

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

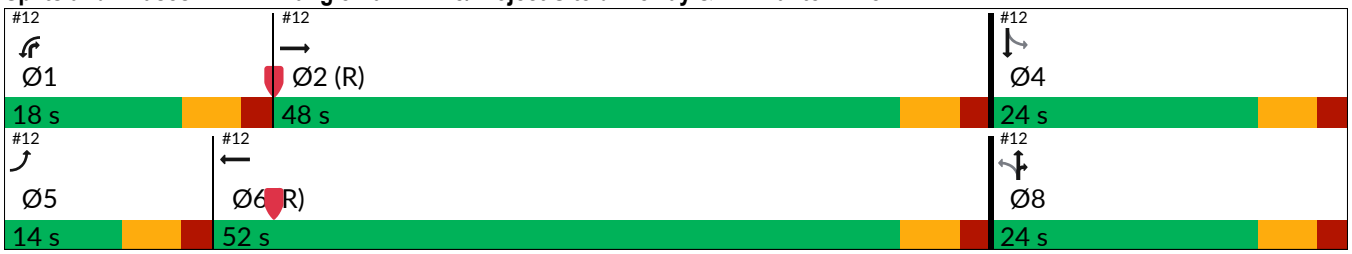


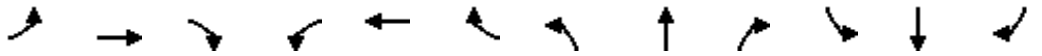
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Future Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.965				0.850		0.870	
Flt Protected	0.950			0.950				0.960		0.950		
Satd. Flow (prot)	1805	3333	0	1728	1815	0	0	1824	1615	1770	1621	0
Flt Permitted	0.950			0.950				0.497		0.581		
Satd. Flow (perm)	1805	3333	0	1728	1815	0	0	944	1615	1082	1621	0
Satd. Flow (RTOR)		105			26				62		186	
Adj. Flow (vph)	189	459	198	102	579	174	137	28	62	282	29	186
Lane Group Flow (vph)	189	657	0	102	753	0	0	165	62	282	215	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	14.0	48.0		18.0	52.0		24.0	24.0		24.0	24.0	
Total Split (%)	15.6%	53.3%		20.0%	57.8%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	8.0	42.0		12.0	46.0		18.0	18.0		18.0	18.0	
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)	-2.0	-2.0		-2.0	-2.0			-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.95	0.39		0.44	0.84			0.65	0.08	0.97	0.38	
Control Delay (s/veh)	91.3	9.9		41.7	28.4			45.9	4.7	83.8	8.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay (s/veh)	91.3	9.9		41.7	28.4			45.9	4.7	83.8	8.9	
Queue Length 50th (ft)	118	46		54	330			86	0	~181	13	
Queue Length 95th (ft)	#242	81		102	469			#196	23	#353	72	
Internal Link Dist (ft)		981			380			958			623	
Turn Bay Length (ft)	50			250					170			
Base Capacity (vph)	200	1720		268	980			253	789	290	571	
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	0.95	0.38		0.38	0.77			0.65	0.08	0.97	0.38	

Intersection Summary
Cycle Length: 90

Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
~ 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: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive

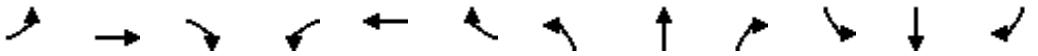




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Future Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.97			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3332		1728	1816			1824	1615	1770	1621	
Flt Permitted	0.95	1.00		0.95	1.00			0.50	1.00	0.58	1.00	
Satd. Flow (perm)	1805	3332		1728	1816			945	1615	1083	1621	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	189	459	198	102	579	174	137	28	62	282	29	186
RTOR Reduction (vph)	0	55	0	0	13	0	0	0	35	0	136	0
Lane Group Flow (vph)	189	602	0	102	740	0	0	165	27	282	79	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	pt+ov	Perm	NA	
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases							8			4		
Actuated Green, G (s)	8.0	41.1		8.7	41.8			22.2	36.9	22.2	22.2	
Effective Green, g (s)	10.0	43.1		10.7	43.8			24.2	38.9	24.2	24.2	
Actuated g/C Ratio	0.11	0.48		0.12	0.49			0.27	0.43	0.27	0.27	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	200	1595		205	883			254	698	291	435	
v/s Ratio Prot	c0.10	0.18		0.06	c0.41				0.02		0.05	
v/s Ratio Perm								0.17		c0.26		
v/c Ratio	0.95	0.38		0.50	0.84			0.65	0.04	0.97	0.18	
Uniform Delay, d1	39.7	14.9		37.1	20.0			29.1	14.8	32.5	25.3	
Progression Factor	1.01	0.76		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	45.7	0.6		1.9	9.3			5.6	0.0	43.8	0.2	
Delay (s)	86.0	12.0		39.0	29.3			34.8	14.8	76.3	25.5	
Level of Service	F	B		D	C			C	B	E	C	
Approach Delay (s/veh)		28.5			30.5			29.3			54.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



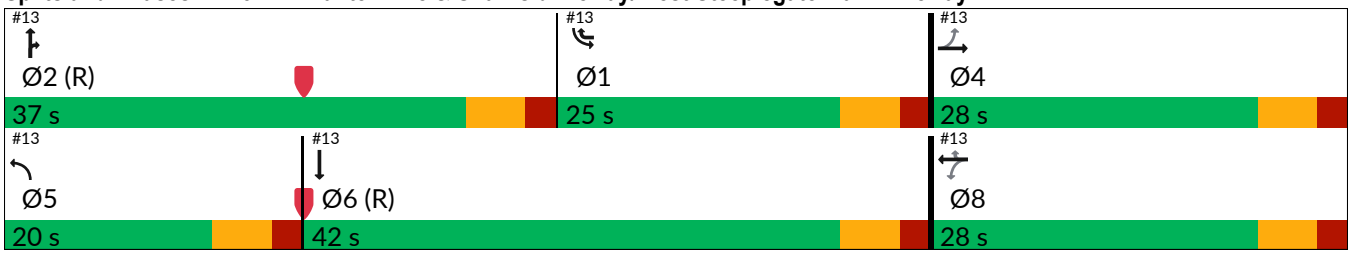
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Future Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.947				0.850			0.850		0.989	
Flt Protected		0.969			0.950		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1829	1636	1805	3490	1561	3385	3451	0
Flt Permitted		0.655			0.636		0.950			0.950		
Satd. Flow (perm)	0	2239	0	0	1224	1636	1805	3490	1561	3385	3451	0
Satd. Flow (RTOR)		182				109			112		11	
Adj. Flow (vph)	118	0	65	179	0	180	51	870	131	219	736	58
Lane Group Flow (vph)	0	183	0	0	179	180	51	870	131	219	794	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0		28.0	28.0	25.0	20.0	37.0	37.0	25.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%	27.8%	22.2%	41.1%	41.1%	27.8%	46.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0	19.0	14.0	31.0	31.0	19.0	36.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.29			0.66	0.24	0.26	0.51	0.16	0.43	0.39	
Control Delay (s/veh)		5.3			42.8	6.5	34.2	19.9	7.9	36.7	13.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.3	
Total Delay (s/veh)		5.3			42.8	6.5	34.2	19.9	7.9	36.7	13.3	
Queue Length 50th (ft)		0			94	24	28	204	18	59	134	
Queue Length 95th (ft)		18			151	50	m42	330	m42	87	223	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130		130	150		
Base Capacity (vph)		742			333	743	320	1719	825	789	2031	
Starvation Cap Reductn		0			0	0	0	0	0	0	560	
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		0.25			0.54	0.24	0.16	0.51	0.16	0.28	0.54	

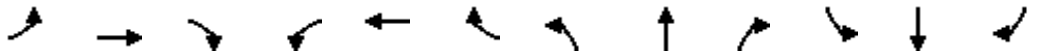
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Future Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3311			1829	1636	1805	3490	1561	3385	3451	
Flt Permitted		0.65			0.64	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2238			1225	1636	1805	3490	1561	3385	3451	
Peak-hour factor, PHF	0.82	0.82	0.82	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	118	0	65	179	0	180	51	870	131	219	736	58
RTOR Reduction (vph)	0	142	0	0	0	65	0	0	60	0	5	0
Lane Group Flow (vph)	0	41	0	0	179	115	51	870	71	219	789	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		18.0			18.0	32.1	5.5	39.9	39.9	14.1	48.5	
Effective Green, g (s)		20.0			20.0	36.1	7.5	41.9	41.9	16.1	50.5	
Actuated g/C Ratio		0.22			0.22	0.40	0.08	0.47	0.47	0.18	0.56	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		497			272	728	150	1624	726	605	1936	
v/s Ratio Prot						0.03	0.03	c0.25	0.05	0.06	c0.23	
v/s Ratio Perm		0.02			c0.15	0.04						
v/c Ratio		0.08			0.66	0.16	0.34	0.54	0.10	0.36	0.41	
Uniform Delay, d1		27.7			31.9	17.2	38.9	17.1	13.5	32.4	11.2	
Progression Factor		1.00			1.00	1.00	0.88	1.10	1.53	1.00	1.00	
Incremental Delay, d2		0.1			5.7	0.1	1.1	1.0	0.2	0.4	0.6	
Delay (s)		27.8			37.5	17.3	35.4	19.9	20.8	32.8	11.9	
Level of Service		C			D	B	D	B	C	C	B	
Approach Delay (s/veh)		27.8			27.4			20.7			16.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

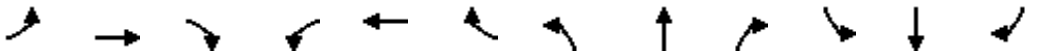
Intersection	
Int Delay, s/veh	1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	3	53	1616	127	37	1774
Future Vol, veh/h	3	53	1616	127	37	1774
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	89	89	93	93	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	3	60	1738	137	38	1829

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2797	937	0	0	1874	0
Stage 1	1806	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.12	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.21	-
Pot Cap-1 Maneuver	15	270	-	-	321	-
Stage 1	119	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	13	270	-	-	321	-
Mov Cap-2 Maneuver	13	-	-	-	-	-
Stage 1	105	-	-	-	-	-
Stage 2	325	-	-	-	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	49.62	0	0.36
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	141	321	-
HCM Lane V/C Ratio	-	-	0.445	0.119	-
HCM Ctrl Dly (s/v)	-	-	49.6	17.7	-
HCM Lane LOS	-	-	E	C	-
HCM 95th %tile Q(veh)	-	-	2	0.4	-

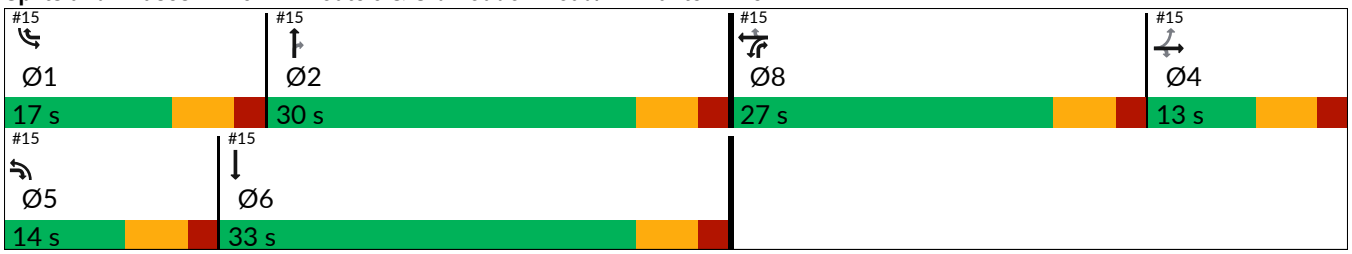


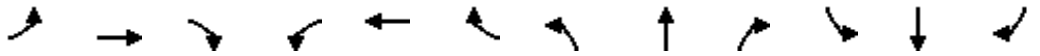
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Future Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.993	
Flt Protected		0.991		0.950	0.961		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1658	1735	1507	1787	3455	1599	3502	3465	0
Flt Permitted		0.805		0.950	0.961		0.950			0.950		
Satd. Flow (perm)	0	1479	1561	1658	1735	1507	1787	3455	1599	3502	3465	0
Satd. Flow (RTOR)			113			187			308		6	
Adj. Flow (vph)	16	69	117	855	84	187	96	932	798	210	1011	48
Lane Group Flow (vph)	0	85	117	470	469	187	96	932	798	210	1059	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	14.0	27.0	27.0	17.0	14.0	30.0	27.0	17.0	33.0	
Total Split (%)	14.9%	14.9%	16.1%	31.0%	31.0%	19.5%	16.1%	34.5%	31.0%	19.5%	37.9%	
Maximum Green (s)	7.0	7.0	8.0	21.0	21.0	11.0	8.0	24.0	21.0	11.0	27.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
v/c Ratio		0.54	0.26	1.02	0.98	0.25	0.47	0.85	0.70	0.43	0.89	
Control Delay (s/veh)		51.3	7.4	81.2	68.7	2.3	44.1	37.0	10.5	36.4	37.5	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		51.3	7.4	81.2	68.7	2.3	44.1	37.0	10.5	36.4	37.5	
Queue Length 50th (ft)		45	2	~304	~281	0	50	256	163	54	287	
Queue Length 95th (ft)		#102	41	#497	#484	24	100	#375	315	87	#415	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		161	460	460	481	776	215	1102	1137	549	1217	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.53	0.25	1.02	0.98	0.24	0.45	0.85	0.70	0.38	0.87	

Intersection Summary
Cycle Length: 87
Actuated Cycle Length: 83.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

~ 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: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

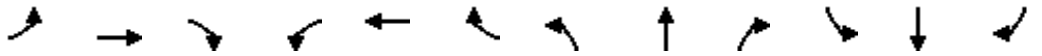




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Future Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1820	1561	1658	1734	1507	1787	3455	1599	3502	3466	
Flt Permitted		0.81	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1479	1561	1658	1734	1507	1787	3455	1599	3502	3466	
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	16	69	117	855	84	187	96	932	798	210	1011	48
RTOR Reduction (vph)	0	0	90	0	0	110	0	0	128	0	4	0
Lane Group Flow (vph)	0	85	27	470	469	77	96	932	670	210	1055	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.4	13.0	21.2	21.2	31.0	7.6	24.4	45.6	9.8	26.6	
Effective Green, g (s)		7.4	17.0	23.2	23.2	35.0	9.6	26.4	49.6	11.8	28.6	
Actuated g/C Ratio		0.09	0.20	0.27	0.27	0.41	0.11	0.31	0.58	0.14	0.34	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		129	386	453	474	621	202	1075	1010	487	1168	
v/s Ratio Prot			0.01	c0.28	0.27	0.02	0.05	0.27	0.18	c0.06	c0.30	
v/s Ratio Perm		c0.06	0.01			0.03			0.24			
v/c Ratio		0.66	0.07	1.04	0.99	0.12	0.48	0.87	0.66	0.43	0.90	
Uniform Delay, d1		37.5	27.5	30.8	30.7	15.4	35.2	27.5	11.9	33.4	26.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		11.5	0.1	52.3	38.2	0.1	1.8	7.5	1.7	0.6	9.9	
Delay (s)		49.0	27.6	83.1	68.8	15.5	37.0	35.1	13.6	34.0	36.6	
Level of Service		D	C	F	E	B	D	D	B	C	D	
Approach Delay (s/veh)		36.6			65.9			25.8			36.2	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



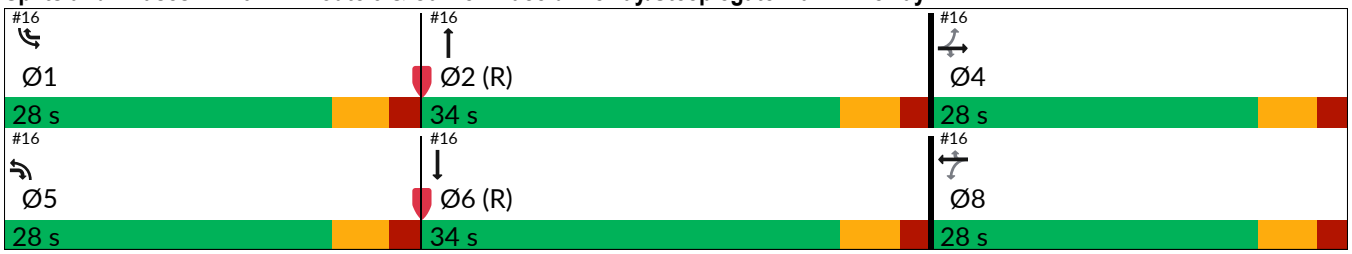
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Future Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.974			0.987	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3365	0	1787	3410	0
Flt Permitted		0.482			0.684		0.950			0.950		
Satd. Flow (perm)	0	916	1615	0	1317	1636	1847	3365	0	1787	3410	0
Satd. Flow (RTOR)			36			36		29			11	
Adj. Flow (vph)	102	0	121	199	0	378	105	875	180	393	946	87
Lane Group Flow (vph)	0	102	121	0	199	378	105	1055	0	393	1033	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0	34.0		28.0	34.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	37.8%		31.1%	37.8%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	28.0		22.0	28.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.51	0.18		0.69	0.43	0.41	0.81		0.82	0.59	
Control Delay (s/veh)		39.0	11.0		44.4	12.4	39.6	32.2		44.3	12.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		39.0	11.0		44.4	12.4	39.6	32.2		44.3	12.0	
Queue Length 50th (ft)		51	29		105	99	56	296		187	167	
Queue Length 95th (ft)		97	54		173	159	101	#428		#349	363	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		244	874		351	900	492	1297		493	1740	
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		0.42	0.14		0.57	0.42	0.21	0.81		0.80	0.59	

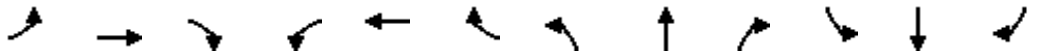
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Future Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		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)		1805	1615		1829	1636	1847	3367		1787	3411	
Flt Permitted		0.48	1.00		0.68	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		915	1615		1316	1636	1847	3367		1787	3411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	102	0	121	199	0	378	105	875	180	393	946	87
RTOR Reduction (vph)	0	0	23	0	0	18	0	18	0	0	5	0
Lane Group Flow (vph)	0	102	98	0	199	360	105	1037	0	393	1028	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		17.8	28.2		17.8	39.8	10.4	32.2		22.0	43.8	
Effective Green, g (s)		19.8	32.2		19.8	43.8	12.4	34.2		24.0	45.8	
Actuated g/C Ratio		0.22	0.36		0.22	0.49	0.14	0.38		0.27	0.51	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		201	649		289	868	254	1279		476	1735	
v/s Ratio Prot			0.02			0.11	0.06	c0.31		c0.22	0.30	
v/s Ratio Perm		0.11	0.04		c0.15	0.11						
v/c Ratio		0.51	0.15		0.69	0.41	0.41	0.81		0.83	0.59	
Uniform Delay, d1		30.8	19.6		32.3	14.9	35.5	25.0		31.0	15.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		0.98	0.63	
Incremental Delay, d2		2.0	0.1		6.7	0.3	1.1	5.7		9.5	1.3	
Delay (s)		32.8	19.7		38.9	15.2	36.6	30.7		40.0	11.0	
Level of Service		C	B		D	B	D	C		D	B	
Approach Delay (s/veh)		25.7			23.4			31.2			19.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	10.7

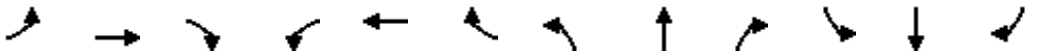
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	45	1187	30	50	1240
Future Vol, veh/h	43	45	1187	30	50	1240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	360	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	93	93	90	90
Heavy Vehicles, %	2	2	1	1	0	0
Mvmt Flow	48	50	1276	32	56	1378

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2092	654	0	0	1309	0
Stage 1	1292	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.1	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	~ 45	409	-	-	536	-
Stage 1	221	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 40	409	-	-	536	-
Mov Cap-2 Maneuver	~ 40	-	-	-	-	-
Stage 1	198	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	$ 302.8	0	0.48
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	75	536	-
HCM Lane V/C Ratio	-	-	1.304	0.104	-
HCM Ctrl Dly (s/v)	-	-	$ 302.8	12.5	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	7.6	0.3	-

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Future Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.994	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3434	0
Flt Permitted		0.655			0.692		0.950			0.950		
Satd. Flow (perm)	0	1244	1615	0	1315	1615	1805	3490	1561	1787	3434	0
Satd. Flow (RTOR)			182			182			109		5	
Adj. Flow (vph)	57	17	150	131	13	27	100	1206	66	22	1189	47
Lane Group Flow (vph)	0	74	150	0	144	27	100	1206	66	22	1236	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	46.0	46.0	16.0	36.0	
Total Split (%)	31.1%	31.1%	31.1%	31.1%	31.1%	31.1%	28.9%	51.1%	51.1%	17.8%	40.0%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	20.0	40.0	40.0	10.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.31	0.33		0.58	0.06	0.41	0.53	0.06	0.12	0.63	
Control Delay (s/veh)		33.3	4.6		41.8	0.3	51.2	7.6	0.7	35.3	15.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		33.3	4.6		41.8	0.3	51.2	7.6	0.7	35.3	15.1	
Queue Length 50th (ft)		37	0		75	0	59	37	0	9	142	
Queue Length 95th (ft)		65	22		94	0	m85	190	m1	m16	287	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		331	564		350	564	441	2270	1053	238	1952	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22	0.27		0.41	0.05	0.23	0.53	0.06	0.09	0.63	

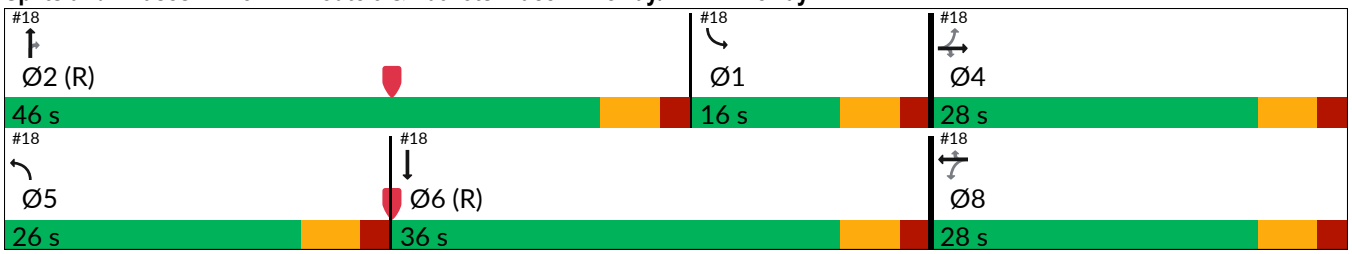
Intersection Summary

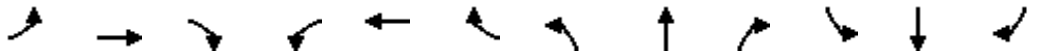
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 47 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

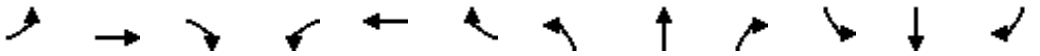




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Future Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3435	
Flt Permitted		0.65	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1244	1615		1316	1615	1805	3490	1561	1787	3435	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	17	150	131	13	27	100	1206	66	22	1189	47
RTOR Reduction (vph)	0	0	122	0	0	22	0	0	26	0	2	0
Lane Group Flow (vph)	0	74	28	0	144	5	100	1206	40	22	1234	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.0	15.0		15.0	15.0	9.0	53.0	53.0	4.0	48.0	
Effective Green, g (s)		17.0	17.0		17.0	17.0	11.0	55.0	55.0	6.0	50.0	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.12	0.61	0.61	0.07	0.56	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		234	305		248	305	220	2132	953	119	1908	
v/s Ratio Prot							0.06	c0.35		0.01	c0.36	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.03			
v/c Ratio		0.32	0.09		0.58	0.02	0.45	0.57	0.04	0.18	0.65	
Uniform Delay, d1		31.5	30.1		33.3	29.7	36.7	10.4	7.0	39.7	13.9	
Progression Factor		1.00	1.00		1.00	1.00	1.36	0.61	0.73	0.97	0.84	
Incremental Delay, d2		0.8	0.1		3.4	0.0	1.2	0.9	0.1	0.6	1.5	
Delay (s)		32.3	30.3		36.7	29.7	51.3	7.2	5.1	39.1	13.2	
Level of Service		C	C		D	C	D	A	A	D	B	
Approach Delay (s/veh)		30.9			35.6			10.3			13.6	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



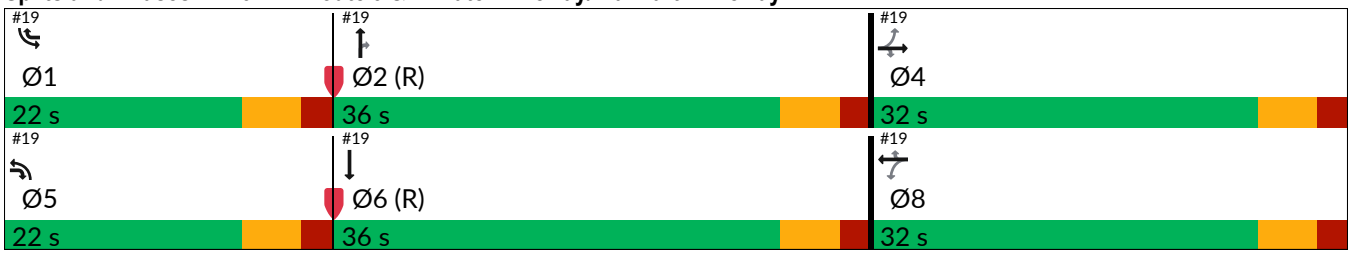
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Future Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1755	1546	1787	3455	1599	1685	3462	0
Flt Permitted		0.553			0.694		0.950			0.950		
Satd. Flow (perm)	0	1051	1615	0	1262	1546	1787	3455	1599	1685	3462	0
Satd. Flow (RTOR)			36			36			109		7	
Adj. Flow (vph)	91	16	108	112	42	185	84	912	24	160	1056	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	912	24	160	1114	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	32.0	32.0	22.0	32.0	32.0	22.0	22.0	36.0	36.0	22.0	36.0	
Total Split (%)	35.6%	35.6%	24.4%	35.6%	35.6%	24.4%	24.4%	40.0%	40.0%	24.4%	40.0%	
Maximum Green (s)	26.0	26.0	16.0	26.0	26.0	16.0	16.0	30.0	30.0	16.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.52	0.17		0.62	0.28	0.37	0.53	0.03	0.55	0.59	
Control Delay (s/veh)		40.1	11.6		43.2	13.1	50.7	10.1	0.1	40.2	17.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		40.1	11.6		43.2	13.1	50.7	10.1	0.1	40.2	17.1	
Queue Length 50th (ft)		55	27		81	54	51	128	0	84	211	
Queue Length 95th (ft)		84	41		122	69	m99	169	m0	137	351	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		326	733		392	712	357	1710	846	348	1876	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.33	0.15		0.39	0.26	0.24	0.53	0.03	0.46	0.59	

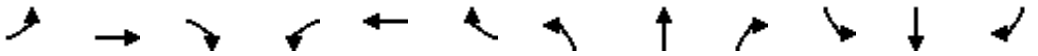
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Future Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1755	1546	1787	3455	1599	1685	3462	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1050	1615		1263	1546	1787	3455	1599	1685	3462	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	91	16	108	112	42	185	84	912	24	160	1056	58
RTOR Reduction (vph)	0	0	24	0	0	23	0	0	12	0	3	0
Lane Group Flow (vph)	0	107	84	0	154	162	84	912	12	160	1111	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.7	25.3		15.7	29.4	9.6	42.6	42.6	13.7	46.7	
Effective Green, g (s)		17.7	29.3		17.7	33.4	11.6	44.6	44.6	15.7	48.7	
Actuated g/C Ratio		0.20	0.33		0.20	0.37	0.13	0.50	0.50	0.17	0.54	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		206	597		248	642	230	1712	792	293	1873	
v/s Ratio Prot			0.02			0.04	0.05	0.26		c0.09	c0.32	
v/s Ratio Perm		0.10	0.03		c0.12	0.06			0.01			
v/c Ratio		0.52	0.14		0.62	0.25	0.37	0.53	0.02	0.55	0.59	
Uniform Delay, d1		32.3	21.4		33.1	19.6	35.8	15.6	11.5	33.9	14.0	
Progression Factor		1.00	1.00		1.00	1.00	1.33	0.51	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.1		4.8	0.2	0.9	1.0	0.0	2.1	1.4	
Delay (s)		34.6	21.6		37.8	19.8	48.6	8.9	11.6	36.0	15.3	
Level of Service		C	C		D	B	D	A	B	D	B	
Approach Delay (s/veh)		28.0			28.0			12.3			17.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	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)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

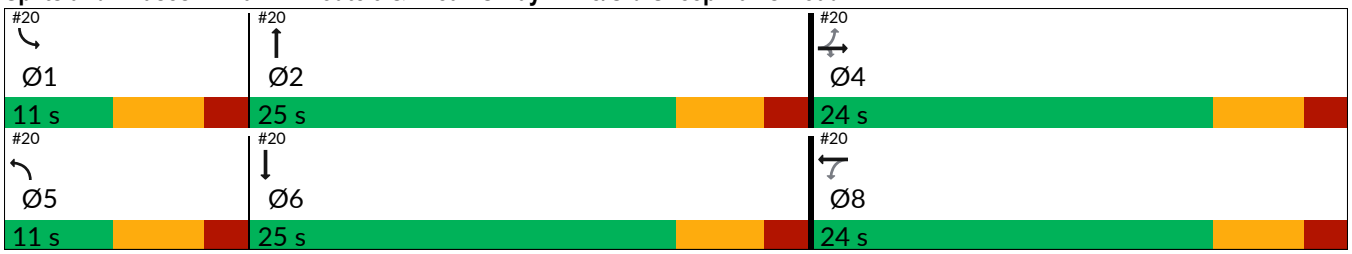
c Critical Lane Group

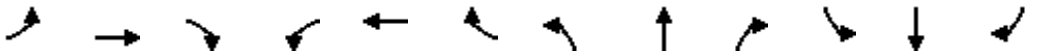
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	1089	0	1	1139	199
Future Volume (vph)	171	0	11	0	0	0	13	1089	0	1	1139	199
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850								0.978	
Flt Protected		0.950					0.950			0.950		
Satd. Flow (prot)	0	1865	1669	0	2153	0	1668	3455	0	1805	3413	0
Flt Permitted		0.757					0.950			0.950		
Satd. Flow (perm)	0	1486	1669	0	2153	0	1668	3455	0	1805	3413	0
Satd. Flow (RTOR)			164								36	
Adj. Flow (vph)	190	0	12	0	0	0	13	1123	0	1	1225	214
Lane Group Flow (vph)	0	190	12	0	0	0	13	1123	0	1	1439	0
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0		11.0	25.0		11.0	25.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		18.3%	41.7%		18.3%	41.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		5.0	19.0		5.0	19.0	
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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
v/c Ratio		0.44	0.02				0.05	0.57		0.00	0.73	
Control Delay (s/veh)		16.9	0.1				20.2	12.8		20.0	15.9	
Queue Delay		0.0	0.0				0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.9	0.1				20.2	12.8		20.0	15.9	
Queue Length 50th (ft)		35	0				3	88		0	126	
Queue Length 95th (ft)		100	0				18	#326		4	#461	
Internal Link Dist (ft)		54			538			1735			1472	
Turn Bay Length (ft)							160			200		
Base Capacity (vph)		677	850				266	1986		288	1977	
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		0.28	0.01				0.05	0.57		0.00	0.73	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 44.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 20: NH Route 9 & Break O'Day Drive/Old Sheep Davis Road

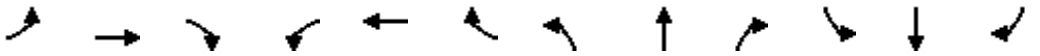




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	11	0	0	0	13	1089	0	1	1139	199
Future Volume (vph)	171	0	11	0	0	0	13	1089	0	1	1139	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	13	14	16	14	10	11	11	12	11	11
Total Lost time (s)		4.0	4.0				4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1865	1669				1668	3455		1805	3412	
Flt Permitted		0.76	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1487	1669				1668	3455		1805	3412	
Peak-hour factor, PHF	0.90	0.90	0.90	0.25	0.90	0.25	0.97	0.97	0.97	0.93	0.93	0.93
Adj. Flow (vph)	190	0	12	0	0	0	13	1123	0	1	1225	214
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	190	3	0	0	0	13	1123	0	1	1421	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		9.4	9.4				0.7	22.9		0.7	22.9	
Effective Green, g (s)		11.4	11.4				2.7	24.9		2.7	24.9	
Actuated g/C Ratio		0.22	0.22				0.05	0.49		0.05	0.49	
Clearance Time (s)		6.0	6.0				6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0				3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		332	373				88	1686		95	1665	
v/s Ratio Prot							c0.01	0.33		0.00	c0.42	
v/s Ratio Perm		c0.13	0.00									
v/c Ratio		0.57	0.01				0.15	0.67		0.01	0.85	
Uniform Delay, d1		17.6	15.4				23.1	9.9		22.9	11.4	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4	0.0				0.8	1.0		0.0	4.5	
Delay (s)		20.0	15.4				23.8	10.9		22.9	15.9	
Level of Service		C	B				C	B		C	B	
Approach Delay (s/veh)		19.7			0.0			11.1			15.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

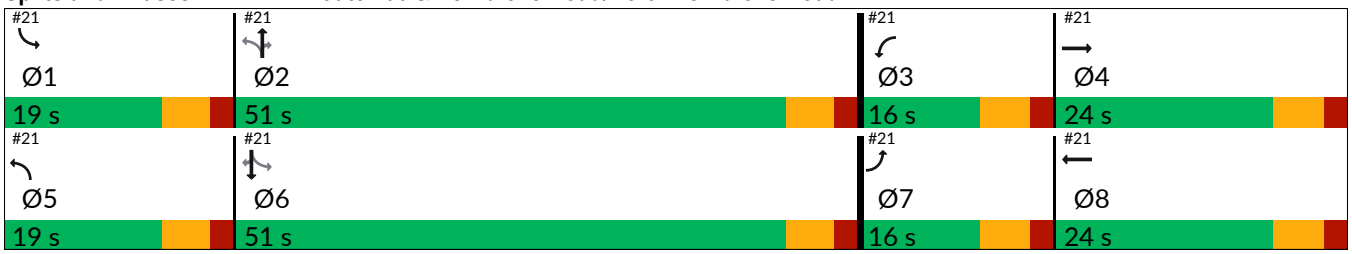


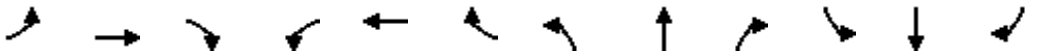
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Future Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.894			0.888				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1699	0	1770	1489	0	1847	1881	1599	1847	1881	1546
Flt Permitted	0.950			0.950			0.084			0.084		
Satd. Flow (perm)	1805	1699	0	1770	1489	0	163	1881	1599	163	1881	1546
Satd. Flow (RTOR)		67			90				149			149
Adj. Flow (vph)	189	28	67	10	31	90	53	973	18	74	928	170
Lane Group Flow (vph)	189	95	0	10	121	0	53	973	18	74	928	170
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	16.0	24.0		16.0	24.0		19.0	51.0	51.0	19.0	51.0	51.0
Total Split (%)	14.5%	21.8%		14.5%	21.8%		17.3%	46.4%	46.4%	17.3%	46.4%	46.4%
Maximum Green (s)	10.0	18.0		10.0	18.0		13.0	45.0	45.0	13.0	45.0	45.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
v/c Ratio	0.80	0.19		0.06	0.50		0.21	1.01	0.02	0.28	0.95	0.19
Control Delay (s/veh)	66.0	13.7		42.0	21.0		9.2	55.6	0.1	10.1	43.4	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.0	13.7		42.0	21.0		9.2	55.6	0.1	10.1	43.4	4.0
Queue Length 50th (ft)	111	12		6	17		11	~626	0	15	513	6
Queue Length 95th (ft)	#249	60		23	71		28	#968	0	36	#895	43
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200		120	250		250
Base Capacity (vph)	237	496		232	396		378	968	895	378	975	873
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.19		0.04	0.31		0.14	1.01	0.02	0.20	0.95	0.19

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 92
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

~ 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: 21: NH Route 106 & Pembroke Road/North Pembroke Road

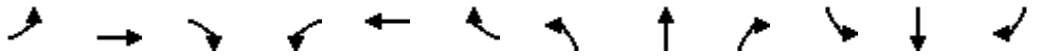




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Future Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1699		1770	1489		1847	1881	1599	1847	1881	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1805	1699		1770	1489		164	1881	1599	163	1881	1546
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)	189	28	67	10	31	90	53	973	18	74	928	170
RTOR Reduction (vph)	0	51	0	0	76	0	0	0	9	0	0	77
Lane Group Flow (vph)	189	44	0	10	45	0	53	973	9	74	928	93
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	10.1	21.8		1.3	13.0		50.7	45.4	45.4	51.3	45.7	45.7
Effective Green, g (s)	12.1	23.8		3.3	15.0		54.7	47.4	47.4	55.3	47.7	47.7
Actuated g/C Ratio	0.12	0.24		0.03	0.15		0.56	0.48	0.48	0.56	0.49	0.49
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	222	412		59	227		216	908	772	222	914	751
v/s Ratio Prot	c0.10	0.03		0.01	c0.03		0.02	c0.52		c0.03	0.49	
v/s Ratio Perm							0.12		0.01	0.16		0.06
v/c Ratio	0.85	0.11		0.17	0.20		0.25	1.07	0.01	0.33	1.02	0.12
Uniform Delay, d1	42.1	28.9		46.1	36.3		19.8	25.3	13.2	19.8	25.2	13.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5	0.1		1.4	0.4		0.6	51.0	0.0	0.9	33.6	0.1
Delay (s)	67.7	29.0		47.4	36.7		20.3	76.3	13.2	20.7	58.8	13.9
Level of Service	E	C		D	D		C	E	B	C	E	B
Approach Delay (s/veh)		54.7			37.5			72.4			49.9	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	98.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Future Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.867			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1592	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.752			0.722			0.144					
Satd. Flow (perm)	1429	1592	0	1372	2072	0	264	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		48			2				66			329
Adj. Flow (vph)	364	6	48	2	6	2	31	658	1	0	673	329
Lane Group Flow (vph)	364	54	0	2	8	0	31	658	1	0	673	329
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0		22.0	22.0		16.0	41.0	41.0	25.0	25.0	25.0
Total Split (%)	26.5%	26.5%		26.5%	26.5%		19.3%	49.4%	49.4%	30.1%	30.1%	30.1%
Maximum Green (s)	16.0	16.0		16.0	16.0		10.0	35.0	35.0	19.0	19.0	19.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	0.10		0.00	0.01		0.09	0.69	0.00		0.85	0.38
Control Delay (s/veh)	32.3	7.0		15.0	13.8		6.4	14.0	0.0		30.1	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	32.3	7.0		15.0	13.8		6.4	14.0	0.0		30.1	3.4
Queue Length 50th (ft)	100	1		0	1		4	143	0		150	0
Queue Length 95th (ft)	#276	24		3	5		13	235	0		#451	44
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	477	563		457	693		466	1260	1128		792	859
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.76	0.10		0.00	0.01		0.07	0.52	0.00		0.85	0.38

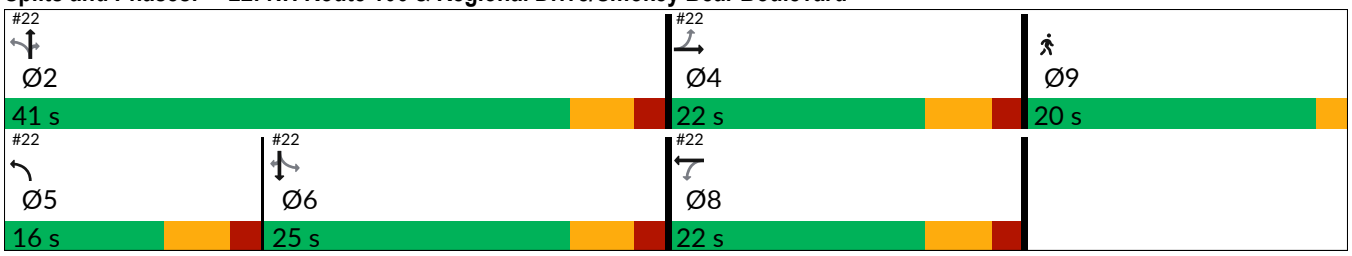
Intersection Summary
Cycle Length: 83

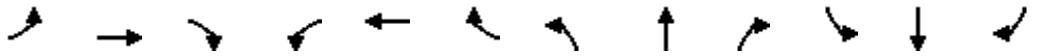
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	24%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 54.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

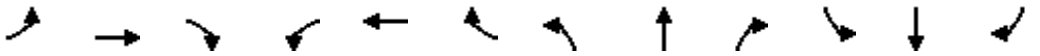




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Future Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1592		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.75	1.00		0.72	1.00		0.14	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1430	1592		1371	2073		265	1837	1615		1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.50	0.50	0.50	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	364	6	48	2	6	2	31	658	1	0	673	329
RTOR Reduction (vph)	0	33	0	0	1	0	0	0	0	0	0	195
Lane Group Flow (vph)	364	21	0	2	7	0	31	658	1	0	673	134
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.2	16.2		16.2	16.2		30.0	30.0	30.0		21.7	21.7
Effective Green, g (s)	18.2	18.2		18.2	18.2		32.0	32.0	32.0		23.7	23.7
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.55	0.55	0.55		0.41	0.41
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	447	497		428	648		255	1010	887		740	629
v/s Ratio Prot		0.01			0.00		0.01	c0.36			c0.37	
v/s Ratio Perm	c0.25			0.00			0.06		0.00			0.09
v/c Ratio	0.81	0.04		0.00	0.01		0.12	0.65	0.00		0.91	0.21
Uniform Delay, d1	18.4	13.9		13.8	13.8		9.8	9.2	5.9		16.2	11.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.9	0.0		0.0	0.0		0.2	1.5	0.0		15.0	0.2
Delay (s)	29.3	14.0		13.8	13.8		10.0	10.7	5.9		31.2	11.4
Level of Service	C	B		B	B		A	B	A		C	B
Approach Delay (s/veh)		27.3			13.8			10.7			24.7	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

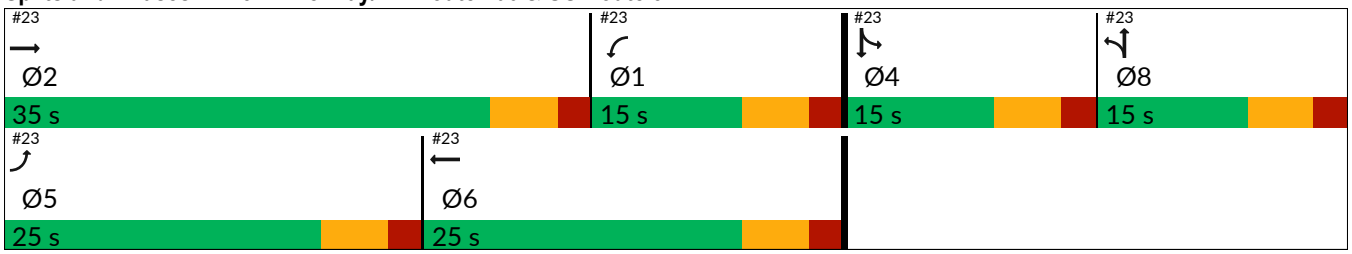


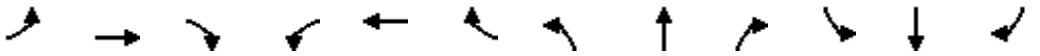
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	494	0	0	464	421	1	3	0	491	1	300
Future Volume (vph)	191	494	0	0	464	421	1	3	0	491	1	300
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt						0.850						0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1728	3455	2069	1818	3455	1759	3385	1837	2090	3351	1818	1599
Satd. Flow (RTOR)						453						368
Adj. Flow (vph)	212	549	0	0	499	453	4	12	0	546	1	333
Lane Group Flow (vph)	212	549	0	0	499	453	4	12	0	546	1	333
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	16.0		11.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	25.0	35.0		15.0	25.0		15.0	15.0		15.0	15.0	
Total Split (%)	31.3%	43.8%		18.8%	31.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	19.0	29.0		9.0	19.0		9.0	9.0		9.0	9.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.49	0.27			0.52	0.26	0.01	0.05		0.84	0.00	0.21
Control Delay (s/veh)	25.5	6.7			22.0	0.4	29.0	29.0		41.7	28.0	0.3
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	25.5	6.7			22.0	0.4	29.0	29.0		41.7	28.0	0.3
Queue Length 50th (ft)	56	31			66	0	0	3		84	0	0
Queue Length 95th (ft)	151	89			157	0	1	6		#262	5	0
Internal Link Dist (ft)		3800			1310			1024			5238	
Turn Bay Length (ft)	350					200	250			250		200
Base Capacity (vph)	642	2172			1283	1759	658	357		652	353	1599
Starvation Cap Reductn	0	0			0	0	0	0		0	0	0
Spillback Cap Reductn	0	0			0	0	0	0		0	0	0
Storage Cap Reductn	0	0			0	0	0	0		0	0	0
Reduced v/c Ratio	0.33	0.25			0.39	0.26	0.01	0.03		0.84	0.00	0.21

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 59.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 23: Kline Way/NH Route 106 & US Route 3

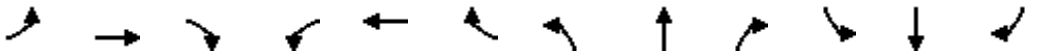




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	494	0	0	464	421	1	3	0	491	1	300
Future Volume (vph)	191	494	0	0	464	421	1	3	0	491	1	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	11	11	15	11	11	15	11	11	12
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1728	3455			3455	1759	3385	1837		3351	1818	1599
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.25	0.25	0.25	0.90	0.90	0.90
Adj. Flow (vph)	212	549	0	0	499	453	4	12	0	546	1	333
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	212	549	0	0	499	453	4	12	0	546	1	333
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	12.7	33.4			14.7	63.0	2.1	2.1		9.5	9.5	63.0
Effective Green, g (s)	14.7	35.4			16.7	63.0	4.1	4.1		11.5	11.5	63.0
Actuated g/C Ratio	0.23	0.56			0.27	1.00	0.07	0.07		0.18	0.18	1.00
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1941			915	1759	220	119		611	331	1599
v/s Ratio Prot	c0.12	0.16			c0.14		0.00	0.01		c0.16	0.00	
v/s Ratio Perm						c0.26						0.21
v/c Ratio	0.53	0.28			0.55	0.26	0.02	0.10		0.89	0.00	0.21
Uniform Delay, d1	21.1	7.2			19.9	0.0	27.6	27.7		25.2	21.1	0.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1			0.7	0.4	0.0	0.4		15.4	0.0	0.3
Delay (s)	22.3	7.3			20.6	0.4	27.6	28.1		40.6	21.1	0.3
Level of Service	C	A			C	A	C	C		D	C	A
Approach Delay (s/veh)		11.5			10.9			28.0			25.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Future Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1787	3336	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.720			0.751	
Satd. Flow (perm)	1787	3336	0	1668	3296	0	0	1368	1830	0	1352	1531
Satd. Flow (RTOR)					8				150			583
Adj. Flow (vph)	472	948	3	1	949	86	10	0	2	56	0	583
Lane Group Flow (vph)	472	951	0	1	1035	0	0	10	2	0	56	583
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	38.0	70.0		11.0	43.0		16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	30.6%	56.5%		8.9%	34.7%		12.9%	12.9%	12.9%	12.9%	12.9%	12.9%
Maximum Green (s)	32.0	64.0		5.0	37.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.76	0.37		0.01	0.76			0.06	0.01		0.35	0.84
Control Delay (s/veh)	37.3	4.3		42.0	28.9			38.6	0.0		45.7	15.9
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	37.3	4.3		42.0	28.9			38.6	0.0		45.7	15.9
Queue Length 50th (ft)	256	68		1	286			6	0		33	0
Queue Length 95th (ft)	380	158		6	369			12	0		72	#167
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	638	2585		122	1355			172	361		170	702
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	0.74	0.37		0.01	0.76			0.06	0.01		0.33	0.83

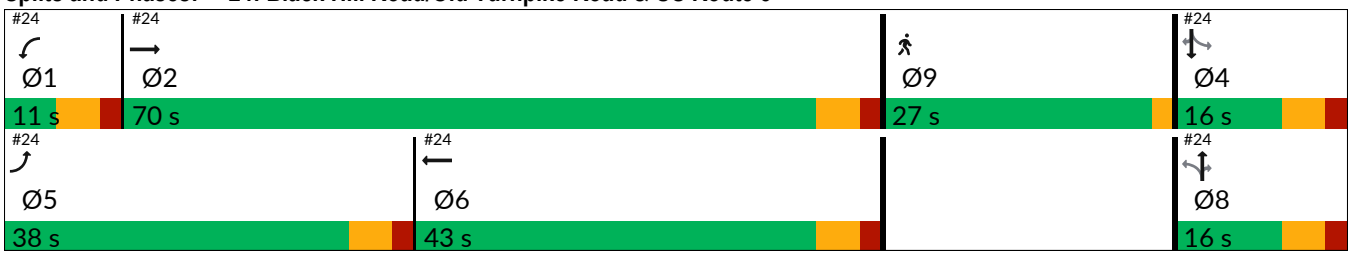
Intersection Summary
Cycle Length: 124

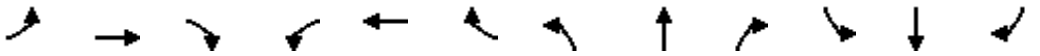
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	22%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 95.2
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

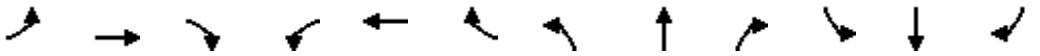




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Future Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3334		1668	3294			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.72	1.00		0.75	1.00
Satd. Flow (perm)	1787	3334		1668	3294			1369	1830		1352	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	472	948	3	1	949	86	10	0	2	56	0	583
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	2	0	0	517
Lane Group Flow (vph)	472	951	0	1	1031	0	0	10	0	0	56	66
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	30.9	71.8		1.0	41.9			9.3	9.3		9.3	9.3
Effective Green, g (s)	32.9	73.8		3.0	43.9			11.3	11.3		11.3	11.3
Actuated g/C Ratio	0.33	0.74		0.03	0.44			0.11	0.11		0.11	0.11
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	587	2458		49	1444			154	206		152	172
v/s Ratio Prot	c0.26	0.29		0.00	c0.31							
v/s Ratio Perm								0.01	0.00		0.04	c0.04
v/c Ratio	0.80	0.39		0.02	0.71			0.06	0.00		0.37	0.38
Uniform Delay, d1	30.7	4.8		47.1	23.0			39.7	39.4		41.1	41.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	7.9	0.1		0.2	1.7			0.2	0.0		1.5	1.4
Delay (s)	38.5	4.9		47.3	24.7			39.9	39.4		42.6	42.6
Level of Service	D	A		D	C			D	D		D	D
Approach Delay (s/veh)		16.1			24.7			39.8			42.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1244	3	4	1371	64	1	0	1	43	0	23
Future Volume (vph)	12	1244	3	4	1371	64	1	0	1	43	0	23
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1728	4964	0	1668	3431	0	1805	1615	0	1829	1583	0
Flt Permitted	0.950			0.950			0.740			0.755		
Satd. Flow (perm)	1728	4964	0	1668	3431	0	1406	1615	0	1453	1583	0
Satd. Flow (RTOR)					6			768			179	
Adj. Flow (vph)	13	1352	3	4	1507	70	4	0	4	48	0	26
Lane Group Flow (vph)	13	1355	0	4	1577	0	4	4	0	48	26	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Detector Phase	5	2		1	3 6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Minimum Split (s)	12.0	24.0		12.0			12.0	12.0		12.0	12.0	
Total Split (s)	12.0	33.0		37.0			33.0	33.0		33.0	33.0	
Total Split (%)	9.4%	25.8%		28.9%			25.8%	25.8%		25.8%	25.8%	
Maximum Green (s)	6.0	27.0		31.0			27.0	27.0		27.0	27.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	-2.0	-2.0		-2.0			-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0			4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None			None	None		None	None	
Walk Time (s)		7.0										
Flash Don't Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.12	1.21		0.01	0.67		0.01	0.00		0.16	0.06	
Control Delay (s/veh)	59.4	143.6		40.8	3.6		39.0	0.0		41.8	0.2	
Queue Delay	0.0	0.1		0.0	0.4		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.4	143.7		40.8	4.0		39.0	0.0		41.8	0.2	
Queue Length 50th (ft)	11	~504		1	24		3	0		33	0	
Queue Length 95th (ft)	33	#601		m2	87		3	0		68	0	
Internal Link Dist (ft)		613			80			349			306	
Turn Bay Length (ft)	85						30					
Base Capacity (vph)	108	1124		464	2339		318	959		329	497	
Starvation Cap Reductn	0	0		0	310		0	0		0	0	
Spillback Cap Reductn	0	34		0	0		0	0		9	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	1.24		0.01	0.78		0.01	0.00		0.15	0.05	

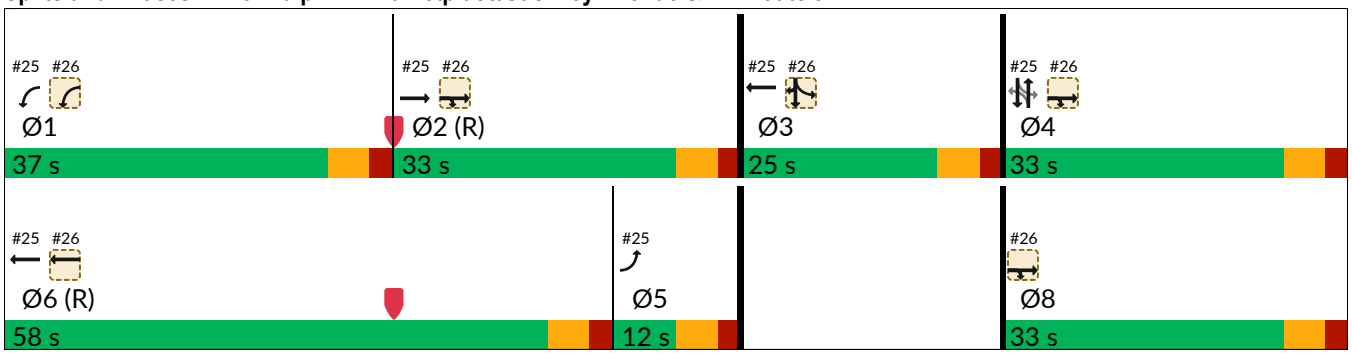
Intersection Summary
Cycle Length: 128

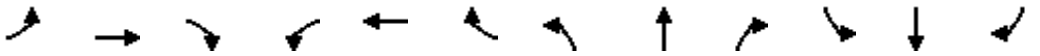
Lane Group	Ø3	Ø6	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Adj. Flow (vph)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	6	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	6.0	6.0
Minimum Split (s)	12.0	24.0	33.0
Total Split (s)	25.0	58.0	33.0
Total Split (%)	20%	45%	26%
Maximum Green (s)	19.0	52.0	27.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?		Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Min	None
Walk Time (s)		7.0	7.0
Flash Don't Walk (s)		11.0	20.0
Pedestrian Calls (#/hr)		0	0
v/c Ratio			
Control Delay (s/veh)			
Queue Delay			
Total Delay (s/veh)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Ralph Pill Marketplace/Stickney Avenue & NH Route 9

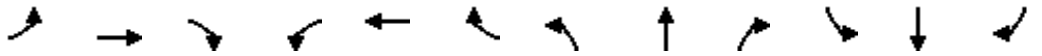




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1244	3	4	1371	64	1	0	1	43	0	23
Future Volume (vph)	12	1244	3	4	1371	64	1	0	1	43	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	15	10	11	12	12	12	12	13	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1728	4963		1668	3432		1805	1615		1829	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.76	1.00	
Satd. Flow (perm)	1728	4963		1668	3432		1407	1615		1454	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.90	0.90	0.90
Adj. Flow (vph)	13	1352	3	4	1507	70	4	0	4	48	0	26
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	21	0
Lane Group Flow (vph)	13	1355	0	4	1575	0	4	1	0	48	5	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.4	27.0		33.6	77.2		24.4	24.4		24.4	24.4	
Effective Green, g (s)	4.4	29.0		35.6	81.2		26.4	26.4		26.4	26.4	
Actuated g/C Ratio	0.03	0.23		0.28	0.63		0.21	0.21		0.21	0.21	
Clearance Time (s)	6.0	6.0		6.0			6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	59	1124		463	2177		290	333		299	326	
v/s Ratio Prot	0.01	c0.27		0.00	c0.46			0.00			0.00	
v/s Ratio Perm							0.00			c0.03		
v/c Ratio	0.22	1.21		0.01	0.72		0.01	0.00		0.16	0.02	
Uniform Delay, d1	60.1	49.5		33.4	15.8		40.4	40.3		41.7	40.5	
Progression Factor	1.00	1.00		1.14	0.26		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	101.1		0.0	0.8		0.0	0.0		0.3	0.0	
Delay (s)	62.0	150.6		38.3	4.8		40.5	40.3		42.0	40.5	
Level of Service	E	F		D	A		D	D		D	D	
Approach Delay (s/veh)		149.7			4.9			40.4			41.4	
Approach LOS		F			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	71.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1142	147	834	1233	0	0	0	0	361	0	207
Future Volume (vph)	0	1142	147	834	1233	0	0	0	0	361	0	207
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected				0.950							0.950	
Satd. Flow (prot)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Flt Permitted				0.950							0.950	
Satd. Flow (perm)	0	4964	1812	3236	3336	0	0	0	0	0	1787	1599
Satd. Flow (RTOR)			160									179
Adj. Flow (vph)	0	1241	160	897	1326	0	0	0	0	401	0	230
Lane Group Flow (vph)	0	1241	160	897	1326	0	0	0	0	0	401	230
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Detector Phase		2 4 8	2 4 8	1	6					3	3	3
Switch Phase												
Minimum Initial (s)				6.0	6.0					6.0	6.0	6.0
Minimum Split (s)				12.0	24.0					12.0	12.0	12.0
Total Split (s)				37.0	58.0					25.0	25.0	25.0
Total Split (%)				28.9%	45.3%					19.5%	19.5%	19.5%
Maximum Green (s)				31.0	52.0					19.0	19.0	19.0
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)				-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag				Lead	Lead							
Lead-Lag Optimize?				Yes	Yes							
Vehicle Extension (s)				3.0	3.0					3.0	3.0	3.0
Recall Mode				None	C-Min					None	None	None
Walk Time (s)					7.0							
Flash Don't Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
v/c Ratio		0.58	0.18	1.00	0.80						1.37	0.56
Control Delay (s/veh)		7.4	0.9	78.4	20.7						226.5	18.4
Queue Delay		3.8	1.9	36.5	9.7						5.0	0.2
Total Delay (s/veh)		11.2	2.7	114.9	30.4						231.5	18.6
Queue Length 50th (ft)		69	0	~415	298						~442	37
Queue Length 95th (ft)		m41	m0	#548	#691						#645	121
Internal Link Dist (ft)		80			150			522			445	
Turn Bay Length (ft)												75
Base Capacity (vph)		2249	908	900	1663						293	411
Starvation Cap Reductn		899	606	190	321						0	0
Spillback Cap Reductn		480	0	0	17						89	14
Storage Cap Reductn		0	0	0	0						0	0
Reduced v/c Ratio		0.92	0.53	1.26	0.99						1.97	0.58

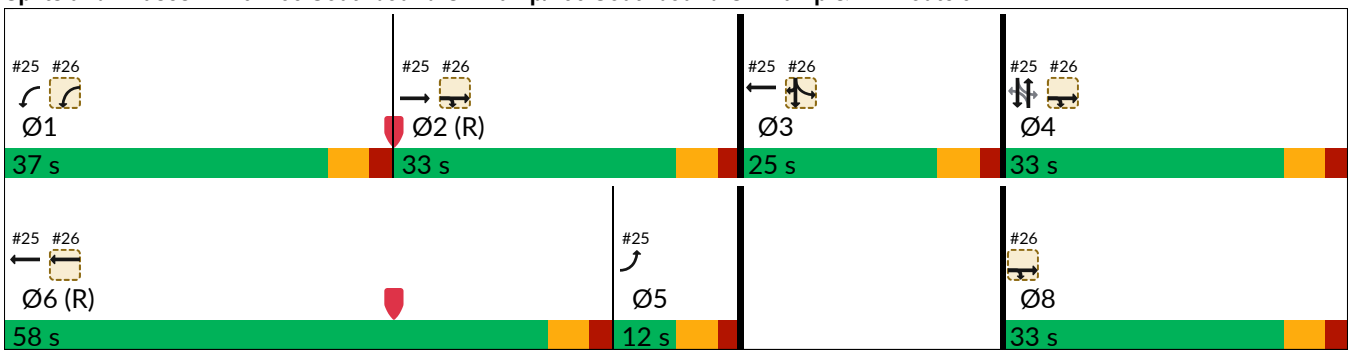
Intersection Summary
Cycle Length: 128

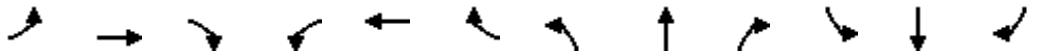
Lane Group	Ø2	Ø4	Ø5	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Adj. Flow (vph)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	5	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	6.0	6.0	6.0	6.0
Minimum Split (s)	24.0	12.0	12.0	33.0
Total Split (s)	33.0	33.0	12.0	33.0
Total Split (%)	26%	26%	9%	26%
Maximum Green (s)	27.0	27.0	6.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lag		Lag	
Lead-Lag Optimize?	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	None	None	None
Walk Time (s)	7.0			7.0
Flash Don't Walk (s)	11.0			20.0
Pedestrian Calls (#/hr)	0			0
v/c Ratio				
Control Delay (s/veh)				
Queue Delay				
Total Delay (s/veh)				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Actuated Cycle Length: 128
Offset: 126 (98%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: I-93 Southbound On-Ramp/I-93 Southbound Off-Ramp & NH Route 9

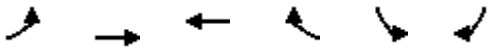




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1142	147	834	1233	0	0	0	0	361	0	207
Future Volume (vph)	0	1142	147	834	1233	0	0	0	0	361	0	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	16	10	10	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		4964	1812	3236	3336						1787	1599
Flt Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		4964	1812	3236	3336						1787	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1241	160	897	1326	0	0	0	0	401	0	230
RTOR Reduction (vph)	0	0	91	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	1241	69	897	1326	0	0	0	0	0	401	80
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		2 4 8	2 4 8	1	6					3	3	3
Permitted Phases												
Actuated Green, G (s)		51.4	51.4	33.6	58.2						19.0	19.0
Effective Green, g (s)		55.4	55.4	35.6	60.2						21.0	21.0
Actuated g/C Ratio		0.43	0.43	0.28	0.47						0.16	0.16
Clearance Time (s)				6.0	6.0						6.0	6.0
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		2148	784	900	1568						293	262
v/s Ratio Prot		c0.25	0.04	c0.28	c0.40						c0.22	0.05
v/s Ratio Perm												
v/c Ratio		0.58	0.09	1.00	0.85						1.37	0.31
Uniform Delay, d1		27.5	21.4	46.1	29.8						53.5	47.1
Progression Factor		0.52	0.53	1.14	0.57						1.00	1.00
Incremental Delay, d2		0.0	0.0	26.3	4.9						186.2	0.7
Delay (s)		14.2	11.3	78.8	22.0						239.7	47.8
Level of Service		B	B	E	C						F	D
Approach Delay (s/veh)		13.9			44.9			0.0			169.7	
Approach LOS		B			D			A			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

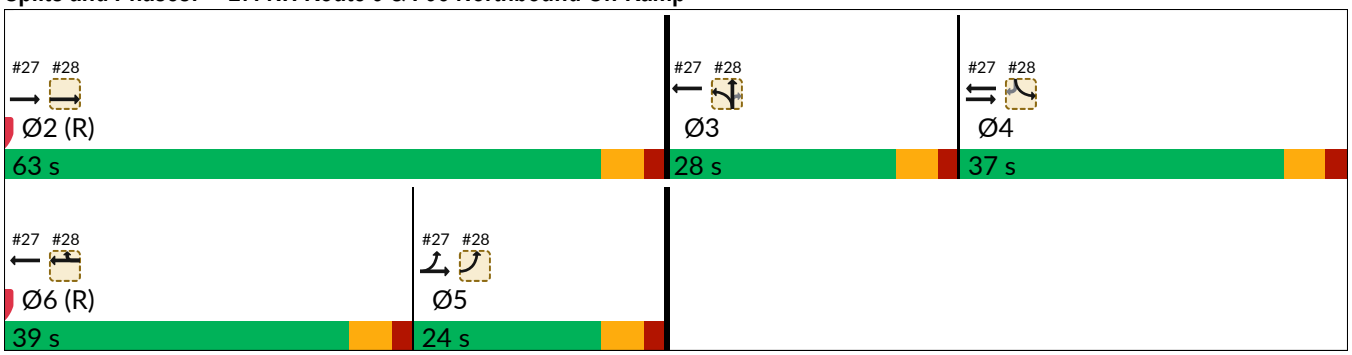


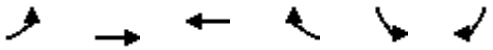
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø3	Ø4	Ø6
Lane Configurations										
Traffic Volume (vph)	128	1375	2067	376	0	0				
Future Volume (vph)	128	1375	2067	376	0	0				
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00				
Frt				0.850						
Flt Protected	0.950									
Satd. Flow (prot)	1668	3336	4793	1669	0	0				
Flt Permitted	0.950									
Satd. Flow (perm)	1668	3336	4793	1669	0	0				
Satd. Flow (RTOR)				154						
Adj. Flow (vph)	136	1463	2176	396	0	0				
Lane Group Flow (vph)	136	1463	2176	396	0	0				
Turn Type	Prot	NA	NA	Free						
Protected Phases	5	2 4 5	3 4 6				2	3	4	6
Permitted Phases				Free						
Detector Phase	5	2 4 5	3 4 6							
Switch Phase										
Minimum Initial (s)	6.0						6.0	6.0	6.0	6.0
Minimum Split (s)	12.0						23.0	12.0	12.0	32.0
Total Split (s)	24.0						63.0	28.0	37.0	39.0
Total Split (%)	18.8%						49%	22%	29%	30%
Maximum Green (s)	18.0						57.0	22.0	31.0	33.0
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)	-2.0									
Total Lost Time (s)	4.0									
Lead/Lag	Lag							Lead	Lag	Lead
Lead-Lag Optimize?	Yes							Yes	Yes	Yes
Vehicle Extension (s)	3.0						3.0	3.0	3.0	3.0
Recall Mode	None						C-Min	Min	None	C-Min
Walk Time (s)							7.0			7.0
Flash Don't Walk (s)							10.0			19.0
Pedestrian Calls (#/hr)							0			0
v/c Ratio	0.52	0.58	0.58	0.24						
Control Delay (s/veh)	46.8	17.9	6.1	0.0						
Queue Delay	5.7	38.7	47.9	0.0						
Total Delay (s/veh)	52.5	56.6	54.0	0.0						
Queue Length 50th (ft)	73	343	124	0						
Queue Length 95th (ft)	m125	m352	m64	m0						
Internal Link Dist (ft)		150	157		399					
Turn Bay Length (ft)										
Base Capacity (vph)	260	2502	3744	1669						
Starvation Cap Reductn	77	1142	1942	0						
Spillback Cap Reductn	0	374	1099	0						
Storage Cap Reductn	0	0	0	0						
Reduced v/c Ratio	0.74	1.08	1.21	0.24						

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: NH Route 9 & I-93 Northbound On-Ramp

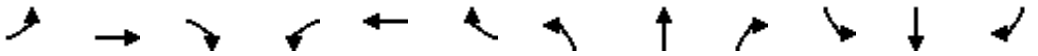




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	1375	2067	376	0	0
Future Volume (vph)	128	1375	2067	376	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	13	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	0.91	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1668	3336	4793	1669		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1668	3336	4793	1669		
Peak-hour factor, PHF	0.94	0.94	0.95	0.95	0.90	0.90
Adj. Flow (vph)	136	1463	2176	396	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	136	1463	2176	396	0	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	NA	Free		
Protected Phases	5	2 4 5	3 4 6			
Permitted Phases				Free		
Actuated Green, G (s)	18.0	94.0	98.0	128.0		
Effective Green, g (s)	20.0	96.0	100.0	128.0		
Actuated g/C Ratio	0.16	0.75	0.78	1.00		
Clearance Time (s)	6.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	260	2502	3744	1669		
v/s Ratio Prot	0.08	c0.44	c0.45			
v/s Ratio Perm				0.24		
v/c Ratio	0.52	0.58	0.58	0.24		
Uniform Delay, d1	49.6	7.1	5.6	0.0		
Progression Factor	0.84	2.37	1.07	1.00		
Incremental Delay, d2	1.2	0.2	0.0	0.0		
Delay (s)	42.7	17.1	6.0	0.0		
Level of Service	D	B	A	A		
Approach Delay (s/veh)		19.3	5.1		0.0	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

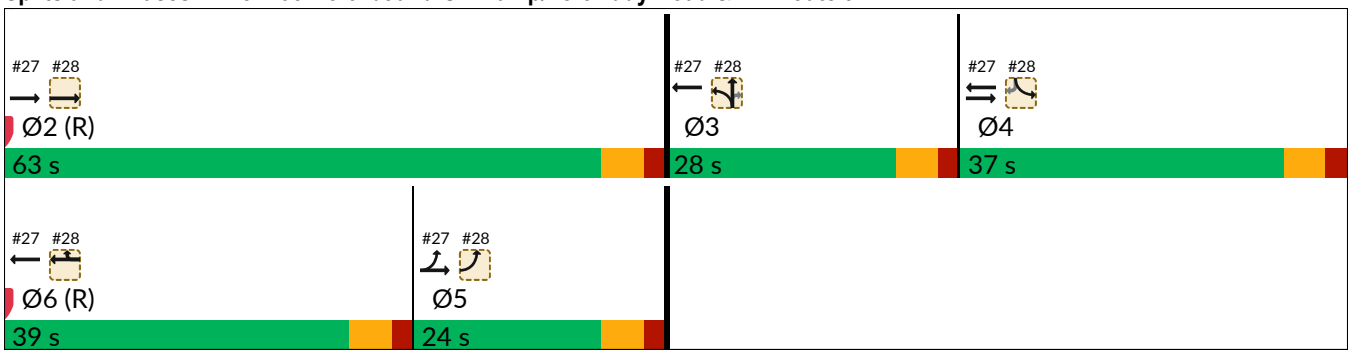


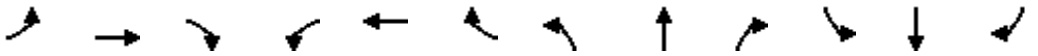
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	888	0	0	1451	561	152	378	745	500	0	840
Future Volume (vph)	487	888	0	0	1451	561	152	378	745	500	0	840
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	0.97	1.00	1.00
Frt						0.850		0.926	0.850			0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3236	3455	0	0	3455	1652	1787	3170	1504	3502	0	1669
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3236	3455	0	0	3455	1652	1787	3170	1504	3502	0	1669
Satd. Flow (RTOR)						398		74	128			371
Adj. Flow (vph)	502	915	0	0	1560	603	169	420	828	532	0	894
Lane Group Flow (vph)	502	915	0	0	1560	603	169	834	414	532	0	894
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Detector Phase	5	2			6	6	3	3	3	4		4
Switch Phase												
Minimum Initial (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Minimum Split (s)	12.0	23.0			32.0	32.0	12.0	12.0	12.0	12.0		12.0
Total Split (s)	24.0	63.0			39.0	39.0	28.0	28.0	28.0	37.0		37.0
Total Split (%)	18.8%	49.2%			30.5%	30.5%	21.9%	21.9%	21.9%	28.9%		28.9%
Maximum Green (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
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)	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0		0.0
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lead/Lag	Lag				Lead	Lead	Lead	Lead	Lead	Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min			C-Min	C-Min	Min	Min	Min	None		None
Walk Time (s)		7.0			7.0	7.0						
Flash Don't Walk (s)		10.0			19.0	19.0						
Pedestrian Calls (#/hr)		0			0	0						
v/c Ratio	0.99	0.57			1.65	0.81	0.50	1.28	1.07	0.59		1.31
Control Delay (s/veh)	79.9	22.2			330.7	29.6	52.7	174.0	100.5	44.7		171.5
Queue Delay	36.0	1.8			0.0	0.0	0.5	0.0	0.0	0.0		0.2
Total Delay (s/veh)	115.9	24.0			330.7	29.6	53.2	174.0	100.5	44.7		171.7
Queue Length 50th (ft)	192	256			~991	220	128	~456	~319	200		~706
Queue Length 95th (ft)	#328	327			m#1064	m257	203	#595	#550	259		#961
Internal Link Dist (ft)		157			856			835			889	
Turn Bay Length (ft)						325	500		500	300		
Base Capacity (vph)	505	1592			944	740	335	654	386	902		685
Starvation Cap Reductn	98	482			0	0	0	0	0	0		0
Spillback Cap Reductn	0	0			0	0	30	0	0	0		21
Storage Cap Reductn	0	0			0	0	0	0	0	0		0
Reduced v/c Ratio	1.23	0.82			1.65	0.81	0.55	1.28	1.07	0.59		1.35

Intersection Summary
Cycle Length: 128

Actuated Cycle Length: 128
Offset: 104 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: I-93 Northbound Off-Ramp/Fort Eddy Road & NH Route 9

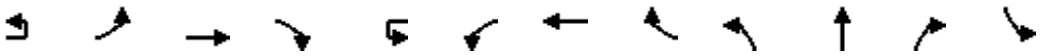




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	888	0	0	1451	561	152	378	745	500	0	840
Future Volume (vph)	487	888	0	0	1451	561	152	378	745	500	0	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	11	13	12	12	13	12	12	13
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		6.0
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	0.91	0.91	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.93	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3236	3455			3455	1652	1787	3169	1504	3502		1669
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	3236	3455			3455	1652	1787	3169	1504	3502		1669
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	502	915	0	0	1560	603	169	420	828	532	0	894
RTOR Reduction (vph)	0	0	0	0	0	289	0	60	104	0	0	281
Lane Group Flow (vph)	502	915	0	0	1560	314	169	774	310	532	0	613
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Prot	Split	NA	Perm	Prot		Perm
Protected Phases	5	2			6	6	3	3		4		
Permitted Phases									3			4
Actuated Green, G (s)	18.0	57.0			33.0	33.0	22.0	22.0	22.0	31.0		31.0
Effective Green, g (s)	20.0	59.0			35.0	35.0	24.0	24.0	24.0	33.0		31.0
Actuated g/C Ratio	0.16	0.46			0.27	0.27	0.19	0.19	0.19	0.26		0.24
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0	6.0	6.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	505	1592			944	451	335	594	282	902		404
v/s Ratio Prot	c0.16	0.26			c0.45	0.19	0.09	c0.24		0.15		
v/s Ratio Perm									0.21			c0.37
v/c Ratio	0.99	0.57			1.65	0.70	0.50	1.30	1.10	0.59		1.52
Uniform Delay, d1	53.9	25.3			46.5	41.7	46.7	52.0	52.0	41.6		48.5
Progression Factor	0.82	0.82			1.24	1.81	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	34.5	1.2			295.3	3.1	1.2	148.3	82.8	1.0		245.0
Delay (s)	78.8	22.0			352.8	78.5	47.9	200.3	134.8	42.6		293.5
Level of Service	E	C			F	E	D	F	F	D		F
Approach Delay (s/veh)		42.1			276.3			163.0			199.9	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	182.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Future Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950				0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	3455	0	0	1805	1669	0
Flt Permitted		0.950				0.950				0.662		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	3455	0	0	1258	1669	0
Satd. Flow (RTOR)				194							127	
Adj. Flow (vph)	1	84	1620	495	1	33	1802	3	373	0	127	22
Lane Group Flow (vph)	0	85	1620	495	0	34	1805	0	0	373	127	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	37.0	37.0	12.0	12.0	21.0		33.0	33.0	33.0	33.0
Total Split (s)	14.0	14.0	76.0	76.0	14.0	14.0	76.0		38.0	38.0	38.0	38.0
Total Split (%)	10.9%	10.9%	59.4%	59.4%	10.9%	10.9%	59.4%		29.7%	29.7%	29.7%	29.7%
Maximum Green (s)	8.0	8.0	70.0	70.0	8.0	8.0	70.0		32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0	7.0	7.0
Flash Don't Walk (s)			24.0	24.0			8.0		20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)			0	0			0		0	0	0	0
v/c Ratio		0.64	0.78	0.51		0.27	0.93			1.11	0.24	
Control Delay (s/veh)		64.1	27.5	13.6		51.9	41.2			125.8	7.2	
Queue Delay		0.0	48.3	0.0		0.0	32.2			0.0	8.6	
Total Delay (s/veh)		64.1	75.8	13.6		51.9	73.5			125.8	15.8	
Queue Length 50th (ft)		66	666	193		28	510			~355	0	
Queue Length 95th (ft)		m99	m686	m221		m37	#912			#513	43	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150						
Base Capacity (vph)		135	2089	979		135	1943			336	538	
Starvation Cap Reductn		0	9	0		0	255			0	0	
Spillback Cap Reductn		0	797	0		0	0			0	369	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.63	1.25	0.51		0.25	1.07			1.11	0.75	

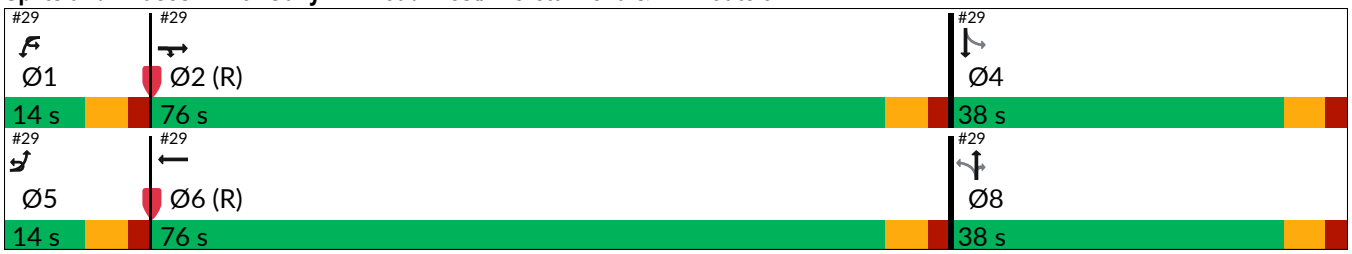
Intersection Summary
Cycle Length: 128

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Lane Util. Factor	1.00	1.00
Frt	0.897	
Flt Protected	0.989	
Satd. Flow (prot)	1729	0
Flt Permitted	0.658	
Satd. Flow (perm)	1150	0
Satd. Flow (RTOR)	73	
Adj. Flow (vph)	1	73
Lane Group Flow (vph)	96	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	6.0	
Minimum Split (s)	33.0	
Total Split (s)	38.0	
Total Split (%)	29.7%	
Maximum Green (s)	32.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	-2.0	
Total Lost Time (s)	4.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
Walk Time (s)	7.0	
Flash Don't Walk (s)	20.0	
Pedestrian Calls (#/hr)	0	
v/c Ratio	0.27	
Control Delay (s/veh)	14.3	
Queue Delay	22.1	
Total Delay (s/veh)	36.5	
Queue Length 50th (ft)	15	
Queue Length 95th (ft)	32	
Internal Link Dist (ft)	277	
Turn Bay Length (ft)		
Base Capacity (vph)	361	
Starvation Cap Reductn	0	
Spillback Cap Reductn	250	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.86	

Intersection Summary

Actuated Cycle Length: 128
Offset: 105 (82%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

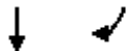
Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Future Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95			1.00	1.00	
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	3454			1805	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.66	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	3454			1258	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1620	495	1	33	1802	3	373	0	127	22
RTOR Reduction (vph)	0	0	0	80	0	0	0	0	0	0	93	0
Lane Group Flow (vph)	0	85	1620	415	0	34	1805	0	0	373	34	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2	2	1	1	6			8		
Permitted Phases									8		8	4
Actuated Green, G (s)		7.9	73.0	73.0		4.8	69.9			32.2	32.2	
Effective Green, g (s)		9.9	75.0	75.0		6.8	71.9			34.2	34.2	
Actuated g/C Ratio		0.08	0.59	0.59		0.05	0.56			0.27	0.27	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0			6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)		133	2024	874		91	1940			336	445	
v/s Ratio Prot		c0.05	c0.47	0.28		0.02	c0.52					
v/s Ratio Perm										c0.30	0.02	
v/c Ratio		0.64	0.80	0.47		0.37	0.93			1.11	0.08	
Uniform Delay, d1		57.3	20.7	15.2		58.5	25.8			46.9	35.1	
Progression Factor		0.88	1.26	1.37		0.85	1.31			1.00	1.00	
Incremental Delay, d2		5.7	2.0	1.1		1.9	7.3			82.1	0.1	
Delay (s)		56.3	28.1	21.9		51.9	41.0			129.0	35.2	
Level of Service		E	C	C		D	D			F	D	
Approach Delay (s/veh)			27.8				41.2			105.2		
Approach LOS			C				D			F		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.66	
Satd. Flow (perm)	1150	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	53	0
Lane Group Flow (vph)	43	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	32.2	
Effective Green, g (s)	34.2	
Actuated g/C Ratio	0.27	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	307	
v/s Ratio Prot		
v/s Ratio Perm	0.04	
v/c Ratio	0.14	
Uniform Delay, d1	35.7	
Progression Factor	1.00	
Incremental Delay, d2	0.2	
Delay (s)	35.9	
Level of Service	D	
Approach Delay (s/veh)	35.9	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Future Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.992				0.997			0.854			0.850
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1728	3427	0	0	1728	3445	0	1787	1607	0	1793	1605
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1728	3427	0	0	1728	3445	0	1787	1607	0	1793	1605
Satd. Flow (RTOR)		6				2			263			406
Adj. Flow (vph)	6	1664	97	1	285	1581	29	199	7	263	19	0
Lane Group Flow (vph)	6	1761	0	0	286	1610	0	199	270	0	19	17
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Detector Phase	5	2		1	1	6		3	8		7	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0		6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0		12.0	12.0
Total Split (s)	12.0	57.0		14.0	14.0	59.0		14.0	16.0		12.0	14.0
Total Split (%)	9.4%	44.5%		10.9%	10.9%	46.1%		10.9%	12.5%		9.4%	10.9%
Maximum Green (s)	6.0	51.0		8.0	8.0	53.0		8.0	10.0		6.0	8.0
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)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead	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	3.0		3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.05	1.24			0.75	0.72		0.48	0.48		0.15	0.04
Control Delay (s/veh)	56.8	156.2			60.1	18.9		48.0	8.8		58.0	0.2
Queue Delay	0.0	0.5			0.0	0.4		2.8	0.0		0.0	0.0
Total Delay (s/veh)	56.8	156.6			60.1	19.3		50.8	8.8		58.0	0.2
Queue Length 50th (ft)	4	~986			207	325		149	5		16	0
Queue Length 95th (ft)	m6	#1131			#402	725		223	74		35	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225				200			90				
Base Capacity (vph)	112	1422			382	2225		417	567		127	499
Starvation Cap Reductn	0	165			0	0		0	0		0	0
Spillback Cap Reductn	0	0			0	196		127	0		0	0
Storage Cap Reductn	0	0			0	0		0	0		0	0
Reduced v/c Ratio	0.05	1.40			0.75	0.79		0.69	0.48		0.15	0.03

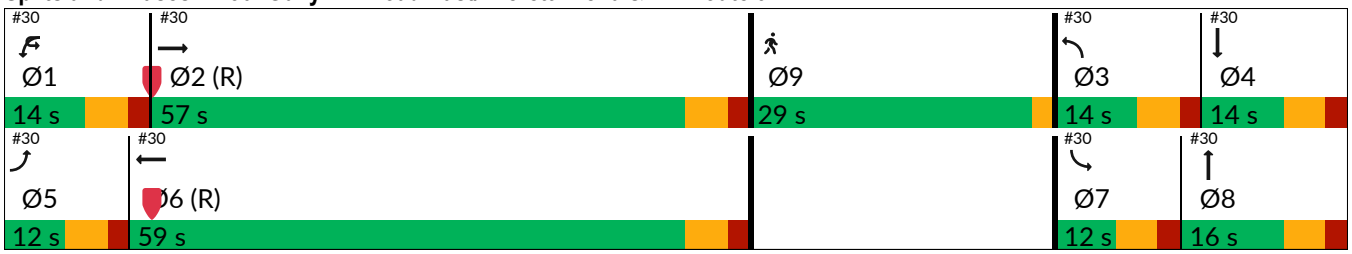
Intersection Summary
Cycle Length: 128

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		23%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 128
Offset: 48 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



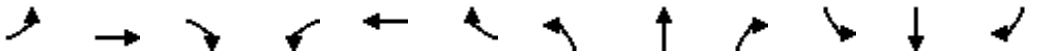
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Future Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95			1.00	0.95		1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1728	3427			1728	3446		1787	1606		1793	1605
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1728	3427			1728	3446		1787	1606		1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1664	97	1	285	1581	29	199	7	262	19	0
RTOR Reduction (vph)	0	4	0	0	0	1	0	0	203	0	0	16
Lane Group Flow (vph)	6	1757	0	0	286	1609	0	199	67	0	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases												
Actuated Green, G (s)	1.4	47.4			26.3	72.3		27.9	27.0		3.3	2.4
Effective Green, g (s)	3.4	49.4			28.3	74.3		29.9	29.0		5.3	4.4
Actuated g/C Ratio	0.03	0.39			0.22	0.58		0.23	0.23		0.04	0.03
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	45	1322			382	2000		417	363		74	55
v/s Ratio Prot	0.00	c0.51			c0.17	c0.47		c0.11	c0.04		0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.13	1.33			0.75	0.80		0.48	0.18		0.26	0.01
Uniform Delay, d1	60.9	39.3			46.5	21.1		42.3	39.9		59.4	59.7
Progression Factor	1.00	1.45			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	151.8			7.8	3.6		0.9	0.2		1.8	0.1
Delay (s)	61.9	208.9			54.4	24.7		43.2	40.2		61.3	59.8
Level of Service	E	F			D	C		D	D		E	E
Approach Delay (s/veh)		208.4				29.2			41.5			60.6
Approach LOS		F				C			D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	106.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

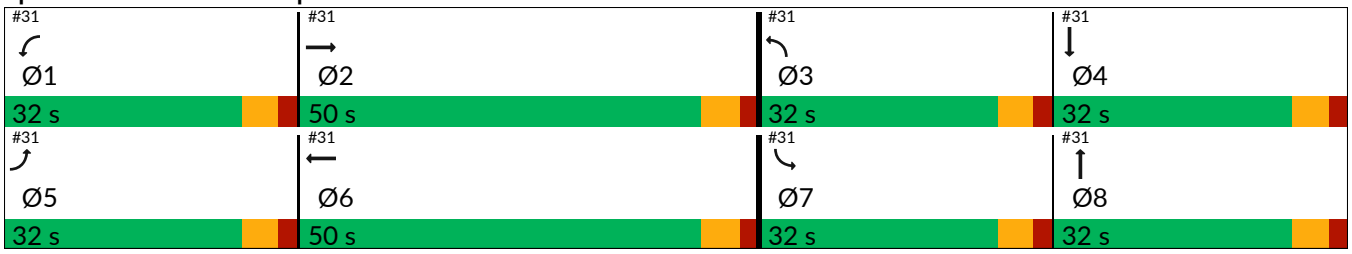


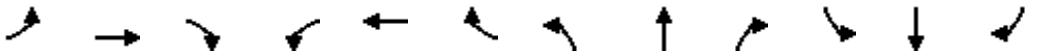
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Future Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			157			157			266			157
Adj. Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
Lane Group Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	32.0	50.0		32.0	50.0		32.0	32.0		32.0	32.0	
Total Split (%)	21.9%	34.2%		21.9%	34.2%		21.9%	21.9%		21.9%	21.9%	
Maximum Green (s)	26.0	44.0		26.0	44.0		26.0	26.0		26.0	26.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.33	1.04	0.16	0.60	0.91	0.04	0.70	0.18	0.17	0.17	0.31	0.06
Control Delay (s/veh)	56.2	69.1	0.2	54.1	38.4	0.0	55.1	37.9	0.2	56.0	56.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.2	69.1	0.2	54.1	38.4	0.0	55.1	37.9	0.2	56.0	56.1	0.1
Queue Length 50th (ft)	43	~670	0	124	~631	0	167	47	0	17	40	0
Queue Length 95th (ft)	93	#982	0	212	#949	0	282	96	0	48	89	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	455	1447	1599	455	1766	1652	440	497	1599	445	468	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	1.04	0.16	0.39	0.91	0.04	0.54	0.15	0.17	0.05	0.12	0.06

Intersection Summary
Cycle Length: 146

Actuated Cycle Length: 112.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ 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: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Future Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3455	1599	1787	3455	1652	1728	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	7.8	46.6	116.3	16.6	55.4	116.3	20.3	24.6	116.3	4.5	8.8	116.3
Effective Green, g (s)	9.8	48.6	116.3	18.6	57.4	116.3	22.3	26.6	116.3	6.5	10.8	116.3
Actuated g/C Ratio	0.08	0.42	1.00	0.16	0.49	1.00	0.19	0.23	1.00	0.06	0.09	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	150	1443	1599	285	1705	1652	331	415	1599	97	170	1561
v/s Ratio Prot	0.03	c0.44		c0.10	c0.47		c0.14	0.04		0.01	c0.03	
v/s Ratio Perm			0.16			0.04			0.17			0.06
v/c Ratio	0.40	1.04	0.16	0.62	0.95	0.04	0.72	0.18	0.17	0.25	0.34	0.06
Uniform Delay, d1	50.5	33.8	0.0	45.5	28.0	0.0	44.1	36.1	0.0	52.6	49.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	35.7	0.2	3.9	11.3	0.0	7.6	0.2	0.2	1.3	1.2	0.1
Delay (s)	52.2	69.6	0.2	49.5	39.3	0.0	51.7	36.3	0.2	53.9	50.6	0.1
Level of Service	D	E	A	D	D	A	D	D	A	D	D	A
Approach Delay (s/veh)		59.3			38.8			26.1			24.9	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Future Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95
Frt			0.996			0.971			0.949			0.951
Flt Protected		0.950			0.950			0.950			0.950	0.981
Satd. Flow (prot)	0	1787	3323	0	1668	3355	0	1685	1683	0	1600	1684
Flt Permitted		0.950			0.950			0.950			0.950	0.981
Satd. Flow (perm)	0	1787	3323	0	1668	3355	0	1685	1683	0	1600	1684
Satd. Flow (RTOR)			2			19			15			15
Adj. Flow (vph)	1	60	1380	33	57	1522	369	139	139	72	428	83
Lane Group Flow (vph)	0	61	1413	0	57	1891	0	139	211	0	308	302
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Detector Phase	5	5	2		1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	21.0	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0
Total Split (%)	14.7%	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%
Maximum Green (s)	15.0	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.31	1.23		0.31	1.61		0.44	0.64		0.86	0.78
Control Delay (s/veh)		47.4	142.0		47.7	306.0		41.6	45.2		63.4	51.8
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay (s/veh)		47.4	142.0		47.7	306.0		41.6	45.2		63.4	51.8
Queue Length 50th (ft)		38	~633		36	~976		81	119		208	190
Queue Length 95th (ft)		81	#828		77	#1190		145	204		#404	#362
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125			130			350	
Base Capacity (vph)		309	1150		288	1172		376	388		357	388
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.20	1.23		0.20	1.61		0.37	0.54		0.86	0.78

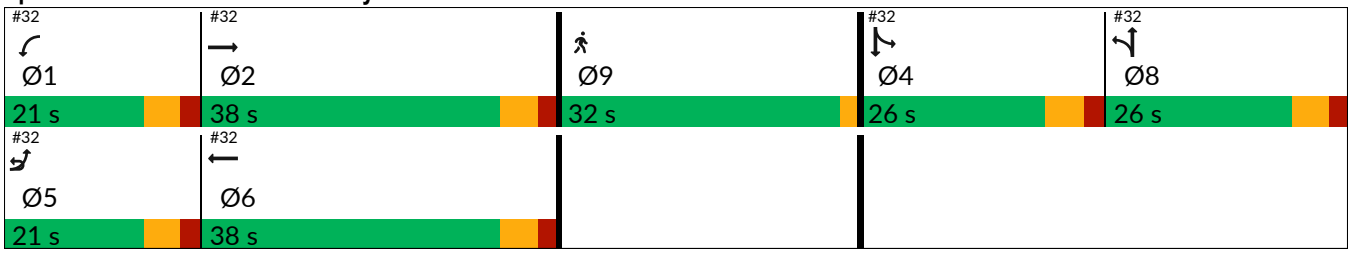
Intersection Summary
Cycle Length: 143

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	92	
Future Volume (vph)	92	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	99	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		22%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 99.4
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



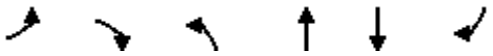
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Future Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95
Frt		1.00	1.00		1.00	0.97		1.00	0.95		1.00	0.95
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (prot)		1787	3324		1668	3354		1685	1683		1600	1683
Flt Permitted		0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.98
Satd. Flow (perm)		1787	3324		1668	3354		1685	1683		1600	1683
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93
Adj. Flow (vph)	1	60	1380	33	57	1522	369	139	139	72	428	83
RTOR Reduction (vph)	0	0	1	0	0	13	0	0	12	0	0	12
Lane Group Flow (vph)	0	61	1412	0	57	1878	0	139	199	0	308	290
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		8	8		4	4
Permitted Phases												
Actuated Green, G (s)		7.4	32.4		7.4	32.4		16.7	16.7		20.2	20.2
Effective Green, g (s)		9.4	34.4		9.4	34.4		18.7	18.7		22.2	22.2
Actuated g/C Ratio		0.09	0.34		0.09	0.34		0.19	0.19		0.22	0.22
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		166	1135		155	1145		312	312		352	371
v/s Ratio Prot		0.03	0.42		c0.03	c0.56		0.08	c0.12		c0.19	0.17
v/s Ratio Perm												
v/c Ratio		0.37	1.24		0.37	1.64		0.45	0.64		0.88	0.78
Uniform Delay, d1		42.9	33.2		42.9	33.2		36.4	37.9		37.9	37.0
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.4	117.3		1.5	292.2		1.0	4.2		20.7	10.3
Delay (s)		44.2	150.4		44.3	325.4		37.4	42.1		58.6	47.3
Level of Service		D	F		D	F		D	D		E	D
Approach Delay (s/veh)			146.0			317.2			40.2			53.0
Approach LOS			F			F			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	200.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	92
Future Volume (vph)	92
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	99
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



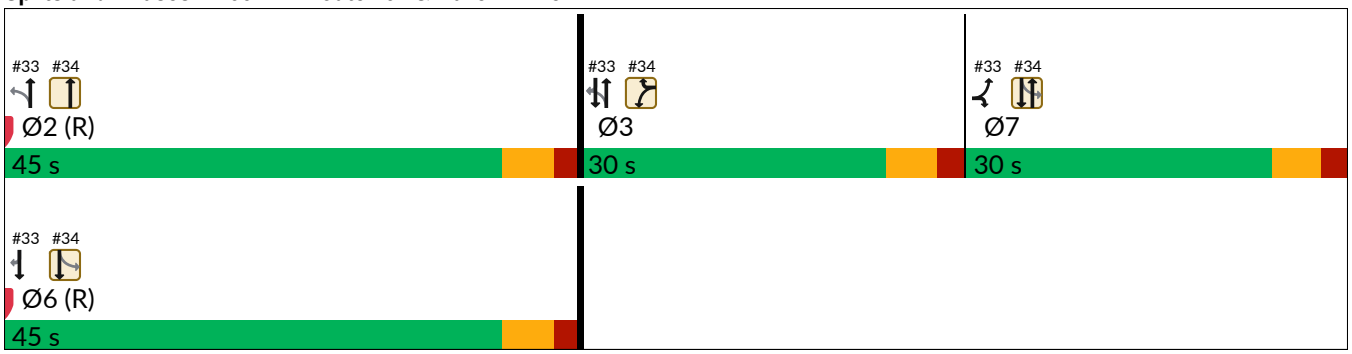
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	156	23	14	537	717	159			
Future Volume (vph)	156	23	14	537	717	159			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	1805	1615	0	1817	1900	1561			
Flt Permitted	0.950			0.977					
Satd. Flow (perm)	1805	1615	0	1777	1900	1561			
Satd. Flow (RTOR)		26				164			
Adj. Flow (vph)	173	26	16	597	739	164			
Lane Group Flow (vph)	173	26	0	613	739	164			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.40	0.06		0.50	0.57	0.15			
Control Delay (s/veh)	36.4	11.8		10.0	13.1	3.2			
Queue Delay	0.0	0.0		0.0	1.2	0.0			
Total Delay (s/veh)	36.4	11.8		10.0	14.3	3.2			
Queue Length 50th (ft)	97	0		183	262	10			
Queue Length 95th (ft)	161	22		264	377	m31			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	446	419		1201	1284	1108			
Starvation Cap Reductn	0	0		0	319	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.39	0.06		0.51	0.77	0.15			

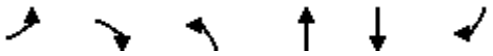
Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	156	23	14	537	717	159
Future Volume (vph)	156	23	14	537	717	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1805	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	1805	1615		1777	1900	1561
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.97	0.97
Adj. Flow (vph)	173	26	16	597	739	164
RTOR Reduction (vph)	0	20	0	0	0	52
Lane Group Flow (vph)	173	6	0	613	739	112
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	23.3	23.3		69.7	69.7	69.7
Effective Green, g (s)	25.3	25.3		71.7	71.7	71.7
Actuated g/C Ratio	0.24	0.24		0.68	0.68	0.68
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	434	389		1213	1297	1065
v/s Ratio Prot	c0.10	0.00			c0.39	
v/s Ratio Perm				0.35		0.07
v/c Ratio	0.40	0.02		0.51	0.57	0.11
Uniform Delay, d1	33.5	30.4		8.1	8.6	5.7
Progression Factor	1.00	1.00		1.00	1.27	3.09
Incremental Delay, d2	0.6	0.0		0.3	0.5	0.0
Delay (s)	34.1	30.4		8.4	11.5	17.6
Level of Service	C	C		A	B	B
Approach Delay (s/veh)	33.6			8.4	12.6	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

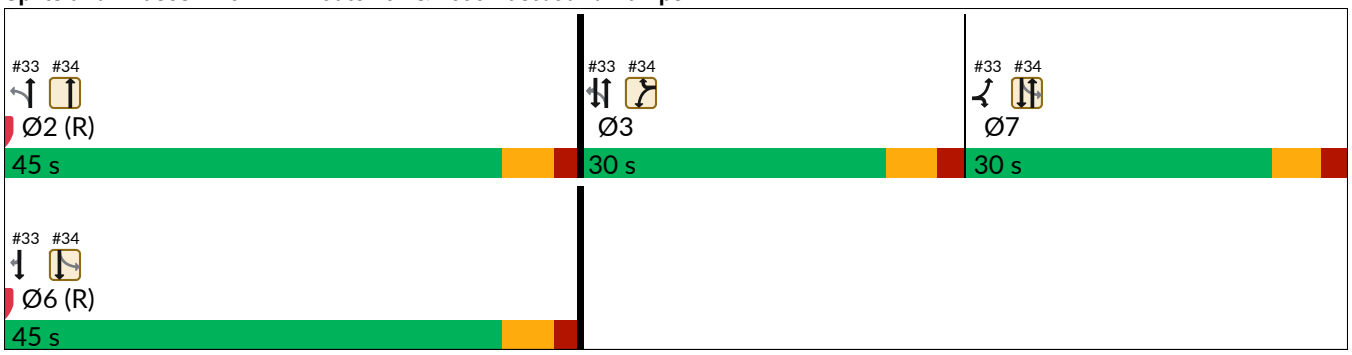
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	369	80	599	96	43	515			
Future Volume (vph)	369	80	599	96	43	515			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.979						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3383	0	1728	1818			
Flt Permitted	0.950				0.324				
Satd. Flow (perm)	1805	1615	3383	0	589	1818			
Satd. Flow (RTOR)		63	38						
Adj. Flow (vph)	393	85	666	107	46	548			
Lane Group Flow (vph)	393	85	773	0	46	548			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.81	0.18	0.35		0.12	0.46			
Control Delay (s/veh)	50.9	12.7	5.8		7.2	10.3			
Queue Delay	0.0	0.0	0.3		0.0	0.1			
Total Delay (s/veh)	50.9	12.7	6.1		7.2	10.4			
Queue Length 50th (ft)	255	11	70		10	154			
Queue Length 95th (ft)	#425	51	89		24	221			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	487	482	2274		393	1215			
Starvation Cap Reductn	0	0	812		0	0			
Spillback Cap Reductn	0	0	0		0	64			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.81	0.18	0.53		0.12	0.48			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

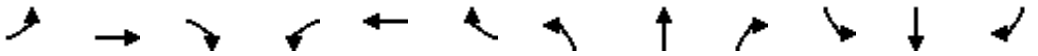


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	369	80	599	96	43	515
Future Volume (vph)	369	80	599	96	43	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3383		1728	1818
Flt Permitted	0.95	1.00	1.00		0.32	1.00
Satd. Flow (perm)	1805	1615	3383		589	1818
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94
Adj. Flow (vph)	393	85	666	107	46	548
RTOR Reduction (vph)	0	46	13	0	0	0
Lane Group Flow (vph)	393	39	760	0	46	548
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	26.4	26.4	66.6		66.6	66.6
Effective Green, g (s)	28.4	28.4	68.6		68.6	68.6
Actuated g/C Ratio	0.27	0.27	0.65		0.65	0.65
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	488	436	2210		384	1187
v/s Ratio Prot	c0.22	0.02	0.22			c0.30
v/s Ratio Perm					0.08	
v/c Ratio	0.81	0.09	0.34		0.12	0.46
Uniform Delay, d1	35.7	28.6	8.1		6.8	9.0
Progression Factor	1.00	1.00	0.71		1.00	1.00
Incremental Delay, d2	9.4	0.1	0.1		0.1	0.3
Delay (s)	45.1	28.7	5.9		7.0	9.3
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	42.2		5.9			9.1
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

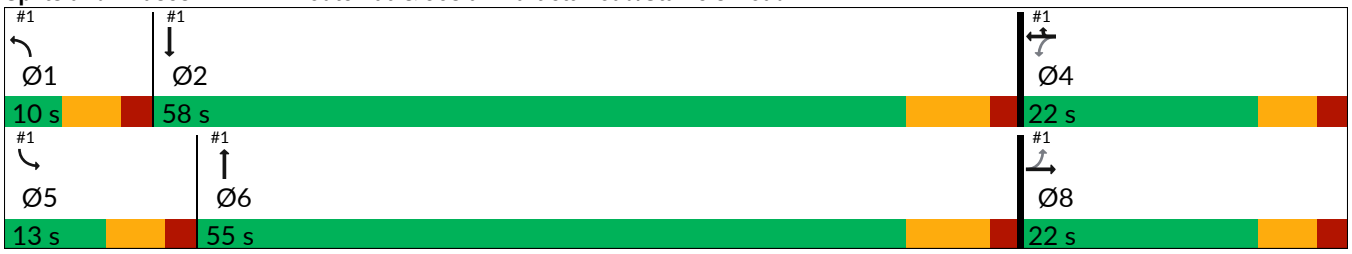
2027 Mitigated Opening Year Build Weekday Morning Peak-Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Future Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.907				0.850		0.987				
Flt Protected		0.988			0.950					0.950		
Satd. Flow (prot)	0	1622	0	0	1736	1553	1776	3330	0	1736	3471	0
Flt Permitted		0.918			0.747					0.950		
Satd. Flow (perm)	0	1507	0	0	1365	1553	1776	3330	0	1736	3471	0
Satd. Flow (RTOR)		11				127		18				
Adj. Flow (vph)	4	1	11	133	0	20	0	413	40	33	1310	3
Lane Group Flow (vph)	0	16	0	0	133	20	0	453	0	33	1313	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	22.0	22.0		22.0	22.0	22.0	10.0	55.0		13.0	58.0	
Total Split (%)	24.4%	24.4%		24.4%	24.4%	24.4%	11.1%	61.1%		14.4%	64.4%	
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	4.0	47.5		7.0	50.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.05			0.43	0.04		0.22		0.17	0.54	
Control Delay (s/veh)		14.4			26.9	0.2		8.9		31.1	7.8	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		14.4			26.9	0.2		8.9		31.1	7.8	
Queue Length 50th (ft)		1			40	0		32		11	135	
Queue Length 95th (ft)		14			97	0		92		40	210	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		478			426	572		2758		210	3003	
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		0.03			0.31	0.03		0.16		0.16	0.44	

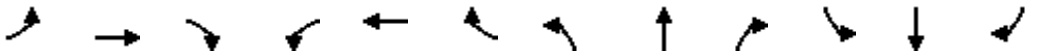
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 59.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Future Volume (vph)	3	1	8	109	0	16	0	351	34	28	1127	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.91			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1621			1736	1553		3329		1736	3470	
Flt Permitted		0.92			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1506			1365	1553		3329		1736	3470	
Peak-hour factor, PHF	0.75	0.75	0.75	0.82	0.82	0.82	0.85	0.85	0.85	0.86	0.86	0.86
Adj. Flow (vph)	4	1	11	133	0	20	0	413	40	33	1310	3
RTOR Reduction (vph)	0	9	0	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	133	4	0	445	0	33	1313	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		9.5			9.5	9.5		33.6		2.4	42.0	
Effective Green, g (s)		11.5			11.5	11.5		35.6		2.4	44.0	
Actuated g/C Ratio		0.18			0.18	0.18		0.55		0.04	0.68	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		266			241	274		1823		64	2348	
v/s Ratio Prot						0.00		0.13		0.02	c0.38	
v/s Ratio Perm		0.00			c0.10							
v/c Ratio		0.03			0.55	0.01		0.24		0.52	0.56	
Uniform Delay, d1		22.1			24.4	22.1		7.7		30.7	5.5	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			2.7	0.0		0.1		6.9	0.3	
Delay (s)		22.2			27.1	22.1		7.7		37.6	5.7	
Level of Service		C			C	C		A		D	A	
Approach Delay (s/veh)		22.2			26.5			7.7			6.5	
Approach LOS		C			C			A			A	

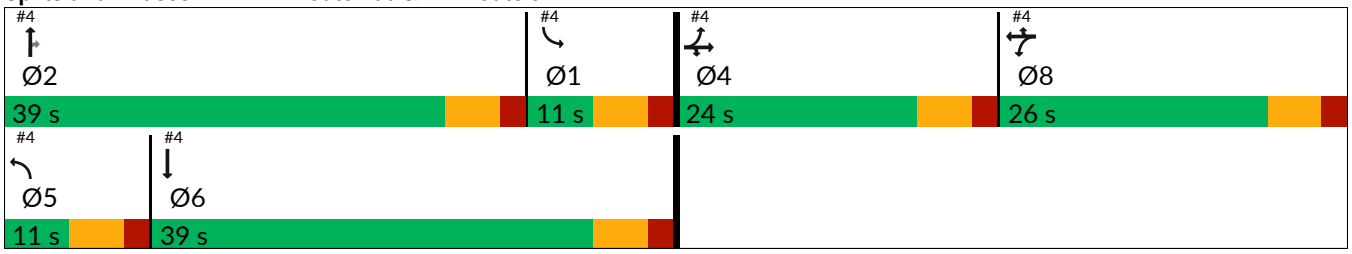
Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

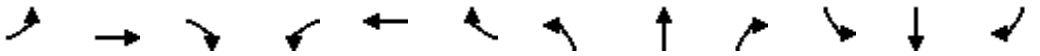


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Future Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			229			229			164			355
Adj. Flow (vph)	222	120	46	516	248	93	11	317	143	39	822	388
Lane Group Flow (vph)	222	120	46	516	248	93	11	317	143	39	822	388
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	11.0	39.0	39.0	11.0	39.0	
Total Split (%)	24.0%	24.0%	24.0%	26.0%	26.0%	26.0%	11.0%	39.0%	39.0%	11.0%	39.0%	
Maximum Green (s)	18.0	18.0	18.0	20.0	20.0	20.0	5.0	33.0	33.0	5.0	33.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.38	0.38	0.10	0.58	0.27	0.16	0.07	0.36	0.28	0.17	0.67	0.22
Control Delay (s/veh)	31.1	33.8	0.4	29.1	25.3	0.6	39.8	27.1	5.4	34.2	24.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.1	33.8	0.4	29.1	25.3	0.6	39.8	27.1	5.4	34.2	24.4	0.3
Queue Length 50th (ft)	48	51	0	102	45	0	5	72	0	17	165	0
Queue Length 95th (ft)	95	117	0	203	101	0	26	142	39	47	277	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	900	488	580	1019	1050	628	157	1578	790	223	1655	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.25	0.08	0.51	0.24	0.15	0.07	0.20	0.18	0.17	0.50	0.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 74.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: NH Route 106 & NH Route 9

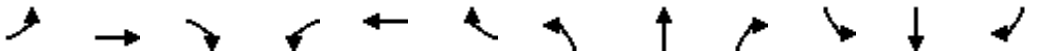




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Future Volume (vph)	189	102	39	439	211	79	10	285	129	32	682	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.83	0.83	0.83
Adj. Flow (vph)	222	120	46	516	248	93	11	317	143	39	822	388
RTOR Reduction (vph)	0	0	38	0	0	70	0	0	106	0	0	0
Lane Group Flow (vph)	222	120	8	516	248	23	11	317	37	39	822	388
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	11.6	11.6	11.6	17.9	17.9	17.9	0.7	18.2	18.2	7.4	24.9	79.1
Effective Green, g (s)	13.6	13.6	13.6	19.9	19.9	19.9	2.7	20.2	20.2	9.4	26.9	79.1
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.03	0.26	0.26	0.12	0.34	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	554	300	255	834	860	385	55	825	369	201	1152	1777
v/s Ratio Prot	c0.07	0.07	0.01	c0.16	0.07	0.02	0.01	c0.10		0.02	c0.24	
v/s Ratio Perm									0.03			0.22
v/c Ratio	0.40	0.40	0.03	0.62	0.29	0.06	0.20	0.38	0.10	0.19	0.71	0.22
Uniform Delay, d1	29.1	29.1	27.3	26.2	23.9	22.5	37.1	24.3	22.5	31.4	22.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9	0.0	1.4	0.2	0.1	1.8	0.3	0.1	0.5	2.1	0.3
Delay (s)	29.6	30.0	27.3	27.6	24.1	22.6	38.9	24.6	22.6	31.9	24.9	0.3
Level of Service	C	C	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		29.5			26.0			24.3			17.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

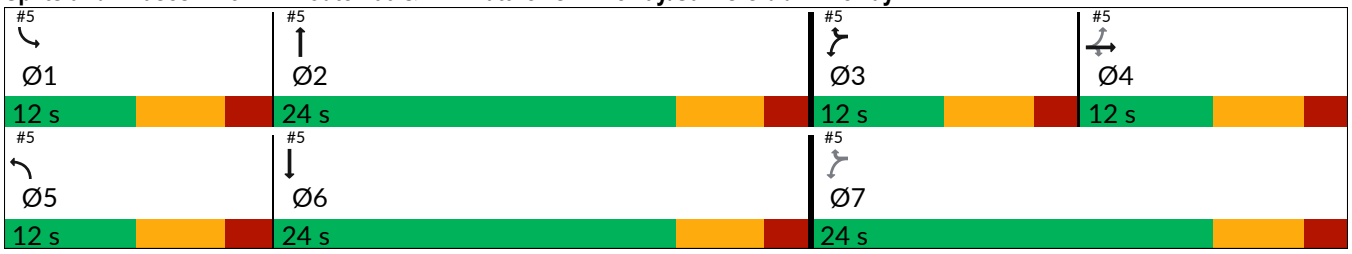
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	10	12	0	17	6	295	4	27	744	9
Future Volume (vph)	8	0	10	12	0	17	6	295	4	27	744	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.998			0.998	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1805	1615	1745	0	1669	1616	3225	0	1770	3532	0
Flt Permitted		0.950		0.000			0.950			0.950		
Satd. Flow (perm)	0	1805	1615	0	0	1669	1616	3225	0	1770	3532	0
Satd. Flow (RTOR)			273			164		2			2	
Adj. Flow (vph)	16	0	20	17	0	25	7	328	4	30	827	10
Lane Group Flow (vph)	0	16	20	17	0	25	7	332	0	30	837	0
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Detector Phase	4	4	4	3		3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0	6.0	10.0		6.0	6.0	
Minimum Split (s)	12.0	12.0	12.0	12.0		12.0	12.0	16.0		12.0	12.0	
Total Split (s)	12.0	12.0	12.0	12.0		12.0	12.0	24.0		12.0	24.0	
Total Split (%)	20.0%	20.0%	20.0%	20.0%		20.0%	20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	6.0	6.0	6.0	6.0		6.0	6.0	18.0		6.0	18.0	
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)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	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	3.0		3.0	3.0	
Recall Mode	None	None	None	None		None	None	Min		None	Min	
v/c Ratio		0.04	0.04	0.05		0.05	0.02	0.14		0.08	0.31	
Control Delay (s/veh)		19.9	0.1	19.9		0.2	20.2	9.5		19.8	8.0	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.9	0.1	19.9		0.2	20.2	9.5		19.8	8.0	
Queue Length 50th (ft)		2	0	2		0	1	0		3	0	
Queue Length 95th (ft)		11	0	16		0	13	79		31	197	
Internal Link Dist (ft)		210			308			1555			2106	
Turn Bay Length (ft)			50			125	400			600		
Base Capacity (vph)		390	563	377		489	349	2390		383	2694	
Starvation Cap Reductn		0	0	0		0	0	0		0	0	
Spillback Cap Reductn		0	0	0		0	0	0		0	0	
Storage Cap Reductn		0	0	0		0	0	0		0	0	
Reduced v/c Ratio		0.04	0.04	0.05		0.05	0.02	0.14		0.08	0.31	

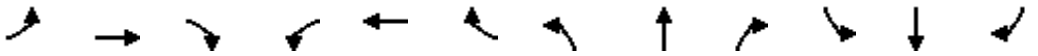
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 40.8
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: NH Route 106 & WB Matthews Driveway/Sam's Club Driveway



Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	24.0
Total Split (%)	40%
Maximum Green (s)	18.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

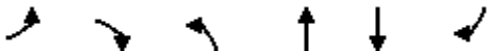
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	10	12	0	17	6	295	4	27	744	9
Future Volume (vph)	8	0	10	12	0	17	6	295	4	27	744	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	13	11	11	11	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615	1745		1669	1616	3225		1770	3533	
Flt Permitted		0.95	1.00	0.00		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1805	1615	0		1669	1616	3225		1770	3533	
Peak-hour factor, PHF	0.50	0.50	0.50	0.69	0.69	0.69	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	0	20	17	0	25	7	328	4	30	827	10
RTOR Reduction (vph)	0	0	19	0	0	23	0	1	0	0	1	0
Lane Group Flow (vph)	0	16	1	17	0	2	7	331	0	30	836	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Actuated Green, G (s)		1.7	1.7	1.7		1.7	0.8	24.7		1.7	25.6	
Effective Green, g (s)		3.7	3.7	3.7		3.7	2.8	26.7		3.7	27.6	
Actuated g/C Ratio		0.07	0.07	0.07		0.07	0.05	0.50		0.07	0.51	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		124	111	120		114	84	1600		121	1812	
v/s Ratio Prot				c0.01		0.00	0.00	0.10		c0.02	c0.24	
v/s Ratio Perm		0.01	0.00									
v/c Ratio		0.13	0.01	0.14		0.02	0.08	0.21		0.25	0.46	
Uniform Delay, d1		23.5	23.3	23.6		23.4	24.3	7.6		23.7	8.4	
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.5		0.1	0.4	0.1		1.1	0.2	
Delay (s)		24.0	23.4	24.1		23.4	24.7	7.7		24.8	8.5	
Level of Service		C	C	C		C	C	A		C	A	
Approach Delay (s/veh)		23.7			23.7			8.0			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

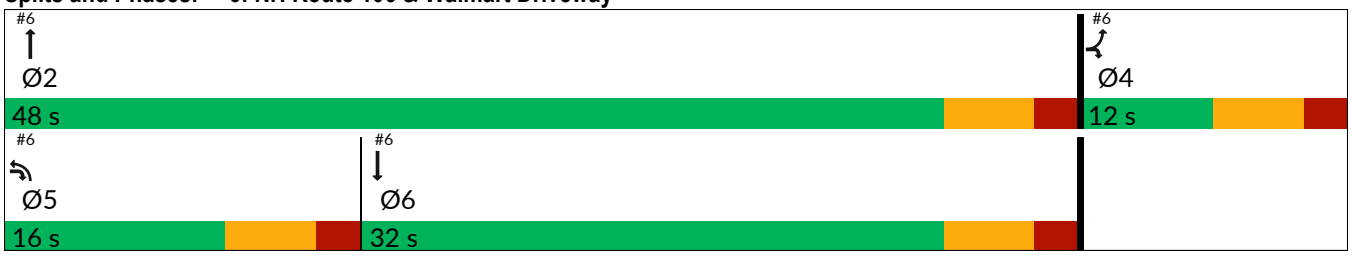
c Critical Lane Group

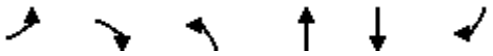


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	41	41	476	727	39
Future Volume (vph)	24	41	41	476	727	39
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1793	1553	1574	3374	3347	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1793	1553	1574	3374	3347	0
Satd. Flow (RTOR)		60			12	
Adj. Flow (vph)	35	60	52	603	845	45
Lane Group Flow (vph)	35	60	52	603	890	0
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Detector Phase	4	4 5	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		10.0	10.0	6.0	
Minimum Split (s)	12.0		16.0	16.0	12.0	
Total Split (s)	12.0		16.0	48.0	32.0	
Total Split (%)	20.0%		26.7%	80.0%	53.3%	
Maximum Green (s)	6.0		10.0	42.0	26.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.11	0.09	0.12	0.21	0.40	
Control Delay (s/veh)	23.3	4.2	19.9	2.2	9.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	23.3	4.2	19.9	2.2	9.4	
Queue Length 50th (ft)	11	0	15	28	120	
Queue Length 95th (ft)	26	11	38	35	160	
Internal Link Dist (ft)	488			959	1555	
Turn Bay Length (ft)		100	400			
Base Capacity (vph)	320	644	421	2874	2240	
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	0.11	0.09	0.12	0.21	0.40	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 48.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: NH Route 106 & Walmart Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	41	41	476	727	39
Future Volume (vph)	24	41	41	476	727	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1793	1553	1574	3374	3348	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1793	1553	1574	3374	3348	
Peak-hour factor, PHF	0.68	0.68	0.79	0.79	0.86	0.86
Adj. Flow (vph)	35	60	52	603	845	45
RTOR Reduction (vph)	0	42	0	0	5	0
Lane Group Flow (vph)	35	18	52	603	885	0
Heavy Vehicles (%)	4%	4%	7%	7%	7%	7%
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	3.0	14.0	5.0	39.0	28.0	
Effective Green, g (s)	5.0	16.0	7.0	41.0	30.0	
Actuated g/C Ratio	0.09	0.30	0.13	0.76	0.56	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	166	460	204	2561	1860	
v/s Ratio Prot	c0.02	0.01	0.03	c0.18	c0.26	
v/s Ratio Perm						
v/c Ratio	0.21	0.04	0.25	0.24	0.48	
Uniform Delay, d1	22.7	13.5	21.2	1.9	7.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.0	0.7	0.0	0.2	
Delay (s)	23.3	13.6	21.8	2.0	7.4	
Level of Service	C	B	C	A	A	
Approach Delay (s/veh)	17.2			3.5	7.4	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

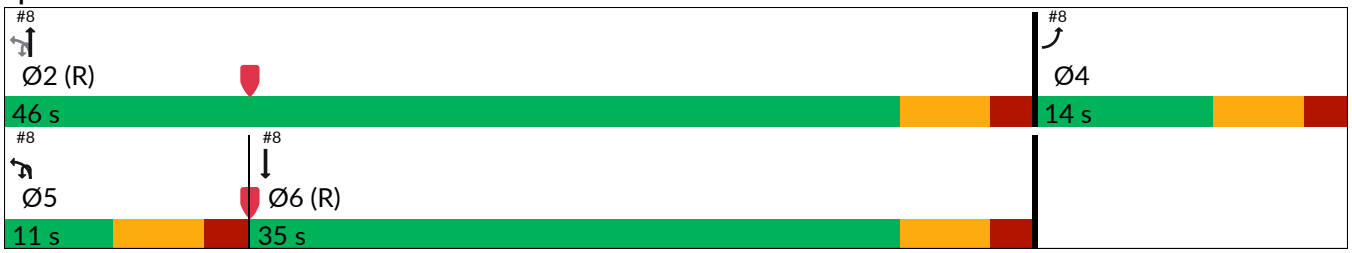
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	134	70	1	67	356	612	179
Future Volume (vph)	134	70	1	67	356	612	179
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	0.95
Frt	0.949					0.966	
Flt Protected	0.968			0.950			
Satd. Flow (prot)	3209	0	0	1678	3471	3273	0
Flt Permitted	0.968			0.242			
Satd. Flow (perm)	3209	0	0	427	3471	3273	0
Satd. Flow (RTOR)	85					94	
Adj. Flow (vph)	163	85	1	78	414	673	197
Lane Group Flow (vph)	248	0	0	79	414	870	0
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Detector Phase	4		5	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	11.0	
Total Split (s)	14.0		11.0	11.0	46.0	35.0	
Total Split (%)	23.3%		18.3%	18.3%	76.7%	58.3%	
Maximum Green (s)	8.0		5.0	5.0	40.0	29.0	
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)	-2.0			-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0	
Lead/Lag			Lead	Lead		Lag	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min	
v/c Ratio	0.42			0.17	0.17	0.45	
Control Delay (s/veh)	16.6			3.9	3.4	6.4	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay (s/veh)	16.6			3.9	3.4	6.4	
Queue Length 50th (ft)	27			7	22	47	
Queue Length 95th (ft)	49			16	32	66	
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			
Base Capacity (vph)	629			465	2465	2002	
Starvation Cap Reductn	0			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.39			0.17	0.17	0.43	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 11 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

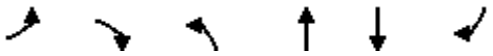
Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	134	70	1	67	356	612	179
Future Volume (vph)	134	70	1	67	356	612	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0			4.0	4.0	4.0	
Lane Util. Factor	0.97			1.00	0.95	0.95	
Frt	0.95			1.00	1.00	0.97	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	3208			1678	3471	3273	
Flt Permitted	0.97			0.24	1.00	1.00	
Satd. Flow (perm)	3208			428	3471	3273	
Peak-hour factor, PHF	0.82	0.82	0.86	0.86	0.86	0.91	0.91
Adj. Flow (vph)	163	85	1	78	414	673	197
RTOR Reduction (vph)	71	0	0	0	0	43	0
Lane Group Flow (vph)	177	0	0	79	414	827	0
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Actuated Green, G (s)	7.8			40.2	40.2	30.5	
Effective Green, g (s)	9.8			42.2	42.2	32.5	
Actuated g/C Ratio	0.16			0.70	0.70	0.54	
Clearance Time (s)	6.0			6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	3.0	
Lane Grp Cap (vph)	523			419	2441	1772	
v/s Ratio Prot	c0.06			0.02	c0.12	c0.25	
v/s Ratio Perm				0.11			
v/c Ratio	0.34			0.19	0.17	0.47	
Uniform Delay, d1	22.2			3.6	3.0	8.4	
Progression Factor	1.00			1.00	1.00	0.73	
Incremental Delay, d2	0.4			0.2	0.2	0.8	
Delay (s)	22.6			3.8	3.1	7.0	
Level of Service	C			A	A	A	
Approach Delay (s/veh)	22.6				3.3	7.0	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

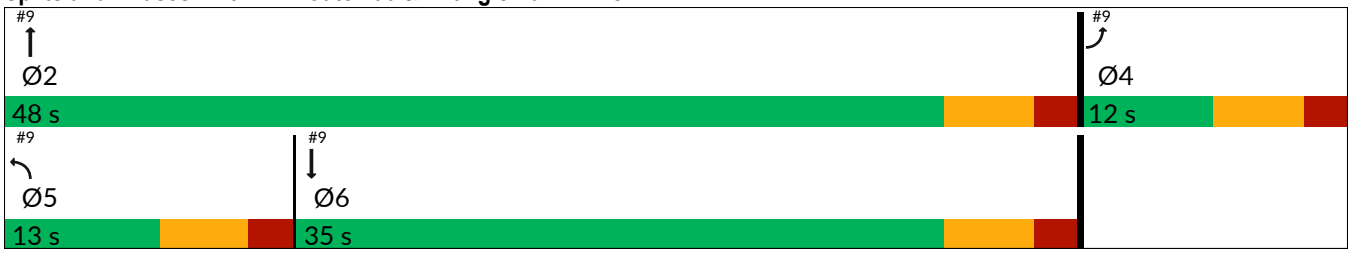
c Critical Lane Group

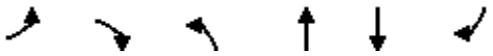


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	66	99	420	1008	46
Future Volume (vph)	4	66	99	420	1008	46
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.873				0.994	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1785	0	1834	3438	3553	0
Flt Permitted	0.997		0.950			
Satd. Flow (perm)	1785	0	1834	3438	3553	0
Satd. Flow (RTOR)	99				11	
Adj. Flow (vph)	6	99	121	512	1172	53
Lane Group Flow (vph)	105	0	121	512	1225	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	12.0		13.0	48.0	35.0	
Total Split (%)	20.0%		21.7%	80.0%	58.3%	
Maximum Green (s)	6.0		7.0	42.0	29.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.29		0.39	0.19	0.57	
Control Delay (s/veh)	9.4		27.2	2.5	10.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	9.4		27.2	2.5	10.9	
Queue Length 50th (ft)	2		42	23	156	
Queue Length 95th (ft)	20		79	31	203	
Internal Link Dist (ft)	1073			1451	1013	
Turn Bay Length (ft)			150			
Base Capacity (vph)	364		325	2740	2177	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.29		0.37	0.19	0.56	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 53.7
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: NH Route 106 & Triangle Park Drive

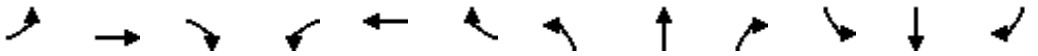




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	66	99	420	1008	46
Future Volume (vph)	4	66	99	420	1008	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.87		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1785		1834	3438	3551	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	1785		1834	3438	3551	
Peak-hour factor, PHF	0.67	0.67	0.82	0.82	0.86	0.86
Adj. Flow (vph)	6	99	121	512	1172	53
RTOR Reduction (vph)	88	0	0	0	5	0
Lane Group Flow (vph)	17	0	121	512	1220	0
Heavy Vehicles (%)	5%	5%	5%	5%	1%	1%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	4.4		5.1	40.2	29.1	
Effective Green, g (s)	6.4		7.1	42.2	31.1	
Actuated g/C Ratio	0.11		0.13	0.75	0.55	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	201		230	2563	1951	
v/s Ratio Prot	c0.01		c0.07	0.15	c0.34	
v/s Ratio Perm						
v/c Ratio	0.09		0.53	0.20	0.63	
Uniform Delay, d1	22.5		23.2	2.2	8.8	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2		2.2	0.0	0.6	
Delay (s)	22.7		25.3	2.2	9.4	
Level of Service	C		C	A	A	
Approach Delay (s/veh)	22.7			6.6	9.4	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

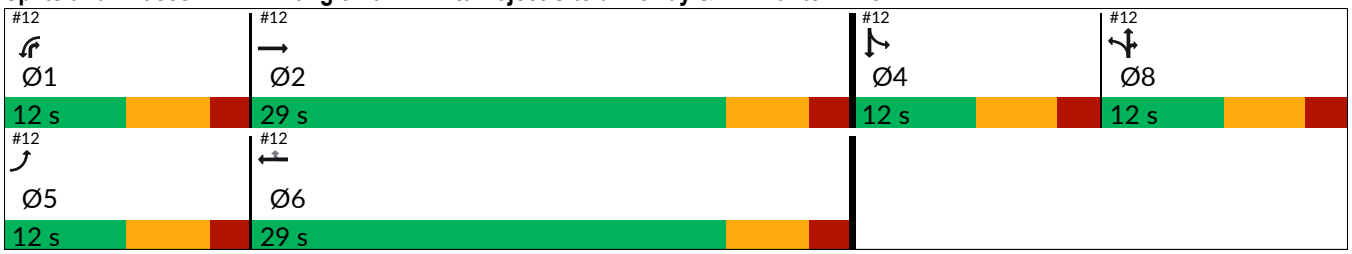


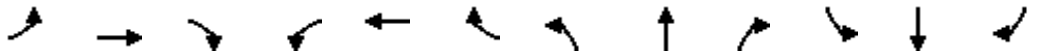
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Future Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.954				0.850			0.850		0.876	
Flt Protected	0.950			0.950				0.960		0.950	0.995	
Satd. Flow (prot)	1787	3296	0	1694	1845	1568	0	1788	1583	1681	1542	0
Flt Permitted	0.950			0.950				0.960		0.950	0.995	
Satd. Flow (perm)	1787	3296	0	1694	1845	1568	0	1788	1583	1681	1542	0
Satd. Flow (RTOR)		87				252			151		48	
Adj. Flow (vph)	75	195	87	57	199	72	44	9	49	62	4	48
Lane Group Flow (vph)	75	282	0	57	199	72	0	53	49	56	58	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	12.0	29.0		12.0	29.0	29.0	12.0	12.0		12.0	12.0	
Total Split (%)	18.5%	44.6%		18.5%	44.6%	44.6%	18.5%	18.5%		18.5%	18.5%	
Maximum Green (s)	6.0	23.0		6.0	23.0	23.0	6.0	6.0		6.0	6.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	0.0		-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	6.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.22	0.18		0.18	0.23	0.09		0.15	0.08	0.17	0.17	
Control Delay (s/veh)	22.5	10.1		22.3	15.4	0.2		22.0	0.3	22.3	11.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	22.5	10.1		22.3	15.4	0.2		22.0	0.3	22.3	11.2	
Queue Length 50th (ft)	21	25		16	54	0		15	0	16	3	
Queue Length 95th (ft)	48	40		35	73	0		38	0	49	32	
Internal Link Dist (ft)		981			380			958			380	
Turn Bay Length (ft)	250			250		100			170	250		
Base Capacity (vph)	349	2049		331	1128	992		349	618	328	340	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.21	0.14		0.17	0.18	0.07		0.15	0.08	0.17	0.17	

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 45
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive

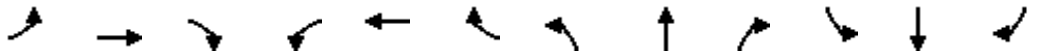




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Future Volume (vph)	57	148	66	39	135	49	34	7	38	56	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	6.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	0.95		1.00	1.00	0.85		1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3295		1694	1845	1568		1789	1583	1681	1542	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3295		1694	1845	1568		1789	1583	1681	1542	
Peak-hour factor, PHF	0.76	0.76	0.76	0.68	0.68	0.68	0.77	0.77	0.77	0.90	0.90	0.90
Adj. Flow (vph)	75	195	87	57	199	72	44	9	49	62	4	48
RTOR Reduction (vph)	0	54	0	0	0	48	0	0	36	0	42	0
Lane Group Flow (vph)	75	228	0	57	199	24	0	53	13	56	16	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Actuated Green, G (s)	2.9	17.5		2.9	17.5	17.5		2.9	11.8	4.6	4.6	
Effective Green, g (s)	4.9	19.5		4.9	19.5	17.5		4.9	13.8	6.6	6.6	
Actuated g/C Ratio	0.09	0.38		0.09	0.38	0.34		0.09	0.27	0.13	0.13	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	168	1238		159	693	528		168	420	213	196	
v/s Ratio Prot	c0.04	0.07		0.03	c0.11			c0.03	0.01	c0.03	0.01	
v/s Ratio Perm						0.02						
v/c Ratio	0.45	0.18		0.36	0.29	0.05		0.32	0.03	0.26	0.08	
Uniform Delay, d1	22.2	10.9		22.0	11.3	11.6		21.9	14.1	20.5	20.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.1		1.4	0.2	0.0		1.1	0.0	0.7	0.2	
Delay (s)	24.1	10.9		23.4	11.6	11.6		23.0	14.1	21.1	20.2	
Level of Service	C	B		C	B	B		C	B	C	C	
Approach Delay (s/veh)		13.7			13.6			18.7			20.6	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Future Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.941				0.850			0.850		0.984	
Flt Protected		0.971			0.950		0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1829	1636	1787	3455	1546	3351	3400	0
Flt Permitted		0.751			0.700		0.950			0.950		
Satd. Flow (perm)	0	2551	0	0	1347	1636	1787	3455	1546	3351	3400	0
Satd. Flow (RTOR)		218				131			131		18	
Adj. Flow (vph)	51	0	33	118	0	79	20	253	43	66	257	30
Lane Group Flow (vph)	0	84	0	0	118	79	20	253	43	66	287	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	30.0	30.0		30.0	30.0	16.0	15.0	29.0	29.0	16.0	30.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	21.3%	20.0%	38.7%	38.7%	21.3%	40.0%	
Maximum Green (s)	24.0	24.0		24.0	24.0	10.0	9.0	23.0	23.0	10.0	24.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	Min	
v/c Ratio		0.13			0.47	0.13	0.10	0.12	0.04	0.15	0.12	
Control Delay (s/veh)		0.7			32.6	1.2	30.5	9.9	0.1	29.5	6.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		0.7			32.6	1.2	30.5	9.9	0.1	29.5	6.7	
Queue Length 50th (ft)		0			50	0	9	30	0	11	17	
Queue Length 95th (ft)		0			30	0	27	55	0	27	58	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		1026			466	615	262	2079	982	536	2437	
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		0.08			0.25	0.13	0.08	0.12	0.04	0.12	0.12	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 58 (77%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 40

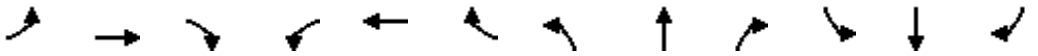
Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Future Volume (vph)	40	0	26	39	0	26	17	220	37	59	231	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3297			1829	1636	1787	3455	1546	3351	3401	
Flt Permitted		0.75			0.70	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2552			1347	1636	1787	3455	1546	3351	3401	
Peak-hour factor, PHF	0.78	0.78	0.78	0.33	0.33	0.33	0.87	0.87	0.87	0.90	0.90	0.90
Adj. Flow (vph)	51	0	33	118	0	79	20	253	43	66	257	30
RTOR Reduction (vph)	0	70	0	0	0	53	0	0	21	0	7	0
Lane Group Flow (vph)	0	14	0	0	118	26	20	253	22	66	280	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		10.6			10.6	20.8	1.6	36.2	36.2	10.2	44.8	
Effective Green, g (s)		12.6			12.6	24.8	3.6	38.2	38.2	12.2	46.8	
Actuated g/C Ratio		0.17			0.17	0.33	0.05	0.51	0.51	0.16	0.62	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		428			226	628	85	1759	787	545	2122	
v/s Ratio Prot						0.01	c0.01	c0.07	0.01	0.02	c0.08	
v/s Ratio Perm		0.01			c0.09	0.01						
v/c Ratio		0.03			0.52	0.04	0.24	0.14	0.03	0.12	0.13	
Uniform Delay, d1		26.1			28.5	17.0	34.4	9.7	9.2	26.8	5.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.15	
Incremental Delay, d2		0.0			2.2	0.0	1.4	0.2	0.1	0.1	0.0	
Delay (s)		26.1			30.6	17.1	35.8	9.9	9.2	26.8	6.7	
Level of Service		C			C	B	D	A	A	C	A	
Approach Delay (s/veh)		26.1			25.2			11.5			10.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



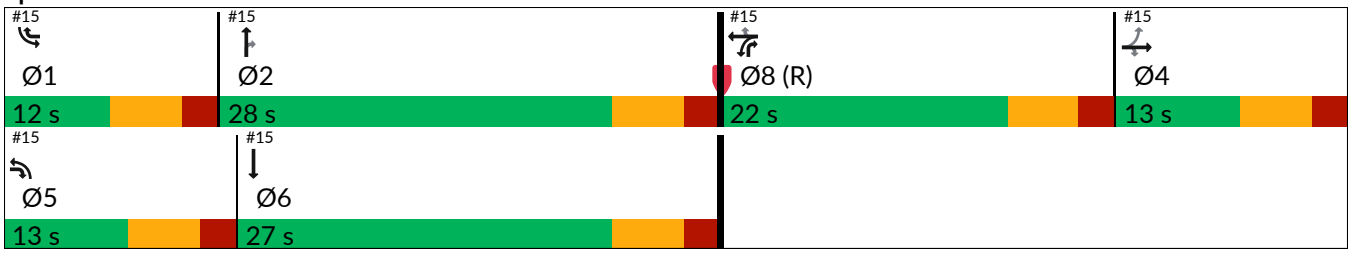
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Future Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.990		0.950	0.961		0.950			0.950		
Satd. Flow (prot)	0	1818	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Flt Permitted		0.889		0.950	0.961		0.950			0.950		
Satd. Flow (perm)	0	1633	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Satd. Flow (RTOR)			131			131			289		3	
Adj. Flow (vph)	8	33	75	287	30	44	51	343	289	63	404	9
Lane Group Flow (vph)	0	41	75	158	159	44	51	343	289	63	413	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	13.0	22.0	22.0	12.0	13.0	28.0	22.0	12.0	27.0	
Total Split (%)	17.3%	17.3%	17.3%	29.3%	29.3%	16.0%	17.3%	37.3%	29.3%	16.0%	36.0%	
Maximum Green (s)	7.0	7.0	7.0	16.0	16.0	6.0	7.0	22.0	16.0	6.0	21.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Min	C-Min	None	None	Min	C-Min	None	Min	
v/c Ratio		0.22	0.17	0.23	0.22	0.05	0.25	0.43	0.23	0.17	0.55	
Control Delay (s/veh)		32.8	1.9	15.0	14.8	0.1	33.2	25.9	1.4	38.8	23.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		32.8	1.9	15.0	14.8	0.1	33.2	25.9	1.4	38.8	23.8	
Queue Length 50th (ft)		18	0	36	36	0	22	73	0	10	95	
Queue Length 95th (ft)		40	2	58	60	0	47	88	17	32	52	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		199	456	701	734	890	216	1105	1233	375	1048	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.21	0.16	0.23	0.22	0.05	0.24	0.31	0.23	0.17	0.39	

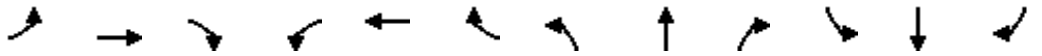
Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 41 (55%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Future Volume (vph)	6	26	59	227	24	35	41	274	231	51	327	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1819	1561	1641	1717	1492	1787	3455	1599	3433	3410	
Flt Permitted		0.89	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1632	1561	1641	1717	1492	1787	3455	1599	3433	3410	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.81	0.81	0.81
Adj. Flow (vph)	8	33	75	287	30	44	51	342	289	63	404	9
RTOR Reduction (vph)	0	0	61	0	0	23	0	0	113	0	2	0
Lane Group Flow (vph)	0	41	14	158	159	21	51	343	176	63	411	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		4.4	10.0	26.4	26.4	31.4	5.6	15.2	41.6	5.0	14.6	
Effective Green, g (s)		6.4	14.0	28.4	28.4	35.4	7.6	17.2	45.6	7.0	16.6	
Actuated g/C Ratio		0.09	0.19	0.38	0.38	0.47	0.10	0.23	0.61	0.09	0.22	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		139	374	621	650	704	181	792	1057	320	754	
v/s Ratio Prot			0.00	c0.10	0.09	0.00	c0.03	0.10	0.06	0.02	c0.12	
v/s Ratio Perm		c0.03	0.01			0.01			0.05			
v/c Ratio		0.29	0.04	0.25	0.24	0.03	0.28	0.43	0.17	0.20	0.54	
Uniform Delay, d1		32.2	25.0	16.0	16.0	10.6	31.2	24.7	6.4	31.4	25.9	
Progression Factor		1.00	1.00	0.75	0.75	1.00	1.00	1.00	1.00	1.23	0.83	
Incremental Delay, d2		1.2	0.0	1.0	0.9	0.0	0.9	0.4	0.1	0.3	0.8	
Delay (s)		33.4	25.0	12.9	12.8	10.6	32.0	25.1	6.5	39.1	22.3	
Level of Service		C	C	B	B	B	C	C	A	D	C	
Approach Delay (s/veh)		28.0			12.6			17.7			24.5	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

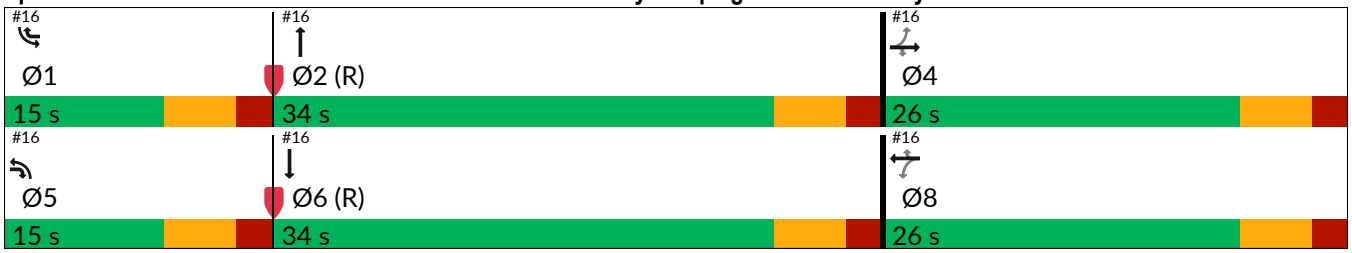
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Future Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.974			0.981	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1671	1495	0	1829	1636	1829	3332	0	3400	3324	0
Flt Permitted		0.722			0.731		0.950			0.950		
Satd. Flow (perm)	0	1270	1495	0	1407	1636	1829	3332	0	3400	3324	0
Satd. Flow (RTOR)			44			97		39			25	
Adj. Flow (vph)	40	0	39	54	0	97	66	329	68	140	375	54
Lane Group Flow (vph)	0	40	39	0	54	97	66	397	0	140	429	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	26.0	26.0	15.0	26.0	26.0	15.0	15.0	34.0		15.0	34.0	
Total Split (%)	34.7%	34.7%	20.0%	34.7%	34.7%	20.0%	20.0%	45.3%		20.0%	45.3%	
Maximum Green (s)	20.0	20.0	9.0	20.0	20.0	9.0	9.0	28.0		9.0	28.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.23	0.09		0.28	0.19	0.27	0.19		0.30	0.19	
Control Delay (s/veh)		31.1	5.0		31.8	4.6	24.4	16.9		29.0	6.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.1	5.0		31.8	4.6	24.4	16.9		29.0	6.5	
Queue Length 50th (ft)		18	0		23	0	33	82		30	47	
Queue Length 95th (ft)		45	16		53	26	54	73		40	74	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		372	448		412	524	278	2107		515	2246	
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		0.11	0.09		0.13	0.19	0.24	0.19		0.27	0.19	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 15 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Future Volume (vph)	36	0	35	49	0	87	45	224	46	112	300	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671	1495		1829	1636	1829	3333		3400	3324	
Flt Permitted		0.72	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1270	1495		1407	1636	1829	3333		3400	3324	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.68	0.68	0.68	0.80	0.80	0.80
Adj. Flow (vph)	40	0	39	54	0	97	66	329	68	140	375	54
RTOR Reduction (vph)	0	0	30	0	0	73	0	16	0	0	10	0
Lane Group Flow (vph)	0	40	9	0	54	24	66	381	0	140	419	0
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		5.9	12.9		5.9	14.3	7.0	42.7		8.4	44.1	
Effective Green, g (s)		7.9	16.9		7.9	18.3	9.0	44.7		10.4	46.1	
Actuated g/C Ratio		0.11	0.23		0.11	0.24	0.12	0.60		0.14	0.61	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		133	416		148	486	219	1986		471	2043	
v/s Ratio Prot			0.00			0.01	0.04	0.11		c0.04	c0.13	
v/s Ratio Perm		0.03	0.00		c0.04	0.01						
v/c Ratio		0.30	0.02		0.36	0.05	0.30	0.19		0.30	0.21	
Uniform Delay, d1		31.0	22.6		31.2	21.7	30.1	6.9		29.0	6.4	
Progression Factor		1.00	1.00		1.00	1.00	0.77	2.37		0.96	0.88	
Incremental Delay, d2		1.3	0.0		1.5	0.0	0.8	0.2		0.4	0.2	
Delay (s)		32.3	22.6		32.7	21.7	23.8	16.6		28.1	5.8	
Level of Service		C	C		C	C	C	B		C	A	
Approach Delay (s/veh)		27.5			25.7			17.6			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

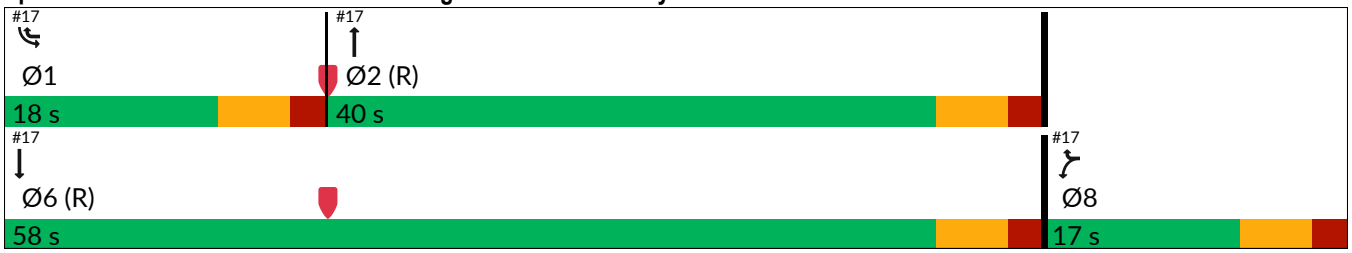
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	12	334	14	17	444
Future Volume (vph)	11	12	334	14	17	444
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	2006	1794	3401	0	1770	3421
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	2006	1794	3401	0	1770	3421
Satd. Flow (RTOR)		13	8			
Adj. Flow (vph)	12	13	363	15	20	529
Lane Group Flow (vph)	12	13	378	0	20	529
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Detector Phase	8	8 1	2		1	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		6.0	10.0
Minimum Split (s)	12.0		16.0		12.0	16.0
Total Split (s)	17.0		40.0		18.0	58.0
Total Split (%)	22.7%		53.3%		24.0%	77.3%
Maximum Green (s)	11.0		34.0		12.0	52.0
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.05	0.04	0.13		0.10	0.17
Control Delay (s/veh)	30.3	10.3	3.5		30.5	1.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	30.3	10.3	3.5		30.5	1.3
Queue Length 50th (ft)	5	0	0		9	0
Queue Length 95th (ft)	20	12	56		26	33
Internal Link Dist (ft)	358		266			887
Turn Bay Length (ft)					360	
Base Capacity (vph)	347	465	2857		330	3117
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	0.03	0.03	0.13		0.06	0.17

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 18 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

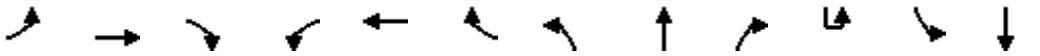
Control Type: Actuated-Coordinated

Splits and Phases: 17: NH Route 9 & Regal Concord Driveway



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	12	334	14	17	444
Future Volume (vph)	11	12	334	14	17	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	12	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2006	1794	3401		1770	3421
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	2006	1794	3401		1770	3421
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.84	0.84
Adj. Flow (vph)	12	13	363	15	20	529
RTOR Reduction (vph)	0	11	2	0	0	0
Lane Group Flow (vph)	12	2	376	0	20	529
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Actuated Green, G (s)	2.7	11.7	51.3		3.0	60.3
Effective Green, g (s)	4.7	13.7	53.3		5.0	62.3
Actuated g/C Ratio	0.06	0.18	0.71		0.07	0.83
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	125	327	2416		118	2841
v/s Ratio Prot	c0.01	0.00	0.11		0.01	c0.15
v/s Ratio Perm						
v/c Ratio	0.10	0.01	0.16		0.17	0.19
Uniform Delay, d1	33.1	25.1	3.5		33.0	1.3
Progression Factor	1.00	1.00	0.93		1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1		0.7	0.1
Delay (s)	33.5	25.1	3.4		33.7	1.4
Level of Service	C	C	A		C	A
Approach Delay (s/veh)	29.1		3.4			2.6
Approach LOS	C		A			A

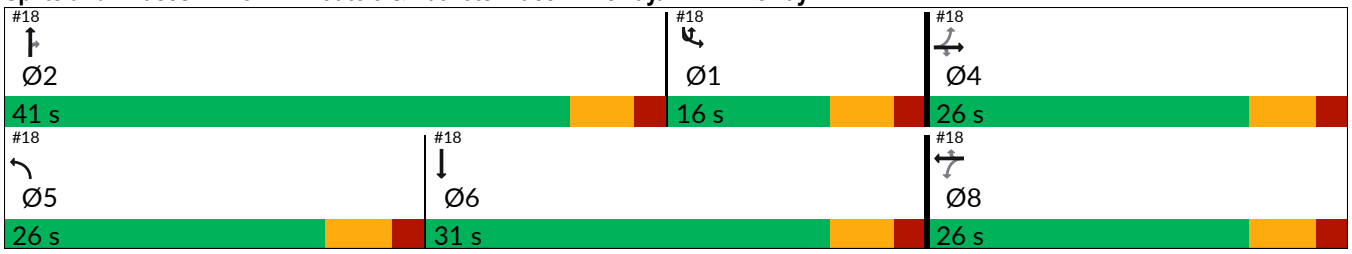
Intersection Summary			
HCM 2000 Control Delay (s/veh)	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Future Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.993
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3332
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3332
Satd. Flow (RTOR)			197			197			118			6
Adj. Flow (vph)	3	1	9	44	2	3	18	436	14	1	6	556
Lane Group Flow (vph)	0	4	9	0	46	3	18	436	14	0	7	582
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.12	0.01	0.04	0.16	0.01		0.02	0.22
Control Delay (s/veh)		14.3	0.0		14.3	0.0	15.5	5.7	0.0		14.4	5.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		14.3	0.0		14.3	0.0	15.5	5.7	0.0		14.4	5.2
Queue Length 50th (ft)		1	0		6	0	2	0	0		1	0
Queue Length 95th (ft)		6	0		24	0	16	68	0		9	87
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		924	1117		987	1077	1148	3198	1439		614	2760
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.05	0.00	0.02	0.14	0.01		0.01	0.21

Intersection Summary
Cycle Length: 83
Actuated Cycle Length: 36
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	26
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

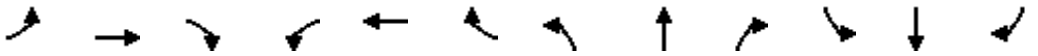
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Future Volume (vph)	2	1	6	27	1	2	13	323	10	1	5	428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3333
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3333
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.74	0.74	0.74	0.77	0.77	0.77
Adj. Flow (vph)	3	1	9	44	2	3	18	436	14	1	6	556
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	6	0	0	3
Lane Group Flow (vph)	0	4	1	0	46	0	18	436	8	0	7	579
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	0.9	22.8	22.8		1.3	23.2
Effective Green, g (s)		4.7	4.7		4.7	4.7	2.9	24.8	24.8		3.3	25.2
Actuated g/C Ratio		0.10	0.10		0.10	0.10	0.06	0.55	0.55		0.07	0.56
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		149	169		159	162	114	1893	847		127	1874
v/s Ratio Prot							0.01	c0.13			0.00	c0.17
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.01			
v/c Ratio		0.03	0.01		0.29	0.00	0.16	0.23	0.01		0.06	0.31
Uniform Delay, d1		18.0	18.0		18.5	18.0	19.8	5.1	4.5		19.3	5.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		1.0	0.0	0.7	0.1	0.0		0.2	0.1
Delay (s)		18.1	18.0		19.5	18.0	20.4	5.2	4.5		19.5	5.3
Level of Service		B	B		B	B	C	A	A		B	A
Approach Delay (s/veh)		18.0			19.4			5.7				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.77
Adj. Flow (vph)	26
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

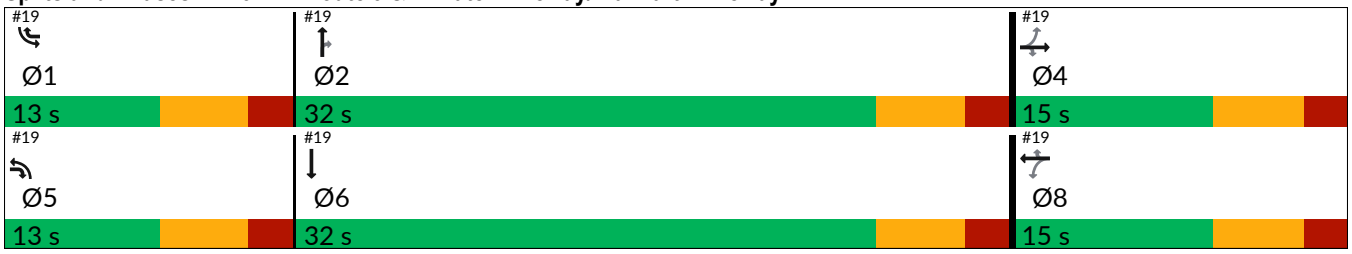
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Future Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.990	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3455	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3455	0
Satd. Flow (RTOR)			77			55			164		16	
Adj. Flow (vph)	57	13	77	25	7	48	43	274	14	61	437	30
Lane Group Flow (vph)	0	70	77	0	32	48	43	274	14	61	467	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	15.0	15.0	13.0	15.0	15.0	13.0	13.0	32.0	32.0	13.0	32.0	
Total Split (%)	25.0%	25.0%	21.7%	25.0%	25.0%	21.7%	21.7%	53.3%	53.3%	21.7%	53.3%	
Maximum Green (s)	9.0	9.0	7.0	9.0	9.0	7.0	7.0	26.0	26.0	7.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.19	0.11		0.10	0.07	0.10	0.13	0.01	0.15	0.23	
Control Delay (s/veh)		16.2	2.6		15.7	2.6	16.7	9.6	0.0	16.9	9.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		16.2	2.6		15.7	2.6	16.7	9.6	0.0	16.9	9.4	
Queue Length 50th (ft)		14	0		6	0	9	26	0	12	45	
Queue Length 95th (ft)		42	14		24	10	28	43	0	38	73	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		444	757		410	707	459	2634	1258	433	2638	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.16	0.10		0.08	0.07	0.09	0.10	0.01	0.14	0.18	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 38.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Future Volume (vph)	49	11	66	21	6	40	34	219	11	51	367	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3456	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3456	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	57	13	77	25	7	48	42	274	14	61	437	30
RTOR Reduction (vph)	0	0	57	0	0	35	0	0	8	0	9	0
Lane Group Flow (vph)	0	70	20	0	32	13	43	274	6	61	458	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.1	7.5		4.1	7.5	3.4	18.3	18.3	3.4	18.3	
Effective Green, g (s)		6.1	11.5		6.1	11.5	5.4	20.3	20.3	5.4	20.3	
Actuated g/C Ratio		0.14	0.26		0.14	0.26	0.12	0.46	0.46	0.12	0.46	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		196	571		182	541	220	1601	741	207	1601	
v/s Ratio Prot			0.00			0.00	0.02	0.08		c0.04	c0.13	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.36	0.04		0.18	0.02	0.20	0.17	0.01	0.29	0.29	
Uniform Delay, d1		17.1	12.0		16.6	12.0	17.2	6.8	6.3	17.5	7.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.5	0.0	0.4	0.1	0.0	0.8	0.1	
Delay (s)		18.2	12.0		17.1	12.0	17.7	6.9	6.3	18.3	7.4	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		15.0			14.0			8.3			8.6	
Approach LOS		B			B			A			A	

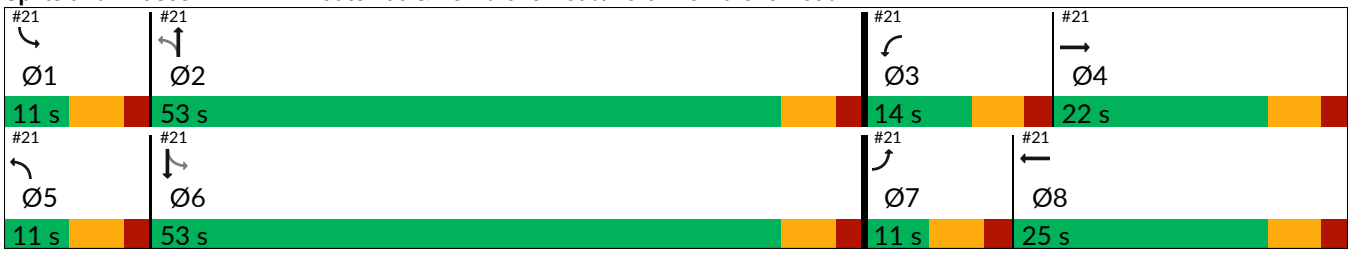
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

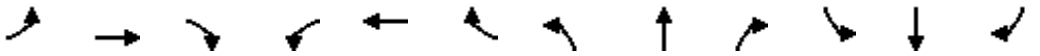
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Future Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.876			0.939			0.992			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	1648	0	1770	1574	0	1776	3411	0	1829	3468	0
Flt Permitted	0.950			0.950			0.125			0.387		
Satd. Flow (perm)	3467	1648	0	1770	1574	0	234	3411	0	745	3468	0
Satd. Flow (RTOR)		122			31			8			24	
Adj. Flow (vph)	54	26	122	73	99	68	75	561	31	46	999	155
Lane Group Flow (vph)	54	148	0	73	167	0	75	592	0	46	1154	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	11.0	22.0		14.0	25.0		11.0	53.0		11.0	53.0	
Total Split (%)	11.0%	22.0%		14.0%	25.0%		11.0%	53.0%		11.0%	53.0%	
Maximum Green (s)	5.0	16.0		8.0	19.0		5.0	47.0		5.0	47.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
v/c Ratio	0.15	0.39		0.30	0.45		0.26	0.34		0.09	0.69	
Control Delay (s/veh)	40.9	14.0		41.8	30.5		10.0	13.3		8.1	19.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	40.9	14.0		41.8	30.5		10.0	13.3		8.1	19.1	
Queue Length 50th (ft)	13	12		36	65		16	103		9	242	
Queue Length 95th (ft)	33	55		74	110		34	140		26	351	
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200			250		
Base Capacity (vph)	367	538		268	521		293	2245		521	2288	
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	0.15	0.28		0.27	0.32		0.26	0.26		0.09	0.50	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 76.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

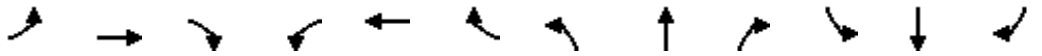




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Future Volume (vph)	44	21	100	54	73	50	60	449	25	41	889	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1649		1770	1574		1776	3411		1829	3468	
Flt Permitted	0.95	1.00		0.95	1.00		0.13	1.00		0.39	1.00	
Satd. Flow (perm)	3467	1649		1770	1574		235	3411		745	3468	
Peak-hour factor, PHF	0.82	0.82	0.82	0.74	0.74	0.74	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	54	26	122	73	99	68	75	561	31	46	999	155
RTOR Reduction (vph)	0	101	0	0	25	0	0	4	0	0	13	0
Lane Group Flow (vph)	54	47	0	73	142	0	75	588	0	46	1141	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.5	11.7		5.6	14.8		40.3	36.7		38.1	35.6	
Effective Green, g (s)	4.5	13.7		7.6	16.8		44.3	38.7		42.1	37.6	
Actuated g/C Ratio	0.06	0.17		0.09	0.21		0.55	0.48		0.52	0.47	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	280		167	328		236	1639		450	1619	
v/s Ratio Prot	0.02	0.03		c0.04	c0.09		c0.02	0.17		0.01	c0.33	
v/s Ratio Perm							0.15			0.05		
v/c Ratio	0.28	0.17		0.44	0.43		0.32	0.36		0.10	0.70	
Uniform Delay, d1	36.4	28.5		34.4	27.7		11.2	13.1		9.5	17.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.3		1.8	0.9		0.8	0.1		0.1	1.4	
Delay (s)	37.2	28.8		36.3	28.6		11.9	13.2		9.6	18.5	
Level of Service	D	C		D	C		B	B		A	B	
Approach Delay (s/veh)		31.1			31.0			13.1			18.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Future Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1718	0	1736	1930	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.455			0.833			0.188			0.487		
Satd. Flow (perm)	848	1718	0	1522	1930	0	342	1818	1599	916	1818	1546
Satd. Flow (RTOR)		22			19				133			345
Adj. Flow (vph)	157	156	68	10	23	19	132	485	43	122	632	345
Lane Group Flow (vph)	157	224	0	10	42	0	132	485	43	122	632	345
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	22.0		11.0	11.0		11.0	48.0	48.0	37.0	37.0	37.0
Total Split (%)	12.2%	24.4%		12.2%	12.2%		12.2%	53.3%	53.3%	41.1%	41.1%	41.1%
Maximum Green (s)	5.0	16.0		5.0	5.0		5.0	42.0	42.0	31.0	31.0	31.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.49	0.54		0.06	0.19		0.36	0.41	0.04	0.28	0.73	0.38
Control Delay (s/veh)	27.3	25.6		29.6	21.6		7.8	7.4	0.1	13.2	20.3	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.3	25.6		29.6	21.6		7.8	7.4	0.1	13.2	20.3	2.7
Queue Length 50th (ft)	56	74		4	10		20	93	0	31	210	0
Queue Length 95th (ft)	97	126		13	26		36	134	0	65	336	40
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	322	487		162	223		369	1219	1116	460	915	949
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.46		0.06	0.19		0.36	0.40	0.04	0.27	0.69	0.36

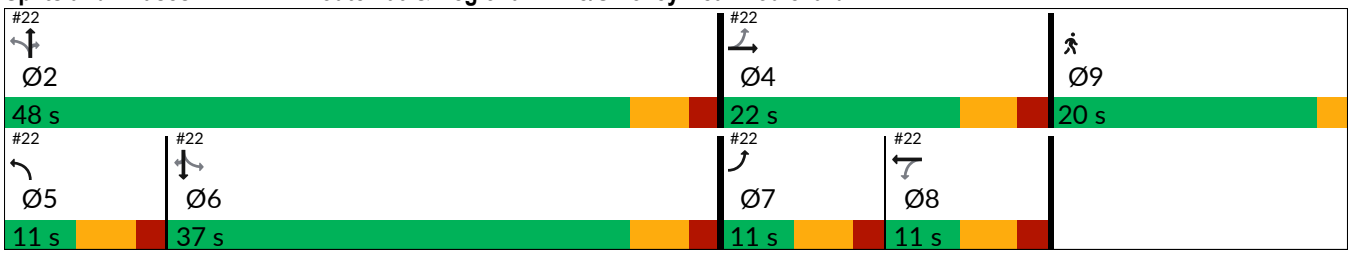
Intersection Summary
Cycle Length: 90

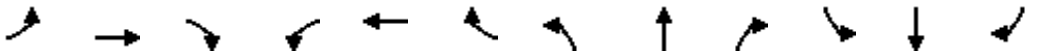
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 66.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

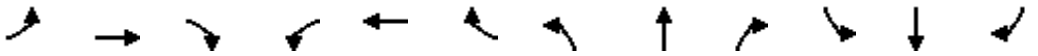




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Future Volume (vph)	132	131	57	7	16	13	111	407	36	115	594	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1930		1728	1818	1599	1787	1818	1546
Flt Permitted	0.45	1.00		0.83	1.00		0.19	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	847	1719		1522	1930		342	1818	1599	916	1818	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.69	0.69	0.69	0.84	0.84	0.84	0.94	0.94	0.94
Adj. Flow (vph)	157	156	68	10	23	19	132	485	43	122	632	345
RTOR Reduction (vph)	0	16	0	0	18	0	0	0	16	0	0	185
Lane Group Flow (vph)	157	208	0	10	24	0	132	485	27	122	632	160
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	15.8	15.8		2.8	2.8		40.7	40.7	40.7	29.7	29.7	29.7
Effective Green, g (s)	17.8	17.8		4.8	4.8		42.7	42.7	42.7	31.7	31.7	31.7
Actuated g/C Ratio	0.26	0.26		0.07	0.07		0.62	0.62	0.62	0.46	0.46	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	341	446		106	135		354	1133	996	423	841	715
v/s Ratio Prot	0.06	c0.12			0.01		0.04	c0.27			c0.35	
v/s Ratio Perm	0.06			0.01			0.19		0.02	0.13		0.10
v/c Ratio	0.46	0.47		0.09	0.18		0.37	0.43	0.03	0.29	0.75	0.22
Uniform Delay, d1	20.7	21.3		29.8	30.0		8.8	6.6	4.9	11.4	15.2	11.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.8		0.4	0.6		0.7	0.3	0.0	0.4	3.8	0.2
Delay (s)	21.7	22.1		30.2	30.6		9.4	6.9	5.0	11.8	19.0	11.2
Level of Service	C	C		C	C		A	A	A	B	B	B
Approach Delay (s/veh)		21.9			30.6			7.3			15.7	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Future Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	3433	3300	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.851			0.851	
Satd. Flow (perm)	3433	3300	0	1689	3196	0	0	1617	1830	0	1461	1459
Satd. Flow (RTOR)					3				155			353
Adj. Flow (vph)	716	1043	4	0	1159	31	2	0	2	36	0	353
Lane Group Flow (vph)	716	1047	0	0	1190	0	0	2	2	0	36	353
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	31.0	71.0		11.0	51.0		11.0	11.0	11.0	11.0	11.0	31.0
Total Split (%)	25.8%	59.2%		9.2%	42.5%		9.2%	9.2%	9.2%	9.2%	9.2%	25.8%
Maximum Green (s)	25.0	65.0		5.0	45.0		5.0	5.0	5.0	5.0	5.0	25.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.67	0.35			0.72			0.01	0.01		0.28	0.45
Control Delay (s/veh)	29.9	1.6			19.3			40.0	0.0		46.2	4.2
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	29.9	1.6			19.3			40.0	0.0		46.2	4.2
Queue Length 50th (ft)	197	51			287			1	0		22	0
Queue Length 95th (ft)	221	54			275			5	0		52	45
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	1162	2948			1885			141	302		128	805
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	0.62	0.36			0.63			0.01	0.01		0.28	0.44

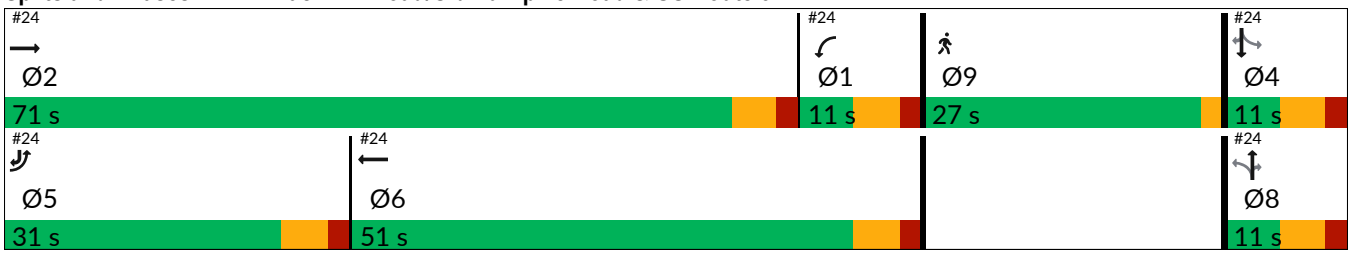
Intersection Summary
Cycle Length: 120

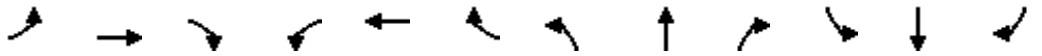
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 82.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

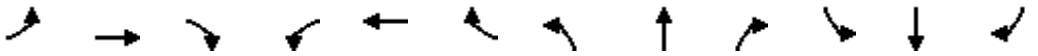




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Future Volume (vph)	566	824	3	0	869	23	1	0	1	31	0	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3301			3196			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.85	1.00		0.85	1.00
Satd. Flow (perm)	3433	3301			3196			1617	1830		1461	1459
Peak-hour factor, PHF	0.79	0.79	0.79	0.75	0.75	0.75	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	716	1043	4	0	1159	31	2	0	2	36	0	353
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	2	0	0	227
Lane Group Flow (vph)	716	1047	0	0	1189	0	0	2	0	0	36	126
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Actuated Green, G (s)	23.6	70.2			40.6			2.7	2.7		2.7	26.3
Effective Green, g (s)	25.6	72.2			42.6			4.7	4.7		4.7	30.3
Actuated g/C Ratio	0.30	0.85			0.50			0.06	0.06		0.06	0.36
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	1035	2807			1603			89	101		80	589
v/s Ratio Prot	c0.21	0.32			c0.37							0.06
v/s Ratio Perm								0.00	0.00		c0.02	0.02
v/c Ratio	0.69	0.37			0.74			0.02	0.00		0.45	0.21
Uniform Delay, d1	26.2	1.4			16.8			37.9	37.9		38.8	19.0
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.1			1.9			0.1	0.0		4.0	0.2
Delay (s)	28.2	1.5			18.7			38.0	37.9		42.8	19.2
Level of Service	C	A			B			D	D		D	B
Approach Delay (s/veh)		12.3			18.7			38.0			21.4	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Future Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950			0.950	0.950				
Satd. Flow (prot)	1728	3455	1492	1728	4964	0	1665	1665	1620	0	1792	0
Flt Permitted	0.950			0.950			0.950	0.950				
Satd. Flow (perm)	1728	3455	1492	1728	4964	0	1665	1665	1620	0	1792	0
Satd. Flow (RTOR)			120						185		12	
Adj. Flow (vph)	4	1399	163	27	879	0	40	0	9	0	2	12
Lane Group Flow (vph)	4	1399	163	27	879	0	20	20	9	0	14	0
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Detector Phase	5	2	2 3	1	6		3	3	3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0	5.0	6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		11.0	11.0	11.0	12.0	12.0	
Total Split (s)	12.0	24.0		12.0	24.0		19.0	19.0	19.0	12.0	12.0	
Total Split (%)	12.0%	24.0%		12.0%	24.0%		19.0%	19.0%	19.0%	12.0%	12.0%	
Maximum Green (s)	6.0	18.0		6.0	18.0		13.0	13.0	13.0	6.0	6.0	
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)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	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	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.03	0.58	0.13	0.17	0.23		0.14	0.14	0.03		0.09	
Control Delay (s/veh)	42.7	12.0	1.8	50.5	3.6		43.6	43.6	0.1		24.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	42.7	12.0	1.8	50.5	3.6		43.6	43.6	0.1		24.3	
Queue Length 50th (ft)	2	204	3	17	28		12	12	0		1	
Queue Length 95th (ft)	12	368	23	49	53		35	35	0		5	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150			300		300			
Base Capacity (vph)	140	2409	1319	159	3755		249	249	400		158	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.03	0.58	0.12	0.17	0.23		0.08	0.08	0.02		0.09	

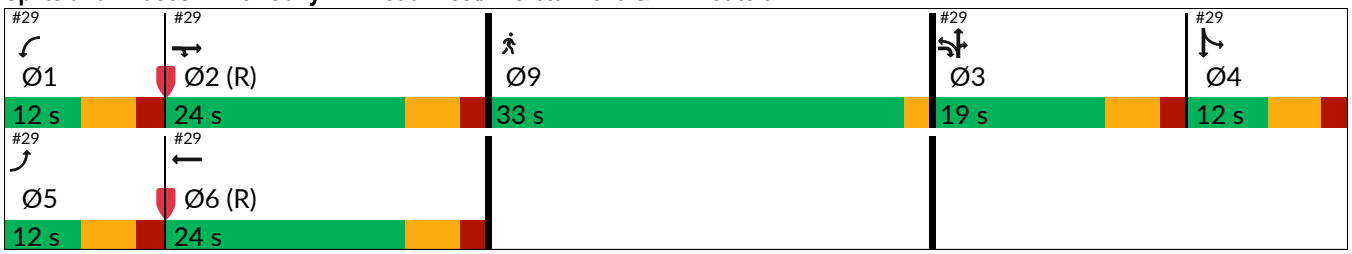
Intersection Summary
Cycle Length: 100

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	33%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	24.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 100
Offset: 55 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Future Volume (vph)	3	1133	132	26	835	0	34	0	8	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	4964		1665	1665	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	4964		1665	1665	1620		1792	
Peak-hour factor, PHF	0.81	0.81	0.81	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	4	1399	163	27	879	0	40	0	9	0	2	12
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	8	0	11	0
Lane Group Flow (vph)	4	1399	135	27	879	0	20	20	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Actuated Green, G (s)	1.3	61.7	74.5	4.8	65.2		6.8	6.8	6.8		2.7	
Effective Green, g (s)	3.3	63.7	76.5	6.8	67.2		8.8	8.8	8.8		4.7	
Actuated g/C Ratio	0.03	0.64	0.77	0.07	0.67		0.09	0.09	0.09		0.05	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	57	2200	1141	117	3335		146	146	142		84	
v/s Ratio Prot	0.00	c0.40	c0.09	c0.02	c0.18		0.01	0.01	0.00		c0.00	
v/s Ratio Perm												
v/c Ratio	0.07	0.64	0.12	0.23	0.26		0.14	0.14	0.01		0.03	
Uniform Delay, d1	46.9	11.1	3.0	44.1	6.5		42.1	42.1	41.6		45.5	
Progression Factor	1.00	1.00	1.00	1.16	0.66		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.5	1.4	0.0	1.0	0.2		0.4	0.4	0.0		0.1	
Delay (s)	47.4	12.5	3.1	52.4	4.5		42.5	42.5	41.6		45.6	
Level of Service	D	B	A	D	A		D	D	D		D	
Approach Delay (s/veh)		11.6			6.0			42.4			45.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Future Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Lane Util. Factor	1.00	0.91	1.00	0.95	0.97	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.850		
Flt Protected	0.950				0.950			0.950	0.950		0.950	
Satd. Flow (prot)	1728	4964	1546	0	3351	3455	0	1618	1618	1524	1865	1963
Flt Permitted	0.950				0.950			0.950	0.950		0.950	
Satd. Flow (perm)	1728	4964	1546	0	3351	3455	0	1618	1618	1524	1865	1963
Satd. Flow (RTOR)			120							185		
Adj. Flow (vph)	4	1476	21	1	46	924	1	31	0	40	4	0
Lane Group Flow (vph)	4	1476	21	0	47	925	0	15	16	40	4	0
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Detector Phase	5	2	2 3	1	1	6		3	3	3	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0	12.0	12.0	12.0
Total Split (s)	12.0	32.0		15.0	15.0	35.0		12.0	12.0	12.0	12.0	12.0
Total Split (%)	12.0%	32.0%		15.0%	15.0%	35.0%		12.0%	12.0%	12.0%	12.0%	12.0%
Maximum Green (s)	6.0	26.0		9.0	9.0	29.0		6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.03	0.39	0.02		0.16	0.33		0.11	0.11	0.13	0.03	
Control Delay (s/veh)	48.3	3.3	0.0		42.9	5.0		43.2	43.4	0.9	43.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	48.3	3.3	0.0		42.9	5.0		43.2	43.4	0.9	43.0	
Queue Length 50th (ft)	3	45	0		14	48		9	10	0	2	
Queue Length 95th (ft)	m4	57	m0		32	222		31	32	0	4	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225		225		200			90				
Base Capacity (vph)	140	3764	1361		368	2813		141	141	302	150	
Starvation Cap Reductn	0	0	0		0	0		0	0	0	0	
Spillback Cap Reductn	0	0	0		0	0		0	0	0	0	
Storage Cap Reductn	0	0	0		0	0		0	0	0	0	
Reduced v/c Ratio	0.03	0.39	0.02		0.13	0.33		0.11	0.11	0.13	0.03	

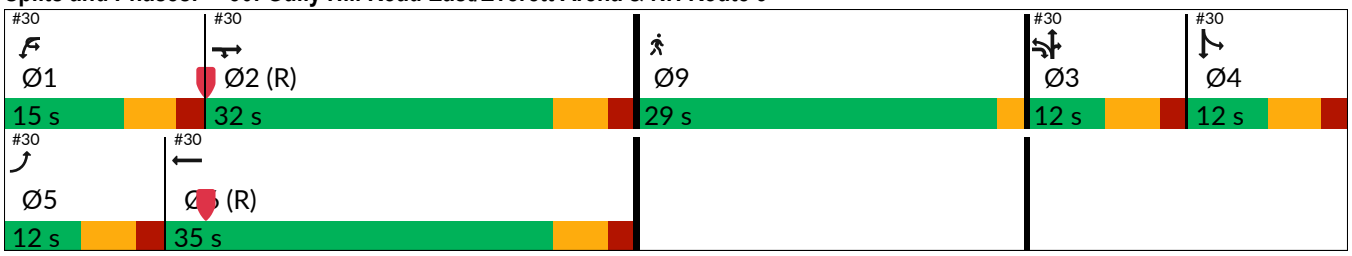
Intersection Summary
Cycle Length: 100

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		29%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100
Offset: 50 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



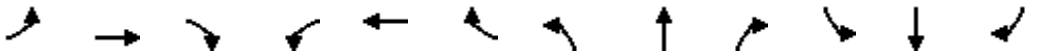
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Future Volume (vph)	3	1122	16	1	41	832	1	29	0	38	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00		0.97	0.95		0.95	0.95	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95	
Satd. Flow (prot)	1728	4964	1546		3351	3455		1618	1618	1524	1865	
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95	
Satd. Flow (perm)	1728	4964	1546		3351	3455		1618	1618	1524	1865	
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	4	1476	21	1	46	924	1	31	0	40	4	0
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	37	0	0
Lane Group Flow (vph)	4	1476	16	0	47	925	0	15	16	3	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Actuated Green, G (s)	1.3	64.6	76.2		4.5	67.8		5.6	5.6	5.6	1.3	
Effective Green, g (s)	3.3	66.6	78.2		6.5	69.8		7.6	7.6	7.6	3.3	
Actuated g/C Ratio	0.03	0.67	0.78		0.07	0.70		0.08	0.08	0.08	0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	57	3306	1208		217	2411		122	122	115	61	
v/s Ratio Prot	0.00	c0.30	0.01		c0.01	c0.27		0.01	c0.01	0.00	c0.00	
v/s Ratio Perm												
v/c Ratio	0.07	0.45	0.01		0.22	0.38		0.12	0.13	0.03	0.07	
Uniform Delay, d1	46.9	7.9	2.4		44.3	6.2		43.1	43.1	42.8	46.9	
Progression Factor	1.13	0.44	1.00		1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4	0.0		0.5	0.5		0.5	0.5	0.1	0.5	
Delay (s)	53.4	3.9	2.4		44.8	6.7		43.5	43.6	42.9	47.3	
Level of Service	D	A	A		D	A		D	D	D	D	
Approach Delay (s/veh)		4.0				8.5			43.2			47.3
Approach LOS		A				A			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

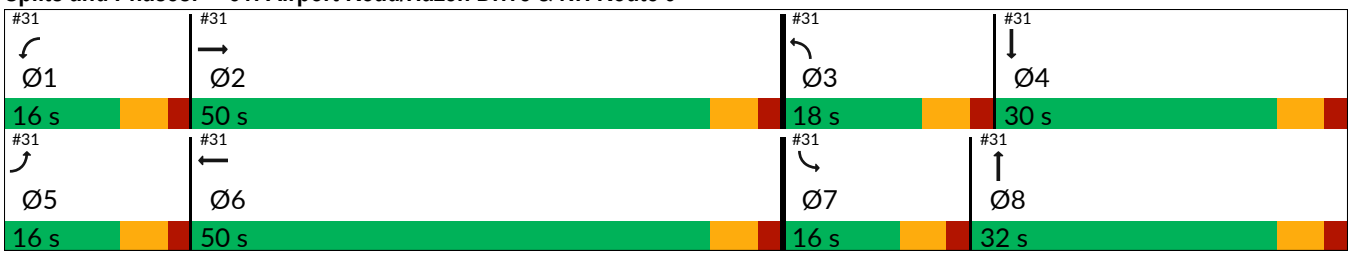


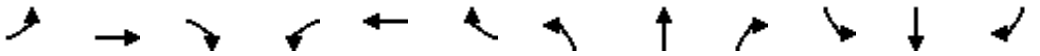
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Future Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			283			201			201			201
Adj. Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
Lane Group Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	16.0	50.0		16.0	50.0		18.0	32.0		16.0	30.0	
Total Split (%)	14.0%	43.9%		14.0%	43.9%		15.8%	28.1%		14.0%	26.3%	
Maximum Green (s)	10.0	44.0		10.0	44.0		12.0	26.0		10.0	24.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.69	0.66	0.18	0.35	0.63	0.08	0.29	0.27	0.08	0.15	0.49	0.06
Control Delay (s/veh)	45.0	25.8	0.2	38.6	25.7	0.1	38.0	28.6	0.1	40.7	38.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	25.8	0.2	38.6	25.7	0.1	38.0	28.6	0.1	40.7	38.3	0.1
Queue Length 50th (ft)	91	187	0	38	167	0	30	52	0	14	75	0
Queue Length 95th (ft)	#151	231	0	85	264	0	65	137	0	41	136	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	513	1960	1599	513	1960	1652	567	622	1568	248	566	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.42	0.18	0.31	0.38	0.08	0.22	0.23	0.08	0.11	0.27	0.06

Intersection Summary
Cycle Length: 114

Actuated Cycle Length: 83.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

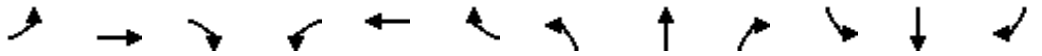




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Future Volume (vph)	267	620	212	147	698	127	105	125	102	22	121	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.75	0.75	0.75	0.93	0.93	0.93	0.86	0.86	0.86	0.78	0.78	0.78
Adj. Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	356	827	283	158	751	137	122	145	119	28	155	92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.3	28.1	87.0	8.9	26.7	87.0	8.7	23.0	87.0	3.0	17.3	87.0
Effective Green, g (s)	12.3	30.1	87.0	10.9	28.7	87.0	10.7	25.0	87.0	5.0	19.3	87.0
Actuated g/C Ratio	0.14	0.35	1.00	0.13	0.33	1.00	0.12	0.29	1.00	0.06	0.22	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	490	1195	1599	434	1139	1652	404	512	1568	96	391	1501
v/s Ratio Prot	c0.10	c0.24		0.05	0.22		c0.04	0.08		0.02	c0.09	
v/s Ratio Perm			c0.18			0.08			0.08			0.06
v/c Ratio	0.73	0.69	0.18	0.36	0.66	0.08	0.30	0.28	0.08	0.29	0.40	0.06
Uniform Delay, d1	35.7	24.5	0.0	34.9	25.0	0.0	34.7	24.0	0.0	39.3	28.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	1.8	0.2	0.5	1.4	0.1	0.4	0.3	0.1	1.7	0.7	0.1
Delay (s)	41.1	26.2	0.2	35.4	26.4	0.1	35.2	24.4	0.1	41.0	29.5	0.1
Level of Service	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay (s/veh)		24.8			24.3			20.3			20.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Future Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.994				0.850			0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3316	0	1652	3421	1531	1652	1739	1478	3236	1772	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3316	0	1652	3421	1531	1652	1739	1478	3236	1772	0
Satd. Flow (RTOR)		3				153			84		19	
Adj. Flow (vph)	50	571	23	11	648	210	120	141	16	210	214	134
Lane Group Flow (vph)	50	594	0	11	648	210	120	141	16	210	348	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6	6 4	8	8	8 1	4	4	
Permitted Phases												
Detector Phase	5	2		1	6	6 4	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.24	0.51		0.07	0.63	0.21	0.42	0.47	0.03	0.25	0.73	
Control Delay (s/veh)	42.6	25.2		43.3	30.4	3.7	40.4	41.2	0.1	30.8	42.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	42.6	25.2		43.3	30.4	3.7	40.4	41.2	0.1	30.8	42.7	
Queue Length 50th (ft)	27	146		6	170	13	63	75	0	51	179	
Queue Length 95th (ft)	68	218		25	255	50	97	111	0	93	#369	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125		125	130		130	350		
Base Capacity (vph)	358	1377		331	1374	985	429	452	662	840	474	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.43		0.03	0.47	0.21	0.28	0.31	0.02	0.25	0.73	

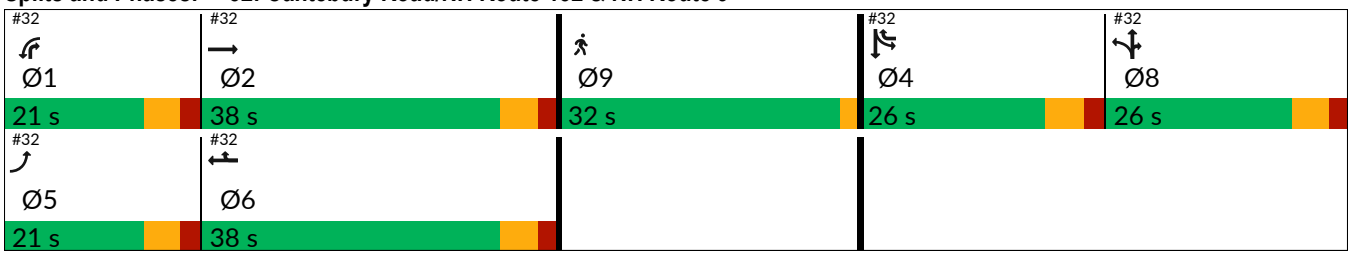
Intersection Summary
Cycle Length: 143

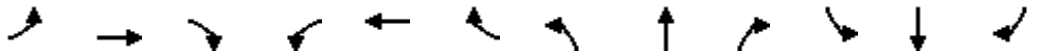
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 87.8
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9

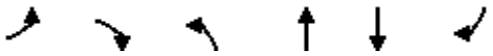




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Future Volume (vph)	45	514	21	10	596	193	84	99	11	183	186	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3317		1652	3421	1531	1652	1739	1478	3236	1773	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3317		1652	3421	1531	1652	1739	1478	3236	1773	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.70	0.70	0.70	0.87	0.87	0.87
Adj. Flow (vph)	50	571	23	11	648	210	120	141	16	210	214	134
RTOR Reduction (vph)	0	2	0	0	0	61	0	0	12	0	14	0
Lane Group Flow (vph)	50	592	0	11	648	149	120	141	4	210	334	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6	6 4	8	8	8 1	4	4	
Permitted Phases												
Actuated Green, G (s)	6.6	28.5		3.6	25.5	52.2	13.0	13.0	22.6	20.7	20.7	
Effective Green, g (s)	8.6	30.5		5.6	27.5	54.2	15.0	15.0	24.6	22.7	22.7	
Actuated g/C Ratio	0.10	0.34		0.06	0.31	0.60	0.17	0.17	0.27	0.25	0.25	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	171	1126		103	1047	924	275	290	404	818	448	
v/s Ratio Prot	c0.03	c0.18		0.01	c0.19	0.10	0.07	c0.08	0.00	0.06	c0.19	
v/s Ratio Perm												
v/c Ratio	0.29	0.53		0.11	0.62	0.16	0.44	0.49	0.01	0.26	0.75	
Uniform Delay, d1	37.8	23.8		39.7	26.7	7.8	33.6	33.9	23.7	26.8	30.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4		0.5	1.1	0.1	1.1	1.3	0.0	0.2	6.6	
Delay (s)	38.7	24.3		40.2	27.8	7.9	34.7	35.2	23.8	27.0	37.5	
Level of Service	D	C		D	C	A	C	D	C	C	D	
Approach Delay (s/veh)		25.4			23.1			34.3			33.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

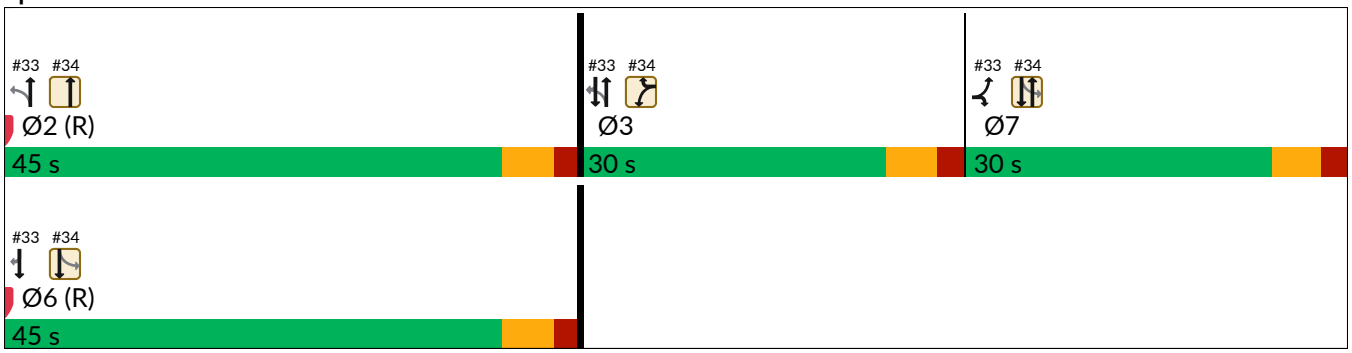


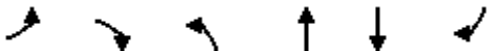
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	104	11	28	303	440	521			
Future Volume (vph)	104	11	28	303	440	521			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	3335	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.933					
Satd. Flow (perm)	3335	1538	0	1664	1881	1546			
Satd. Flow (RTOR)		16				628			
Adj. Flow (vph)	149	16	34	365	530	628			
Lane Group Flow (vph)	149	16	0	399	530	628			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.18	0.04		0.36	0.42	0.51			
Control Delay (s/veh)	31.6	13.6		8.5	9.2	3.1			
Queue Delay	0.0	0.0		0.0	1.4	0.7			
Total Delay (s/veh)	31.6	13.6		8.5	10.6	3.7			
Queue Length 50th (ft)	42	0		105	178	51			
Queue Length 95th (ft)	54	12		139	218	36			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	847	402		1111	1255	1240			
Starvation Cap Reductn	0	0		0	507	292			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.18	0.04		0.36	0.71	0.66			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive

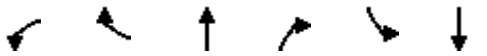




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	11	28	303	440	521
Future Volume (vph)	104	11	28	303	440	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3335	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.93	1.00	1.00
Satd. Flow (perm)	3335	1538		1663	1881	1546
Peak-hour factor, PHF	0.70	0.70	0.83	0.83	0.83	0.83
Adj. Flow (vph)	149	16	34	365	530	628
RTOR Reduction (vph)	0	12	0	0	0	208
Lane Group Flow (vph)	149	4	0	399	530	420
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	24.7	24.7		68.3	68.3	68.3
Effective Green, g (s)	26.7	26.7		70.3	70.3	70.3
Actuated g/C Ratio	0.25	0.25		0.67	0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	848	391		1113	1259	1035
v/s Ratio Prot	c0.04	0.00			c0.28	
v/s Ratio Perm				0.24		0.27
v/c Ratio	0.18	0.01		0.36	0.42	0.41
Uniform Delay, d1	30.6	29.3		7.5	8.0	7.9
Progression Factor	1.00	1.00		1.00	1.05	3.51
Incremental Delay, d2	0.1	0.0		0.2	0.2	0.2
Delay (s)	30.7	29.3		7.7	8.5	27.9
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	30.5			7.7	19.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

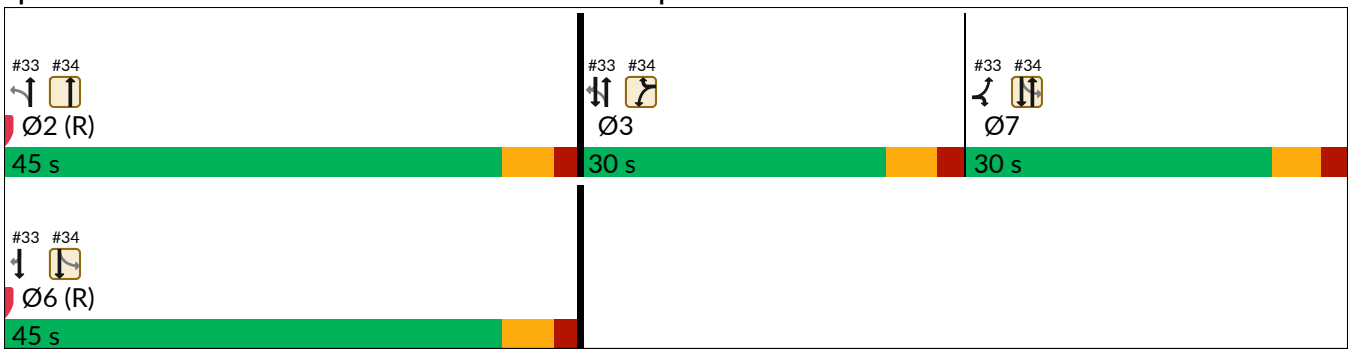


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	275	137	377	48	33	701			
Future Volume (vph)	275	137	377	48	33	701			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.983						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3267	0	1728	1818			
Flt Permitted	0.950				0.432				
Satd. Flow (perm)	1770	1583	3267	0	786	1818			
Satd. Flow (RTOR)		145	29						
Adj. Flow (vph)	320	159	483	62	39	825			
Lane Group Flow (vph)	320	159	545	0	39	825			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.71	0.31	0.25		0.07	0.68			
Control Delay (s/veh)	46.0	8.6	4.7		6.4	14.0			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	46.0	8.6	4.9		6.4	14.0			
Queue Length 50th (ft)	201	7	44		8	297			
Queue Length 95th (ft)	286	53	49		18	379			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	450	511	2239		536	1241			
Starvation Cap Reductn	0	0	962		0	0			
Spillback Cap Reductn	0	0	0		0	7			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.71	0.31	0.43		0.07	0.67			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	137	377	48	33	701
Future Volume (vph)	275	137	377	48	33	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3267		1728	1818
Flt Permitted	0.95	1.00	1.00		0.43	1.00
Satd. Flow (perm)	1770	1583	3267		786	1818
Peak-hour factor, PHF	0.86	0.86	0.78	0.78	0.85	0.85
Adj. Flow (vph)	320	159	483	62	39	825
RTOR Reduction (vph)	0	108	10	0	0	0
Lane Group Flow (vph)	320	51	535	0	39	825
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	24.6	24.6	68.4		68.4	68.4
Effective Green, g (s)	26.6	26.6	70.4		70.4	70.4
Actuated g/C Ratio	0.25	0.25	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	448	401	2190		526	1218
v/s Ratio Prot	c0.18	0.03	0.16			c0.45
v/s Ratio Perm					0.05	
v/c Ratio	0.71	0.13	0.24		0.07	0.68
Uniform Delay, d1	35.7	30.2	6.8		6.0	10.4
Progression Factor	1.00	1.00	0.68		1.00	1.00
Incremental Delay, d2	5.3	0.1	0.1		0.1	1.5
Delay (s)	41.1	30.4	4.7		6.1	12.0
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	37.5		4.7			11.7
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

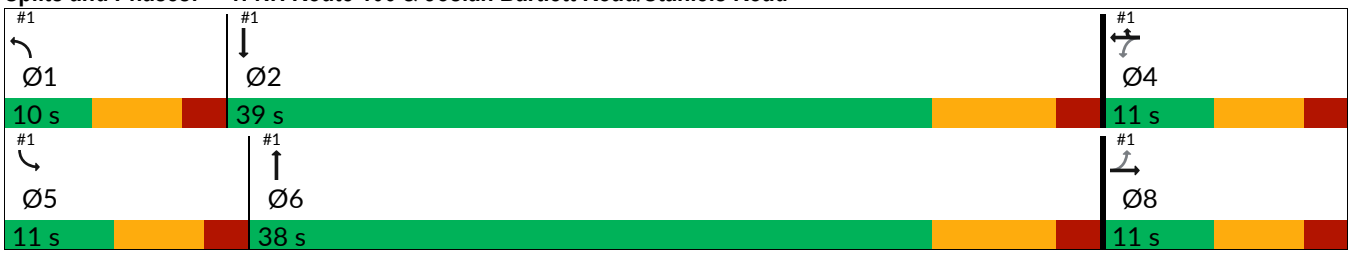
2027 Mitigated Opening Year Build Weekday Evening Peak-Hour

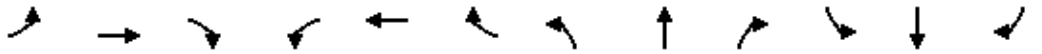
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Future Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.910				0.850		0.985			0.999	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	1662	0	0	1775	1583	1787	3521	0	1770	3536	0
Flt Permitted					0.723		0.950			0.950		
Satd. Flow (perm)	0	1662	0	0	1347	1583	1787	3521	0	1770	3536	0
Satd. Flow (RTOR)		6				191		30			2	
Adj. Flow (vph)	0	3	6	76	1	69	1	1243	137	33	695	6
Lane Group Flow (vph)	0	9	0	0	77	69	1	1380	0	33	701	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	38.0		11.0	39.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%	18.3%	16.7%	63.3%		18.3%	65.0%	
Maximum Green (s)	5.0	5.0		5.0	5.0	5.0	4.0	30.5		5.0	31.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.41	0.18	0.01	0.57		0.19	0.27	
Control Delay (s/veh)		17.5			31.3	1.0	26.0	8.1		27.3	4.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.5			31.3	1.0	26.0	8.1		27.3	4.4	
Queue Length 50th (ft)		1			20	0	0	85		9	33	
Queue Length 95th (ft)		8			#72	0	5	246		35	96	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		236			187	384	142	2369		175	2546	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.04			0.41	0.18	0.01	0.58		0.19	0.28	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 52.1
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

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

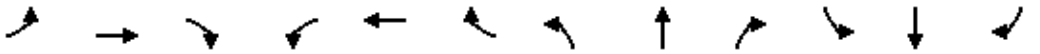
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Future Volume (vph)	0	2	4	68	1	62	1	1168	129	31	646	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.91			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1663			1775	1583	1787	3521		1770	3535	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1663			1347	1583	1787	3521		1770	3535	
Peak-hour factor, PHF	0.63	0.63	0.63	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	3	6	76	1	69	1	1243	137	33	695	6
RTOR Reduction (vph)	0	5	0	0	0	62	0	12	0	0	1	0
Lane Group Flow (vph)	0	4	0	0	77	7	1	1368	0	33	700	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		3.8			3.8	3.8	0.7	33.3		1.7	34.3	
Effective Green, g (s)		5.8			5.8	5.8	0.7	35.3		1.7	36.3	
Actuated g/C Ratio		0.10			0.10	0.10	0.01	0.61		0.03	0.62	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		165			134	157	21	2131		51	2201	
v/s Ratio Prot		0.00				0.00	0.00	c0.39		c0.02	0.20	
v/s Ratio Perm					c0.06							
v/c Ratio		0.02			0.57	0.04	0.05	0.64		0.65	0.32	
Uniform Delay, d1		23.7			25.1	23.7	28.5	7.4		28.0	5.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			5.8	0.1	0.9	0.7		24.8	0.1	
Delay (s)		23.7			30.9	23.9	29.4	8.1		52.8	5.3	
Level of Service		C			C	C	C	A		D	A	
Approach Delay (s/veh)		23.7			27.6			8.1			7.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	15.5
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

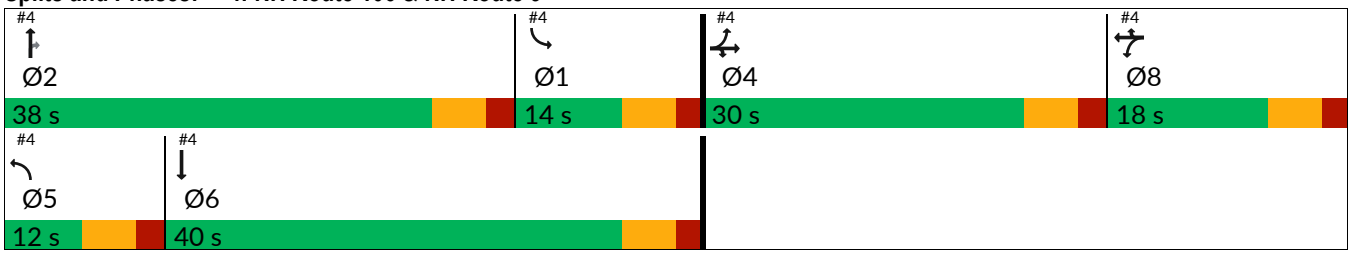


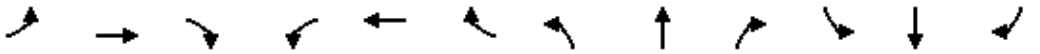
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Future Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			229			229			446			697
Adj. Flow (vph)	742	369	58	344	311	51	58	921	545	97	781	723
Lane Group Flow (vph)	742	369	58	344	311	51	58	921	545	97	781	723
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	30.0	30.0	30.0	18.0	18.0	18.0	12.0	38.0	38.0	14.0	40.0	
Total Split (%)	30.0%	30.0%	30.0%	18.0%	18.0%	18.0%	12.0%	38.0%	38.0%	14.0%	40.0%	
Maximum Green (s)	24.0	24.0	24.0	12.0	12.0	12.0	6.0	32.0	32.0	8.0	34.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.83	0.76	0.10	0.71	0.62	0.12	0.40	0.77	0.66	0.54	0.63	0.40
Control Delay (s/veh)	42.9	44.8	0.3	49.0	45.6	0.6	52.3	33.8	9.9	55.0	28.2	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.9	44.8	0.3	49.0	45.6	0.6	52.3	33.8	9.9	55.0	28.2	0.7
Queue Length 50th (ft)	234	221	0	111	101	0	36	277	44	61	215	0
Queue Length 95th (ft)	#328	#359	0	151	138	0	78	356	159	#116	280	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	939	509	598	501	516	425	149	1266	849	186	1341	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.72	0.10	0.69	0.60	0.12	0.39	0.73	0.64	0.52	0.58	0.40

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 94.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Future Volume (vph)	675	336	53	292	264	43	53	838	496	88	711	658
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	742	369	58	344	311	51	58	921	545	97	781	723
RTOR Reduction (vph)	0	0	43	0	0	44	0	0	294	0	0	0
Lane Group Flow (vph)	742	369	15	344	311	7	58	921	251	97	781	723
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	23.2	23.2	23.2	11.7	11.7	11.7	4.5	30.5	30.5	6.0	32.0	95.4
Effective Green, g (s)	25.2	25.2	25.2	13.7	13.7	13.7	6.5	32.5	32.5	8.0	34.0	95.4
Actuated g/C Ratio	0.26	0.26	0.26	0.14	0.14	0.14	0.07	0.34	0.34	0.08	0.36	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	885	480	408	476	491	219	117	1177	526	144	1231	1812
v/s Ratio Prot	c0.22	0.20	0.01	c0.10	0.09	0.00	0.03	c0.27		0.06	c0.23	
v/s Ratio Perm									0.16			0.40
v/c Ratio	0.84	0.77	0.04	0.72	0.63	0.03	0.50	0.78	0.48	0.67	0.63	0.40
Uniform Delay, d1	33.2	32.4	26.1	39.0	38.5	35.2	42.9	28.3	24.8	42.4	25.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	7.3	0.0	5.4	2.7	0.1	3.3	3.5	0.7	11.8	1.1	0.7
Delay (s)	40.2	39.7	26.1	44.4	41.2	35.2	46.1	31.7	25.4	54.2	26.6	0.7
Level of Service	D	D	C	D	D	D	D	C	C	D	C	A
Approach Delay (s/veh)		39.3			42.3			30.0			16.6	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

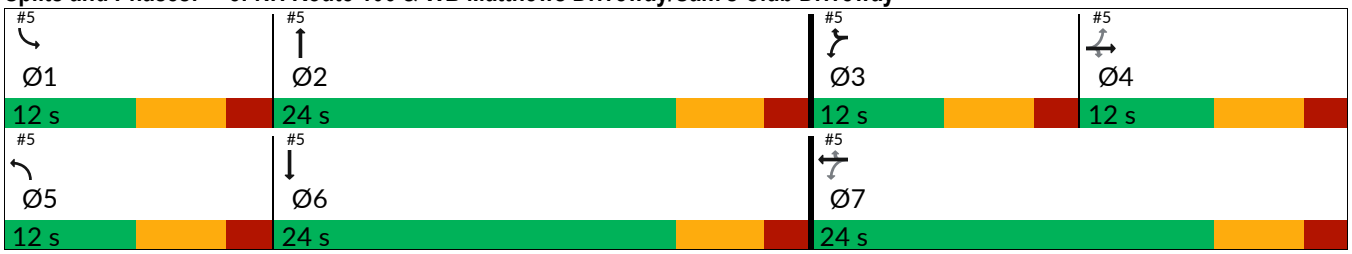
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	15	73	1	159	11	929	20	98	854	5
Future Volume (vph)	4	1	15	73	1	159	11	929	20	98	854	5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.997			0.999	
Flt Protected		0.961			0.953		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1811	1669	1728	3445	0	1752	3501	0
Flt Permitted		0.707			0.432		0.950			0.950		
Satd. Flow (perm)	0	1343	1615	0	821	1669	1728	3445	0	1752	3501	0
Satd. Flow (RTOR)			273			187		4			1	
Adj. Flow (vph)	13	3	47	86	1	187	13	1106	24	100	871	5
Lane Group Flow (vph)	0	16	47	0	87	187	13	1130	0	100	876	0
Turn Type	Perm	NA	Perm	pm+pt	NA	custom	Prot	NA		Prot	NA	
Protected Phases		4		3	7	3	5	2		1	6	
Permitted Phases	4		4	7		7						
Detector Phase	4	4	4	3	7	3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	10.0		6.0	10.0	
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	16.0		12.0	16.0	
Total Split (s)	12.0	12.0	12.0	12.0	24.0	12.0	12.0	24.0		12.0	24.0	
Total Split (%)	20.0%	20.0%	20.0%	20.0%	40.0%	20.0%	20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	6.0	6.0	6.0	6.0	18.0	6.0	6.0	18.0		6.0	18.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		0.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		6.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	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	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.08	0.10		0.29	0.31	0.05	0.68		0.37	0.41	
Control Delay (s/veh)		24.0	0.4		18.7	4.4	23.4	21.5		28.1	10.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.0	0.4		18.7	4.4	23.4	21.5		28.1	10.7	
Queue Length 50th (ft)		5	0		23	0	4	210		35	96	
Queue Length 95th (ft)		7	0		48	31	17	#304		76	211	
Internal Link Dist (ft)		210			308			1555			2106	
Turn Bay Length (ft)			50			125	400			600		
Base Capacity (vph)		205	477		375	607	263	1651		267	2121	
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		0.08	0.10		0.23	0.31	0.05	0.68		0.37	0.41	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 54
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 5: NH Route 106 & WB Matthews Driveway/Sam's Club Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	15	73	1	159	11	929	20	98	854	5
Future Volume (vph)	4	1	15	73	1	159	11	929	20	98	854	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	13	11	11	11	12	12	12
Total Lost time (s)		4.0	4.0		6.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1826	1615		1811	1669	1728	3444		1752	3502	
Flt Permitted		0.71	1.00		0.43	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1344	1615		821	1669	1728	3444		1752	3502	
Peak-hour factor, PHF	0.32	0.32	0.32	0.85	0.85	0.85	0.84	0.84	0.84	0.98	0.98	0.98
Adj. Flow (vph)	12	3	47	86	1	187	13	1106	24	100	871	5
RTOR Reduction (vph)	0	0	43	0	0	139	0	2	0	0	0	0
Lane Group Flow (vph)	0	16	4	0	87	48	13	1128	0	100	876	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	pm+pt	NA	custom	Prot	NA		Prot	NA	
Protected Phases		4		3	7	3	5	2		1	6	
Permitted Phases	4		4	7		7						
Actuated Green, G (s)		3.2	3.2		14.3	14.3	1.1	26.1		4.5	29.5	
Effective Green, g (s)		5.2	5.2		14.3	16.3	3.1	28.1		6.5	31.5	
Actuated g/C Ratio		0.08	0.08		0.23	0.26	0.05	0.45		0.10	0.50	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		111	133		266	432	85	1538		181	1753	
v/s Ratio Prot					c0.03	0.01	0.01	c0.33		c0.06	c0.25	
v/s Ratio Perm		0.01	0.00		c0.05	0.02						
v/c Ratio		0.14	0.03		0.33	0.11	0.15	0.73		0.55	0.50	
Uniform Delay, d1		26.8	26.5		20.3	17.8	28.6	14.3		26.8	10.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1		0.7	0.1	0.8	1.8		3.6	0.2	
Delay (s)		27.4	26.6		21.0	17.9	29.5	16.2		30.4	10.7	
Level of Service		C	C		C	B	C	B		C	B	
Approach Delay (s/veh)		26.8			18.9			16.3			12.7	
Approach LOS		C			B			B			B	

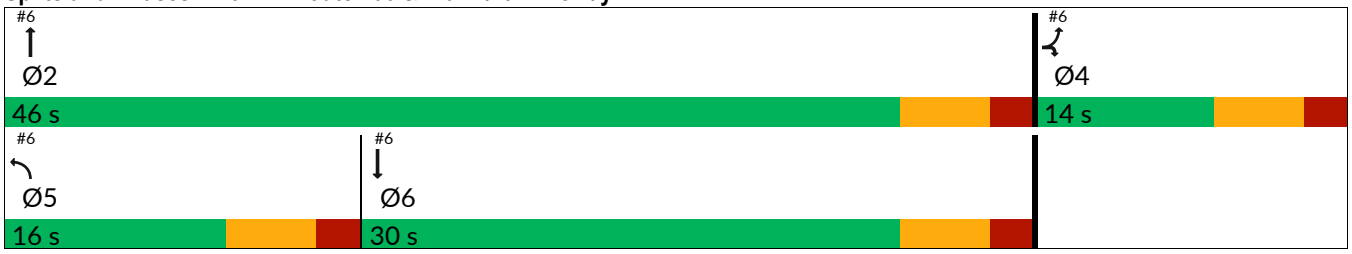
Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	144	148	1165	807	135
Future Volume (vph)	37	144	148	1165	807	135
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.979	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1847	1599	1668	3574	3431	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1847	1599	1668	3574	3431	0
Satd. Flow (RTOR)		150			40	
Adj. Flow (vph)	39	150	164	1294	849	142
Lane Group Flow (vph)	39	150	164	1294	991	0
Turn Type	Prot	Prot	Prot	NA	NA	
Protected Phases	4	4	5	2	6	
Permitted Phases						
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	
Minimum Split (s)	12.0	12.0	12.0	16.0	16.0	
Total Split (s)	14.0	14.0	16.0	46.0	30.0	
Total Split (%)	23.3%	23.3%	26.7%	76.7%	50.0%	
Maximum Green (s)	8.0	8.0	10.0	40.0	24.0	
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)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
v/c Ratio	0.12	0.38	0.47	0.47	0.52	
Control Delay (s/veh)	22.5	8.1	25.7	4.2	12.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	22.5	8.1	25.7	4.2	12.5	
Queue Length 50th (ft)	12	0	52	79	132	
Queue Length 95th (ft)	35	42	105	125	198	
Internal Link Dist (ft)	488			959	1555	
Turn Bay Length (ft)		100	400			
Base Capacity (vph)	365	437	396	2802	1944	
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	0.11	0.34	0.41	0.46	0.51	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 52.9
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: NH Route 106 & Walmart Driveway



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	144	148	1165	807	135
Future Volume (vph)	37	144	148	1165	807	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1847	1599	1668	3574	3430	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1847	1599	1668	3574	3430	
Peak-hour factor, PHF	0.96	0.96	0.90	0.90	0.95	0.95
Adj. Flow (vph)	39	150	164	1294	849	142
RTOR Reduction (vph)	0	131	0	0	20	0
Lane Group Flow (vph)	39	19	164	1294	971	0
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Turn Type	Prot	Prot	Prot	NA	NA	
Protected Phases	4	4	5	2	6	
Permitted Phases						
Actuated Green, G (s)	5.1	5.1	7.1	38.6	25.5	
Effective Green, g (s)	7.1	7.1	9.1	40.6	27.5	
Actuated g/C Ratio	0.13	0.13	0.16	0.73	0.49	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	235	203	272	2605	1693	
v/s Ratio Prot	c0.02	0.01	c0.10	0.36	c0.28	
v/s Ratio Perm						
v/c Ratio	0.17	0.09	0.60	0.50	0.57	
Uniform Delay, d1	21.7	21.5	21.6	3.2	10.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.2	3.7	0.1	0.5	
Delay (s)	22.0	21.7	25.4	3.4	10.4	
Level of Service	C	C	C	A	B	
Approach Delay (s/veh)	21.7			5.8	10.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

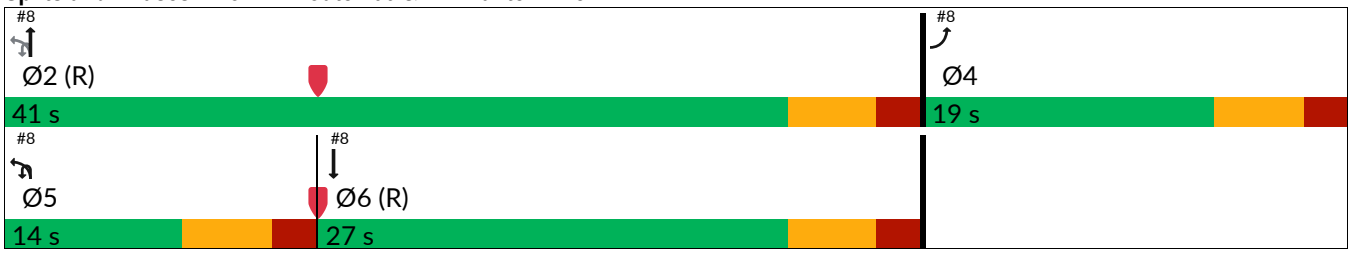
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	382	131	1	189	911	634	290
Future Volume (vph)	382	131	1	189	911	634	290
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	0.95
Frt	0.962					0.953	
Flt Protected	0.964			0.950			
Satd. Flow (prot)	3304	0	0	1711	3539	3229	0
Flt Permitted	0.964			0.141			
Satd. Flow (perm)	3304	0	0	254	3539	3229	0
Satd. Flow (RTOR)	78					144	
Adj. Flow (vph)	386	132	1	222	1072	689	315
Lane Group Flow (vph)	518	0	0	223	1072	1004	0
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Detector Phase	4		5	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	11.0	
Total Split (s)	19.0		14.0	14.0	41.0	27.0	
Total Split (%)	31.7%		23.3%	23.3%	68.3%	45.0%	
Maximum Green (s)	13.0		8.0	8.0	35.0	21.0	
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)	-2.0			-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0	
Lead/Lag			Lead	Lead		Lag	
Lead-Lag Optimize?			Yes	Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min	
v/c Ratio	0.62			0.57	0.48	0.72	
Control Delay (s/veh)	20.9			13.5	6.9	8.8	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay (s/veh)	20.9			13.5	6.9	8.8	
Queue Length 50th (ft)	71			31	96	45	
Queue Length 95th (ft)	113			76	124	129	
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			
Base Capacity (vph)	884			403	2242	1399	
Starvation Cap Reductn	0			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.59			0.55	0.48	0.72	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 33 (55%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	382	131	1	189	911	634	290
Future Volume (vph)	382	131	1	189	911	634	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0			4.0	4.0	4.0	
Lane Util. Factor	0.97			1.00	0.95	0.95	
Frt	0.96			1.00	1.00	0.95	
Flt Protected	0.96			0.95	1.00	1.00	
Satd. Flow (prot)	3304			1711	3539	3229	
Flt Permitted	0.96			0.14	1.00	1.00	
Satd. Flow (perm)	3304			254	3539	3229	
Peak-hour factor, PHF	0.99	0.99	0.85	0.85	0.85	0.92	0.92
Adj. Flow (vph)	386	132	1	222	1072	689	315
RTOR Reduction (vph)	60	0	0	0	0	85	0
Lane Group Flow (vph)	458	0	0	223	1072	919	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Actuated Green, G (s)	12.0			36.0	36.0	22.4	
Effective Green, g (s)	14.0			38.0	38.0	24.4	
Actuated g/C Ratio	0.23			0.63	0.63	0.41	
Clearance Time (s)	6.0			6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	3.0	
Lane Grp Cap (vph)	770			393	2241	1313	
v/s Ratio Prot	c0.14			c0.09	0.30	c0.28	
v/s Ratio Perm				0.27			
v/c Ratio	0.60			0.57	0.48	0.70	
Uniform Delay, d1	20.5			7.8	5.8	14.8	
Progression Factor	1.00			1.00	1.00	0.44	
Incremental Delay, d2	1.2			1.9	0.7	2.8	
Delay (s)	21.7			9.7	6.5	9.3	
Level of Service	C			A	A	A	
Approach Delay (s/veh)	21.7				7.1	9.3	
Approach LOS	C				A	A	

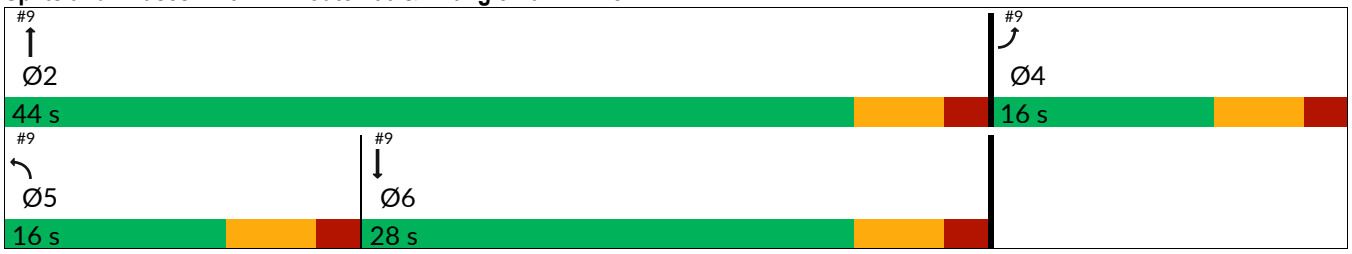
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	186	176	1084	823	33
Future Volume (vph)	15	186	176	1084	823	33
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.875				0.994	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1858	0	1906	3574	3553	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1858	0	1906	3574	3553	0
Satd. Flow (RTOR)	230				8	
Adj. Flow (vph)	19	230	193	1191	895	36
Lane Group Flow (vph)	249	0	193	1191	931	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	16.0		16.0	44.0	28.0	
Total Split (%)	26.7%		26.7%	73.3%	46.7%	
Maximum Green (s)	10.0		10.0	38.0	22.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.48		0.47	0.50	0.60	
Control Delay (s/veh)	8.0		24.5	5.3	14.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	8.0		24.5	5.3	14.5	
Queue Length 50th (ft)	6		57	66	120	
Queue Length 95th (ft)	43		119	128	195	
Internal Link Dist (ft)	1073			1451	1013	
Turn Bay Length (ft)			150			
Base Capacity (vph)	617		453	2741	1694	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.40		0.43	0.43	0.55	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 52.4
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

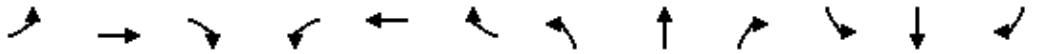
Splits and Phases: 9: NH Route 106 & Triangle Park Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	186	176	1084	823	33
Future Volume (vph)	15	186	176	1084	823	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.88		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1859		1906	3574	3554	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	1859		1906	3574	3554	
Peak-hour factor, PHF	0.81	0.81	0.91	0.91	0.92	0.92
Adj. Flow (vph)	19	230	193	1191	895	36
RTOR Reduction (vph)	190	0	0	0	5	0
Lane Group Flow (vph)	59	0	193	1191	926	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	7.4		7.2	34.1	20.9	
Effective Green, g (s)	9.4		9.2	36.1	22.9	
Actuated g/C Ratio	0.18		0.17	0.67	0.43	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	326		327	2411	1521	
v/s Ratio Prot	c0.03		c0.10	0.33	c0.26	
v/s Ratio Perm						
v/c Ratio	0.18		0.59	0.49	0.61	
Uniform Delay, d1	18.8		20.4	4.2	11.8	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.3		2.8	0.2	0.7	
Delay (s)	19.0		23.3	4.4	12.5	
Level of Service	B		C	A	B	
Approach Delay (s/veh)	19.0			7.0	12.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

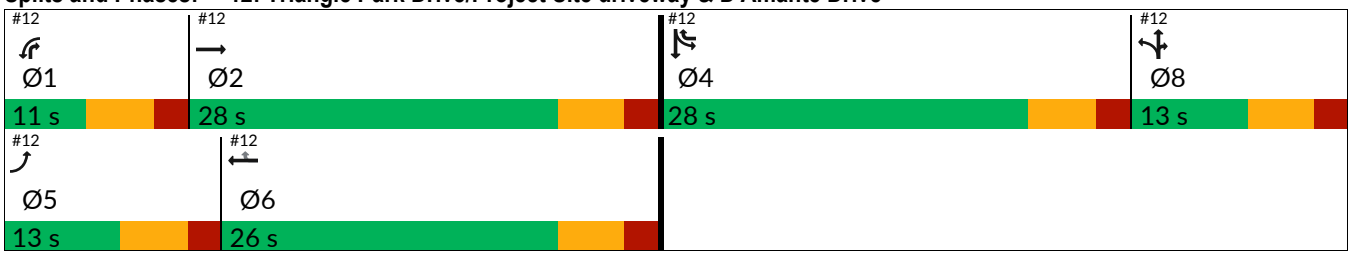


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Future Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.955				0.850			0.850		0.885	
Flt Protected	0.950			0.950				0.959		0.950	0.994	
Satd. Flow (prot)	1787	3300	0	1728	1881	1599	0	1804	1599	1681	1557	0
Flt Permitted	0.950			0.950				0.959		0.950	0.994	
Satd. Flow (perm)	1787	3300	0	1728	1881	1599	0	1804	1599	1681	1557	0
Satd. Flow (RTOR)		85				125			123		130	
Adj. Flow (vph)	142	309	132	55	344	125	129	23	81	199	19	130
Lane Group Flow (vph)	142	441	0	55	344	125	0	152	81	179	169	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6	4	8	8	8 1	4	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	4	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0	28.0	11.0	11.0		28.0	28.0	
Total Split (s)	13.0	28.0		11.0	26.0	28.0	13.0	13.0		28.0	28.0	
Total Split (%)	16.3%	35.0%		13.8%	32.5%	35.0%	16.3%	16.3%		35.0%	35.0%	
Maximum Green (s)	7.0	22.0		5.0	20.0	22.0	7.0	7.0		22.0	22.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	None	None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.59	0.38		0.31	0.68	0.13		0.63	0.14	0.47	0.37	
Control Delay (s/veh)	42.9	16.3		36.5	30.7	1.7		44.6	2.6	27.7	9.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	42.9	16.3		36.5	30.7	1.7		44.6	2.6	27.7	9.9	
Queue Length 50th (ft)	59	61		22	129	0		63	0	70	13	
Queue Length 95th (ft)	#147	110		59	231	16		#121	5	132	62	
Internal Link Dist (ft)		981			380			958			344	
Turn Bay Length (ft)	250			250		100			170	250		
Base Capacity (vph)	239	1252		179	615	1135		241	562	600	639	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.59	0.35		0.31	0.56	0.11		0.63	0.14	0.30	0.26	

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 68.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Future Volume (vph)	125	272	116	48	299	109	97	17	61	179	17	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	0.96		1.00	1.00	0.85		1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3300		1728	1881	1599		1805	1599	1681	1556	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3300		1728	1881	1599		1805	1599	1681	1556	
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.75	0.75	0.75	0.90	0.90	0.90
Adj. Flow (vph)	142	309	132	55	344	125	129	23	81	199	19	130
RTOR Reduction (vph)	0	57	0	0	0	62	0	0	59	0	101	0
Lane Group Flow (vph)	142	384	0	55	344	63	0	152	22	179	68	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6	4	8	8	8 1	4	4	
Permitted Phases						6						
Actuated Green, G (s)	7.1	21.0		3.9	17.8	31.1		7.1	17.0	13.3	13.3	
Effective Green, g (s)	9.1	23.0		5.9	19.8	35.1		9.1	19.0	15.3	15.3	
Actuated g/C Ratio	0.13	0.33		0.09	0.29	0.51		0.13	0.27	0.22	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	234	1095		147	537	902		237	438	371	343	
v/s Ratio Prot	c0.08	c0.12		0.03	c0.18	0.02		c0.08	0.01	c0.11	0.04	
v/s Ratio Perm						0.02						
v/c Ratio	0.61	0.35		0.37	0.64	0.07		0.64	0.05	0.48	0.20	
Uniform Delay, d1	28.4	17.5		30.0	21.6	8.8		28.6	18.5	23.5	22.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	0.2		1.6	2.6	0.0		5.8	0.0	1.0	0.3	
Delay (s)	32.8	17.7		31.6	24.2	8.8		34.4	18.6	24.5	22.3	
Level of Service	C	B		C	C	A		C	B	C	C	
Approach Delay (s/veh)		21.4			21.3			28.9			23.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

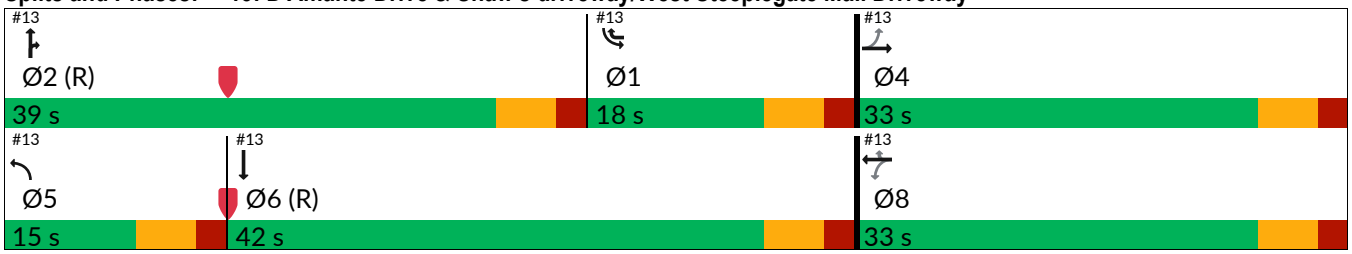
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Future Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.954				0.850			0.850		0.985	
Flt Protected		0.966			0.950		0.950			0.950		
Satd. Flow (prot)	0	3327	0	0	1829	1636	1787	3455	1546	3351	3403	0
Flt Permitted		0.681			0.660		0.950			0.950		
Satd. Flow (perm)	0	2345	0	0	1270	1636	1787	3455	1546	3351	3403	0
Satd. Flow (RTOR)		182				123			109		17	
Adj. Flow (vph)	101	0	44	140	0	123	46	465	88	165	494	56
Lane Group Flow (vph)	0	145	0	0	140	123	46	465	88	165	550	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	33.0	33.0		33.0	33.0	18.0	15.0	39.0	39.0	18.0	42.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%	20.0%	16.7%	43.3%	43.3%	20.0%	46.7%	
Maximum Green (s)	27.0	27.0		27.0	27.0	12.0	9.0	33.0	33.0	12.0	36.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.24			0.58	0.18	0.24	0.25	0.10	0.37	0.26	
Control Delay (s/veh)		3.8			41.6	3.5	39.0	12.5	2.3	32.3	7.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		3.8			41.6	3.5	39.0	12.5	2.3	32.3	7.7	
Queue Length 50th (ft)		0			74	0	25	69	0	40	57	
Queue Length 95th (ft)		m13			124	28	56	123	19	64	94	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		878			409	662	224	1875	888	524	2116	
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		0.17			0.34	0.19	0.21	0.25	0.10	0.31	0.26	

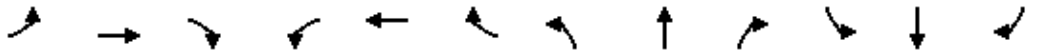
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 87 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway

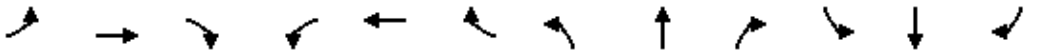




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Future Volume (vph)	94	0	41	126	0	111	43	437	83	140	420	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3330			1829	1636	1787	3455	1546	3351	3402	
Flt Permitted		0.68			0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2347			1270	1636	1787	3455	1546	3351	3402	
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.94	0.94	0.94	0.85	0.85	0.85
Adj. Flow (vph)	101	0	44	140	0	123	46	465	88	165	494	56
RTOR Reduction (vph)	0	117	0	0	0	80	0	0	43	0	7	0
Lane Group Flow (vph)	0	28	0	0	140	43	46	465	45	165	543	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		15.2			15.2	27.6	5.4	44.4	44.4	12.4	51.4	
Effective Green, g (s)		17.2			17.2	31.6	7.4	46.4	46.4	14.4	53.4	
Actuated g/C Ratio		0.19			0.19	0.35	0.08	0.52	0.52	0.16	0.59	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		448			242	647	146	1781	797	536	2018	
v/s Ratio Prot						0.01	0.03	c0.13	0.03	0.05	c0.16	
v/s Ratio Perm		0.01			c0.11	0.02						
v/c Ratio		0.06			0.58	0.07	0.32	0.26	0.06	0.31	0.27	
Uniform Delay, d1		29.8			33.1	19.4	38.9	12.2	10.9	33.4	8.9	
Progression Factor		1.29			1.00	1.00	1.00	1.00	1.00	0.85	0.75	
Incremental Delay, d2		0.1			3.3	0.0	1.2	0.4	0.1	0.3	0.3	
Delay (s)		38.5			36.4	19.4	40.2	12.6	11.0	28.8	7.0	
Level of Service		D			D	B	D	B	B	C	A	
Approach Delay (s/veh)		38.5			28.5			14.5			12.0	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.6	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)	12.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

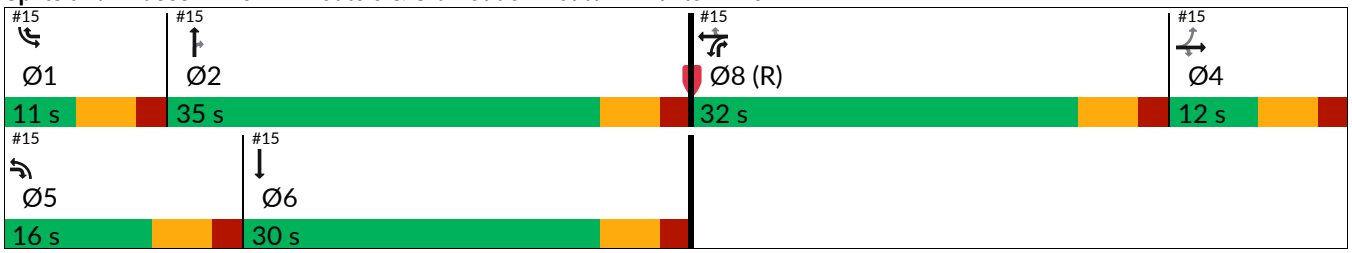


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Future Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.988		0.950	0.965		0.950			0.950		
Satd. Flow (prot)	0	1815	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Flt Permitted		0.817		0.950	0.965		0.950			0.950		
Satd. Flow (perm)	0	1501	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Satd. Flow (RTOR)			109			137			414		2	
Adj. Flow (vph)	13	40	90	518	83	137	111	664	526	108	660	14
Lane Group Flow (vph)	0	53	90	300	301	137	111	664	526	108	674	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	12.0	12.0	16.0	32.0	32.0	11.0	16.0	35.0	32.0	11.0	30.0	
Total Split (%)	13.3%	13.3%	17.8%	35.6%	35.6%	12.2%	17.8%	38.9%	35.6%	12.2%	33.3%	
Maximum Green (s)	6.0	6.0	10.0	26.0	26.0	5.0	10.0	29.0	26.0	5.0	24.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Min	C-Min	None	None	None	C-Min	None	None	
v/c Ratio		0.39	0.22	0.46	0.44	0.17	0.50	0.63	0.41	0.37	0.73	
Control Delay (s/veh)		47.8	5.2	28.9	28.4	2.9	44.8	29.2	2.1	52.6	28.8	
Queue Delay		0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		47.8	5.2	28.9	28.5	2.9	44.8	29.2	2.1	52.6	28.8	
Queue Length 50th (ft)		29	0	98	97	0	60	160	18	22	188	
Queue Length 95th (ft)		65	25	264	264	57	112	213	47	62	111	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		137	418	647	680	811	238	1190	1297	295	996	
Starvation Cap Reductn		0	0	19	37	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.39	0.22	0.48	0.47	0.17	0.47	0.56	0.41	0.37	0.68	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 35 (39%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Future Volume (vph)	11	35	79	451	72	119	99	591	468	100	614	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1814	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Flt Permitted		0.82	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1500	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	13	40	90	518	83	137	111	664	526	108	660	14
RTOR Reduction (vph)	0	0	73	0	0	75	0	0	135	0	1	0
Lane Group Flow (vph)	0	53	17	300	301	62	111	664	391	108	673	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		3.6	12.8	31.1	31.1	36.8	9.2	25.6	56.7	5.7	22.1	
Effective Green, g (s)		5.6	16.8	33.1	33.1	40.8	11.2	27.6	60.7	7.7	24.1	
Actuated g/C Ratio		0.06	0.19	0.37	0.37	0.45	0.12	0.31	0.67	0.09	0.27	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		93	360	603	634	676	222	1059	1149	296	922	
v/s Ratio Prot			0.01	c0.18	0.17	0.01	c0.06	c0.19	0.13	0.03	c0.20	
v/s Ratio Perm		c0.04	0.00			0.03			0.12			
v/c Ratio		0.57	0.05	0.50	0.47	0.09	0.50	0.63	0.34	0.36	0.73	
Uniform Delay, d1		41.0	30.0	22.0	21.8	14.0	36.8	26.8	6.2	38.8	30.0	
Progression Factor		1.00	1.00	1.12	1.13	1.20	1.00	1.00	1.00	1.25	0.81	
Incremental Delay, d2		7.8	0.1	2.9	2.5	0.1	1.8	1.2	0.2	0.7	2.8	
Delay (s)		48.8	30.1	27.6	27.1	16.9	38.6	28.0	6.4	49.1	26.9	
Level of Service		D	C	C	C	B	D	C	A	D	C	
Approach Delay (s/veh)		37.0			25.4			20.1			30.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Future Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.975			0.984	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3369	0	3467	3400	0
Flt Permitted		0.585			0.686		0.950			0.950		
Satd. Flow (perm)	0	1112	1615	0	1320	1636	1847	3369	0	3467	3400	0
Satd. Flow (RTOR)			84			176		32			20	
Adj. Flow (vph)	97	0	84	137	0	291	80	572	116	322	643	78
Lane Group Flow (vph)	0	97	84	0	137	291	80	688	0	322	721	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	15.0	28.0	28.0	21.0	15.0	41.0		21.0	47.0	
Total Split (%)	31.1%	31.1%	16.7%	31.1%	31.1%	23.3%	16.7%	45.6%		23.3%	52.2%	
Maximum Green (s)	22.0	22.0	9.0	22.0	22.0	15.0	9.0	35.0		15.0	41.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.48	0.14		0.57	0.38	0.35	0.40		0.53	0.36	
Control Delay (s/veh)		39.7	4.1		42.0	7.6	38.3	15.3		42.3	10.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.2	
Total Delay (s/veh)		39.7	4.1		42.0	7.6	38.3	15.3		42.3	10.6	
Queue Length 50th (ft)		50	0		73	42	48	155		100	76	
Queue Length 95th (ft)		91	24		123	77	m91	85		109	174	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		296	637		352	796	247	1738		684	2016	
Starvation Cap Reductn		0	0		0	0	0	0		0	471	
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	0.13		0.39	0.37	0.32	0.40		0.47	0.47	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

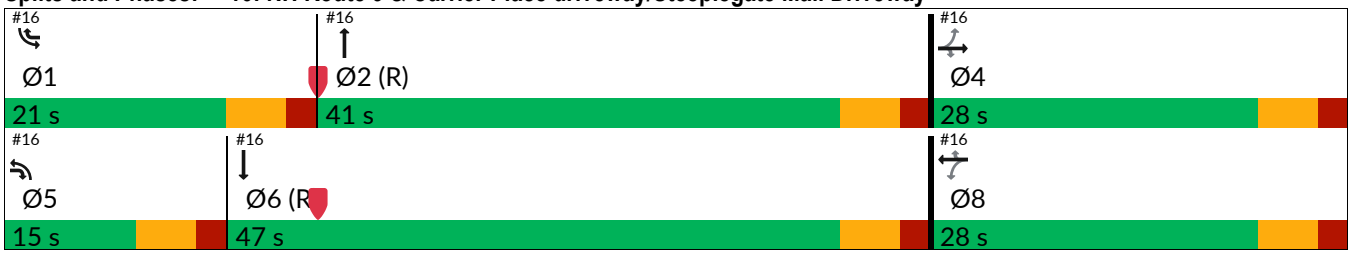
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Future Volume (vph)	87	0	76	123	0	262	75	538	109	267	534	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615		1829	1636	1847	3368		3467	3399	
Flt Permitted		0.59	1.00		0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1112	1615		1321	1636	1847	3368		3467	3399	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.83	0.83	0.83
Adj. Flow (vph)	97	0	84	137	0	291	80	572	116	322	643	78
RTOR Reduction (vph)	0	0	59	0	0	113	0	16	0	0	9	0
Lane Group Flow (vph)	0	97	25	0	137	178	80	672	0	322	712	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		14.4	22.4		14.4	28.3	8.0	43.7		13.9	49.6	
Effective Green, g (s)		16.4	26.4		16.4	32.3	10.0	45.7		15.9	51.6	
Actuated g/C Ratio		0.18	0.29		0.18	0.36	0.11	0.51		0.18	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		202	545		240	659	205	1710		612	1948	
v/s Ratio Prot			0.01			0.05	0.04	c0.20		c0.09	0.21	
v/s Ratio Perm		0.09	0.01		c0.10	0.06						
v/c Ratio		0.48	0.05		0.57	0.27	0.39	0.39		0.53	0.37	
Uniform Delay, d1		33.0	22.8		33.6	20.5	37.2	13.6		33.6	10.4	
Progression Factor		1.00	1.00		1.00	1.00	0.98	1.00		1.18	0.86	
Incremental Delay, d2		1.8	0.0		3.3	0.2	1.1	0.6		0.8	0.5	
Delay (s)		34.8	22.8		36.8	20.7	37.5	14.2		40.5	9.4	
Level of Service		C	C		D	C	D	B		D	A	
Approach Delay (s/veh)		29.2			25.9			16.7			19.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

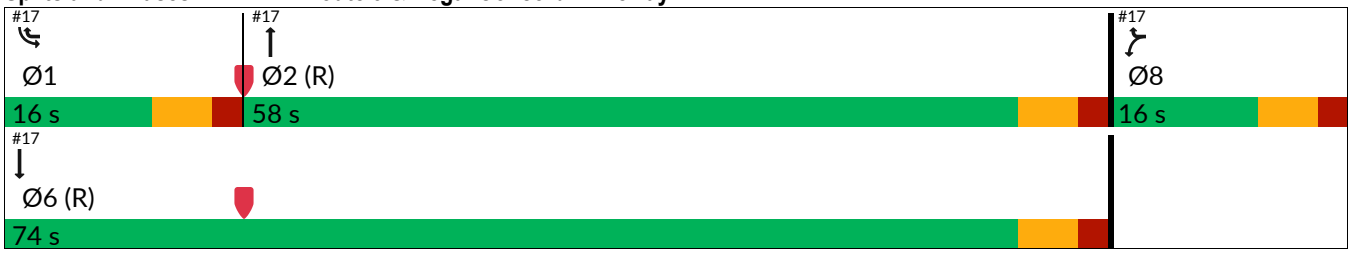
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	33	858	29	37	835
Future Volume (vph)	32	33	858	29	37	835
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.995			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	2046	1830	3438	0	1787	3455
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	2046	1830	3438	0	1787	3455
Satd. Flow (RTOR)		37	7			
Adj. Flow (vph)	36	37	885	30	42	949
Lane Group Flow (vph)	36	37	915	0	42	949
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Detector Phase	8	8 1	2		1	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		6.0	10.0
Minimum Split (s)	12.0		16.0		12.0	16.0
Total Split (s)	16.0		58.0		16.0	74.0
Total Split (%)	17.8%		64.4%		17.8%	82.2%
Maximum Green (s)	10.0		52.0		10.0	68.0
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.17	0.08	0.37		0.22	0.33
Control Delay (s/veh)	38.4	8.4	3.5		38.8	2.4
Queue Delay	0.0	0.0	0.1		0.0	0.0
Total Delay (s/veh)	38.4	8.4	3.6		38.8	2.4
Queue Length 50th (ft)	19	0	32		22	53
Queue Length 95th (ft)	47	22	82		51	80
Internal Link Dist (ft)	358		266			887
Turn Bay Length (ft)					360	
Base Capacity (vph)	272	468	2472		238	2917
Starvation Cap Reductn	0	0	549		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.13	0.08	0.48		0.18	0.33

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 17: NH Route 9 & Regal Concord Driveway



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	33	858	29	37	835
Future Volume (vph)	32	33	858	29	37	835
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	12	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2046	1830	3438		1787	3455
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	2046	1830	3438		1787	3455
Peak-hour factor, PHF	0.90	0.90	0.97	0.97	0.88	0.88
Adj. Flow (vph)	36	37	885	30	42	949
RTOR Reduction (vph)	0	29	2	0	0	0
Lane Group Flow (vph)	36	8	913	0	42	949
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Actuated Green, G (s)	6.0	18.5	59.5		6.5	72.0
Effective Green, g (s)	8.0	20.5	61.5		8.5	74.0
Actuated g/C Ratio	0.09	0.23	0.68		0.09	0.82
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	181	416	2349		168	2840
v/s Ratio Prot	c0.02	0.00	c0.27		0.02	c0.27
v/s Ratio Perm						
v/c Ratio	0.20	0.02	0.39		0.25	0.33
Uniform Delay, d1	38.0	27.0	6.1		37.8	2.0
Progression Factor	1.00	1.00	0.45		1.00	1.00
Incremental Delay, d2	0.5	0.0	0.5		0.8	0.3
Delay (s)	38.6	27.0	3.2		38.6	2.3
Level of Service	D	C	A		D	A
Approach Delay (s/veh)	32.7		3.2			3.8
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.6	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)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Future Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3427	0
Flt Permitted		0.638			0.688		0.950			0.950		
Satd. Flow (perm)	0	1200	1599	0	1294	1599	1805	3490	1561	1787	3427	0
Satd. Flow (RTOR)			205			205			123		9	
Adj. Flow (vph)	62	8	93	109	7	31	74	788	47	19	836	44
Lane Group Flow (vph)	0	70	93	0	116	31	74	788	47	19	880	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	14.0	47.0	47.0	11.0	44.0	
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	17.5%	58.8%	58.8%	13.8%	55.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	8.0	41.0	41.0	5.0	38.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.21		0.50	0.07	0.33	0.31	0.04	0.10	0.42	
Control Delay (s/veh)		31.4	1.0		36.2	0.3	35.7	7.4	0.1	43.7	16.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.4	1.0		36.2	0.3	35.7	7.4	0.1	43.7	16.5	
Queue Length 50th (ft)		31	0		53	0	34	61	0	10	146	
Queue Length 95th (ft)		59	0		68	0	73	194	0	m18	193	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		275	524		297	524	239	2581	1186	200	2142	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.25	0.18		0.39	0.06	0.31	0.31	0.04	0.10	0.41	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

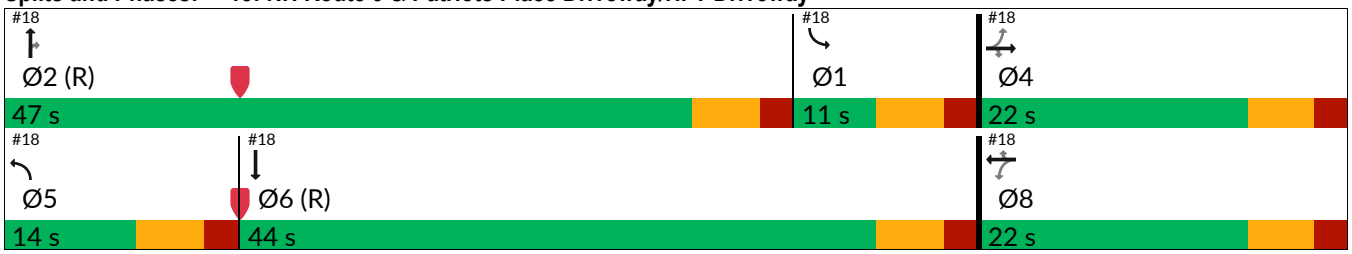
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green

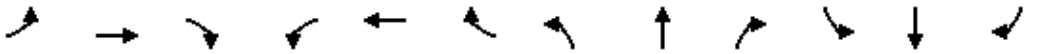
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

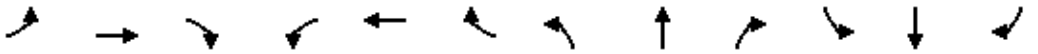




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Future Volume (vph)	53	7	79	73	5	21	73	772	46	16	719	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3429	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1201	1599		1295	1599	1805	3490	1561	1787	3429	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	62	8	93	109	7	31	74	788	47	19	836	44
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	17	0	4	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	788	30	19	876	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		11.0	11.0		11.0	11.0	6.9	48.9	48.9	2.1	44.1	
Effective Green, g (s)		13.0	13.0		13.0	13.0	8.9	50.9	50.9	4.1	46.1	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.11	0.64	0.64	0.05	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	259		210	259	200	2220	993	91	1975	
v/s Ratio Prot							0.04	c0.23		0.01	c0.26	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.36	0.06		0.55	0.02	0.37	0.35	0.03	0.21	0.44	
Uniform Delay, d1		29.8	28.3		30.8	28.1	33.0	6.8	5.4	36.4	9.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.39	1.41	
Incremental Delay, d2		1.1	0.1		3.1	0.0	1.2	0.4	0.1	1.1	0.7	
Delay (s)		30.9	28.4		33.9	28.2	34.1	7.3	5.5	51.7	14.3	
Level of Service		C	C		C	C	C	A	A	D	B	
Approach Delay (s/veh)		29.5			32.7			9.4			15.1	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

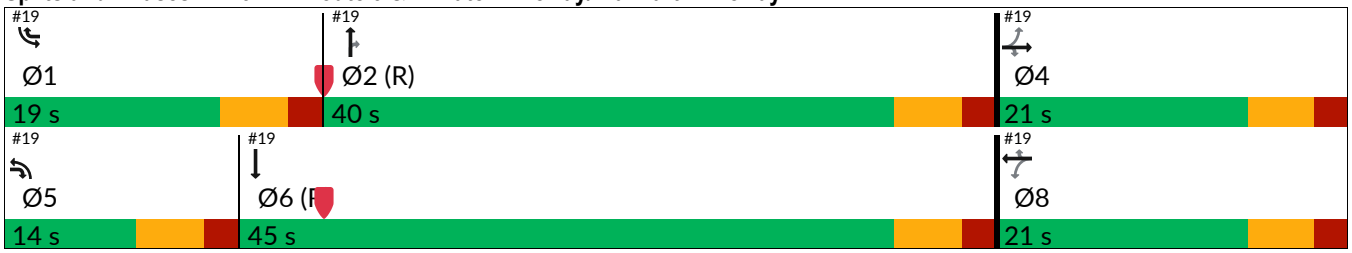


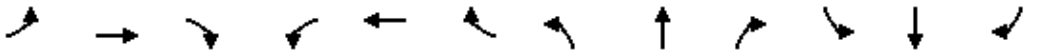
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Future Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.990	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3455	0
Flt Permitted		0.652			0.652		0.950			0.950		
Satd. Flow (perm)	0	1239	1615	0	1186	1546	1787	3455	1599	1685	3455	0
Satd. Flow (RTOR)			42			82			123		14	
Adj. Flow (vph)	100	20	42	89	26	213	73	875	25	145	788	58
Lane Group Flow (vph)	0	120	42	0	115	213	73	875	25	145	846	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	21.0	21.0	14.0	21.0	21.0	19.0	14.0	40.0	40.0	19.0	45.0	
Total Split (%)	26.3%	26.3%	17.5%	26.3%	26.3%	23.8%	17.5%	50.0%	50.0%	23.8%	56.3%	
Maximum Green (s)	15.0	15.0	8.0	15.0	15.0	13.0	8.0	34.0	34.0	13.0	39.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.55	0.08		0.56	0.35	0.33	0.47	0.03	0.52	0.39	
Control Delay (s/veh)		39.5	5.6		40.0	10.7	44.3	11.2	0.3	36.9	11.0	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		39.5	5.6		40.0	10.7	44.3	11.2	0.3	36.9	11.0	
Queue Length 50th (ft)		55	0		53	41	31	159	0	66	125	
Queue Length 95th (ft)		98	17		94	73	74	193	0	111	162	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		263	551		252	642	234	1876	924	319	2173	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.46	0.08		0.46	0.33	0.31	0.47	0.03	0.45	0.39	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Future Volume (vph)	86	17	36	75	22	179	58	700	20	122	662	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3454	
Flt Permitted		0.65	1.00		0.65	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1238	1615		1185	1546	1787	3455	1599	1685	3454	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.84	0.84	0.84
Adj. Flow (vph)	100	20	42	89	26	213	72	875	25	145	788	58
RTOR Reduction (vph)	0	0	31	0	0	55	0	0	12	0	6	0
Lane Group Flow (vph)	0	120	11	0	115	158	73	875	13	145	840	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		10.6	17.4		10.6	21.9	6.8	40.1	40.1	11.3	44.6	
Effective Green, g (s)		12.6	21.4		12.6	25.9	8.8	42.1	42.1	13.3	46.6	
Actuated g/C Ratio		0.16	0.27		0.16	0.32	0.11	0.53	0.53	0.17	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		194	512		186	577	196	1818	841	280	2011	
v/s Ratio Prot			0.00			0.05	0.04	c0.25		c0.09	0.24	
v/s Ratio Perm		0.10	0.00		c0.10	0.06			0.01			
v/c Ratio		0.62	0.02		0.62	0.27	0.37	0.48	0.02	0.52	0.42	
Uniform Delay, d1		31.5	21.6		31.5	20.1	33.0	12.0	9.1	30.4	9.2	
Progression Factor		1.00	1.00		1.00	1.00	1.26	0.76	1.00	1.00	1.00	
Incremental Delay, d2		5.8	0.0		6.0	0.3	1.2	0.9	0.0	1.6	0.6	
Delay (s)		37.2	21.6		37.5	20.3	42.7	10.1	9.1	32.0	9.9	
Level of Service		D	C		D	C	D	B	A	C	A	
Approach Delay (s/veh)		33.2			26.3			12.5			13.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

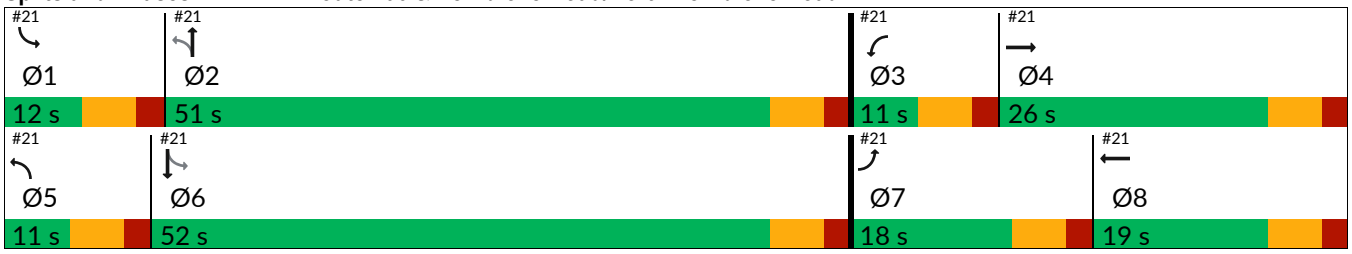
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Future Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.915			0.912			0.992			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	1721	0	1736	1500	0	1811	3477	0	1829	3454	0
Flt Permitted	0.950			0.950			0.183			0.124		
Satd. Flow (perm)	3467	1721	0	1736	1500	0	349	3477	0	239	3454	0
Satd. Flow (RTOR)		60			61			8			31	
Adj. Flow (vph)	271	84	110	36	53	76	77	1077	60	90	834	160
Lane Group Flow (vph)	271	194	0	36	129	0	77	1137	0	90	994	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	18.0	26.0		11.0	19.0		11.0	51.0		12.0	52.0	
Total Split (%)	18.0%	26.0%		11.0%	19.0%		11.0%	51.0%		12.0%	52.0%	
Maximum Green (s)	12.0	20.0		5.0	13.0		5.0	45.0		6.0	46.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
v/c Ratio	0.47	0.42		0.22	0.48		0.24	0.69		0.30	0.59	
Control Delay (s/veh)	38.9	25.4		45.8	28.7		10.5	21.3		11.2	18.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	38.9	25.4		45.8	28.7		10.5	21.3		11.2	18.2	
Queue Length 50th (ft)	73	66		20	37		18	273		21	213	
Queue Length 95th (ft)	114	123		44	69		40	373		45	295	
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200			250		
Base Capacity (vph)	667	577		167	357		327	2130		307	2155	
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	0.41	0.34		0.22	0.36		0.24	0.53		0.29	0.46	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 81.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Future Volume (vph)	222	69	90	26	38	55	69	969	54	84	776	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1721		1736	1499		1811	3477		1829	3454	
Flt Permitted	0.95	1.00		0.95	1.00		0.18	1.00		0.12	1.00	
Satd. Flow (perm)	3467	1721		1736	1499		349	3477		238	3454	
Peak-hour factor, PHF	0.82	0.82	0.82	0.72	0.72	0.72	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	271	84	110	36	53	76	77	1077	60	90	834	160
RTOR Reduction (vph)	0	46	0	0	53	0	0	4	0	0	17	0
Lane Group Flow (vph)	271	148	0	36	76	0	77	1133	0	90	977	0
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	11.5	17.5		2.6	8.6		40.1	36.5		41.5	37.2	
Effective Green, g (s)	13.5	19.5		4.6	10.6		44.1	38.5		45.5	39.2	
Actuated g/C Ratio	0.16	0.23		0.05	0.12		0.52	0.45		0.54	0.46	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	551	395		94	187		277	1576		245	1594	
v/s Ratio Prot	c0.08	c0.09		0.02	0.05		0.02	c0.33		c0.03	0.28	
v/s Ratio Perm							0.13			0.17		
v/c Ratio	0.49	0.37		0.38	0.40		0.28	0.72		0.37	0.61	
Uniform Delay, d1	32.6	27.6		38.8	34.2		11.6	18.8		12.5	17.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.6		2.6	1.4		0.5	1.6		0.9	0.7	
Delay (s)	33.3	28.2		41.4	35.7		12.1	20.4		13.4	17.9	
Level of Service	C	C		D	D		B	C		B	B	
Approach Delay (s/veh)		31.1			36.9			19.9			17.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Future Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.862			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1568	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.414			0.674			0.141			0.242		
Satd. Flow (perm)	779	1568	0	1281	1981	0	256	1818	1599	455	1818	1546
Satd. Flow (RTOR)		120			35				92			306
Adj. Flow (vph)	450	10	120	15	46	53	57	711	1	9	649	320
Lane Group Flow (vph)	450	130	0	15	99	0	57	711	1	9	649	320
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	30.0	44.0		14.0	14.0		11.0	66.0	66.0	55.0	55.0	55.0
Total Split (%)	23.1%	33.8%		10.8%	10.8%		8.5%	50.8%	50.8%	42.3%	42.3%	42.3%
Maximum Green (s)	24.0	38.0		8.0	8.0		5.0	60.0	60.0	49.0	49.0	49.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.79	0.19		0.13	0.46		0.24	0.74	0.00	0.04	0.80	0.37
Control Delay (s/veh)	39.5	6.1		48.7	39.5		13.5	23.7	0.0	17.1	33.5	3.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.5	6.1		48.7	39.5		13.5	23.7	0.0	17.1	33.5	3.8
Queue Length 50th (ft)	269	5		10	43		17	344	0	3	375	5
Queue Length 95th (ft)	#352	35		30	96		36	487	0	13	531	54
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	569	700		128	229		237	1129	1028	232	929	939
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.19		0.12	0.43		0.24	0.63	0.00	0.04	0.70	0.34

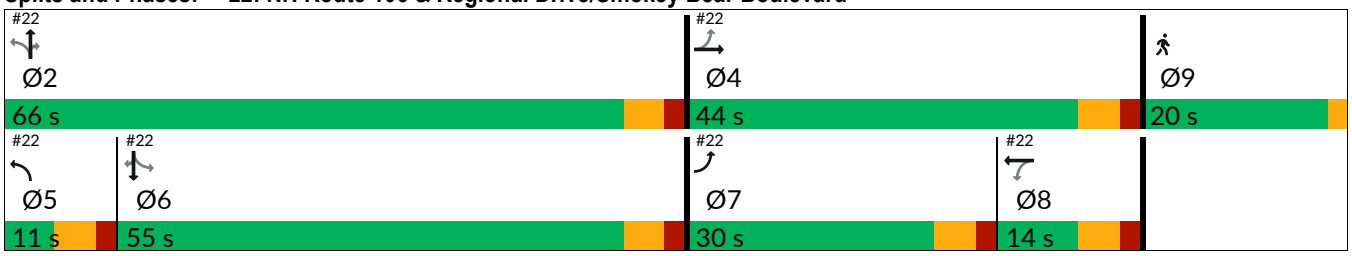
Intersection Summary
Cycle Length: 130

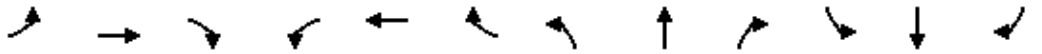
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	15%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 101.8
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Future Volume (vph)	369	8	98	13	41	47	53	661	1	8	591	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.41	1.00		0.67	1.00		0.14	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	778	1567		1280	1980		257	1818	1599	455	1818	1546
Peak-hour factor, PHF	0.82	0.82	0.82	0.89	0.89	0.89	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	450	10	120	15	46	53	57	711	1	9	649	320
RTOR Reduction (vph)	0	73	0	0	32	0	0	0	0	0	0	172
Lane Group Flow (vph)	450	57	0	15	67	0	57	711	1	9	649	148
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.0	38.0		7.5	7.5		53.0	53.0	53.0	43.2	43.2	43.2
Effective Green, g (s)	40.0	40.0		9.5	9.5		55.0	55.0	55.0	45.2	45.2	45.2
Actuated g/C Ratio	0.39	0.39		0.09	0.09		0.53	0.53	0.53	0.44	0.44	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	561	608		118	182		220	970	853	199	797	678
v/s Ratio Prot	c0.21	0.04			0.03		0.01	c0.39			c0.36	
v/s Ratio Perm	c0.10			0.01			0.12		0.00	0.02		0.10
v/c Ratio	0.80	0.09		0.13	0.37		0.26	0.73	0.00	0.05	0.81	0.22
Uniform Delay, d1	26.0	20.0		42.9	43.9		17.1	18.4	11.2	16.5	25.2	17.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.1		0.5	1.3		0.6	2.9	0.0	0.1	6.4	0.2
Delay (s)	34.1	20.1		43.4	45.2		17.8	21.3	11.2	16.6	31.6	18.1
Level of Service	C	C		D	D		B	C	B	B	C	B
Approach Delay (s/veh)		30.9			45.0			21.0			27.1	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	402	1017	1	2	944	39	1	1	2	83	1	825
Future Volume (vph)	402	1017	1	2	944	39	1	1	2	83	1	825
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	3467	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.864			0.726	
Satd. Flow (perm)	3467	3336	0	1668	3316	0	0	1642	1830	0	1320	1546
Satd. Flow (RTOR)					3				155			607
Adj. Flow (vph)	432	1094	1	2	1111	46	2	2	4	92	1	917
Lane Group Flow (vph)	432	1095	0	2	1157	0	0	4	4	0	93	917
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	24.0	45.0		11.0	32.0		37.0	37.0	37.0	37.0	37.0	24.0
Total Split (%)	20.0%	37.5%		9.2%	26.7%		30.8%	30.8%	30.8%	30.8%	30.8%	20.0%
Maximum Green (s)	18.0	39.0		5.0	26.0		31.0	31.0	31.0	31.0	31.0	18.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.45	0.45		0.01	0.84			0.01	0.01		0.40	0.88
Control Delay (s/veh)	23.6	6.8		31.0	27.3			24.5	0.0		31.8	16.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	23.6	6.8		31.0	27.3			24.5	0.0		31.8	16.5
Queue Length 50th (ft)	82	86		1	250			2	0		38	98
Queue Length 95th (ft)	131	235		7	#373			5	0		80	#436
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	1030	2457		173	1382			805	976		647	1064
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	0.42	0.45		0.01	0.84			0.00	0.00		0.14	0.86

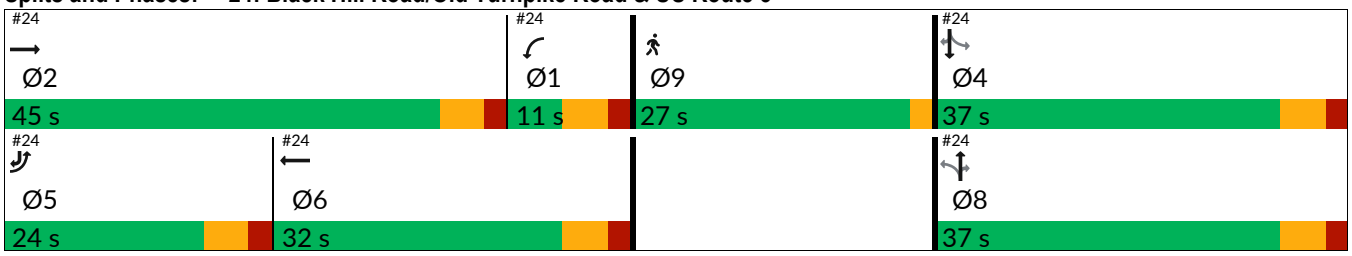
Intersection Summary
Cycle Length: 120

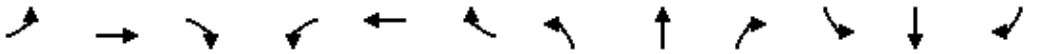
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 68.4
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	402	1017	1	2	944	39	1	1	2	83	1	825
Future Volume (vph)	402	1017	1	2	944	39	1	1	2	83	1	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	3467	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.86	1.00		0.73	1.00
Satd. Flow (perm)	3467	3336		1668	3316			1642	1830		1321	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.85	0.85	0.85	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	432	1094	1	2	1111	46	2	2	4	92	1	917
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	3	0	0	369
Lane Group Flow (vph)	432	1095	0	2	1155	0	0	4	1	0	93	548
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Actuated Green, G (s)	16.8	47.3		0.9	31.4			8.5	8.5		8.5	25.3
Effective Green, g (s)	18.8	49.3		2.9	33.4			10.5	10.5		10.5	29.3
Actuated g/C Ratio	0.25	0.66		0.04	0.45			0.14	0.14		0.14	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	872	2201		64	1482			230	257		185	689
v/s Ratio Prot	0.12	0.33		0.00	c0.35							c0.20
v/s Ratio Perm								0.00	0.00		0.07	0.15
v/c Ratio	0.50	0.50		0.03	0.78			0.02	0.00		0.50	0.80
Uniform Delay, d1	23.9	6.4		34.5	17.5			27.7	27.6		29.7	20.1
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.2		0.2	2.7			0.0	0.0		2.1	6.3
Delay (s)	24.3	6.6		34.7	20.2			27.7	27.6		31.8	26.4
Level of Service	C	A		C	C			C	C		C	C
Approach Delay (s/veh)		11.6			20.2			27.6			26.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Future Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950			0.950	0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	4964	0	1715	1715	1669	0	1763
Flt Permitted		0.950			0.950			0.950	0.950			
Satd. Flow (perm)	0	1728	3455	1492	1728	4964	0	1715	1715	1669	0	1763
Satd. Flow (RTOR)				120						185		57
Adj. Flow (vph)	2	32	1286	278	24	1451	0	336	0	78	0	2
Lane Group Flow (vph)	0	34	1286	278	24	1451	0	168	168	78	0	59
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA
Protected Phases	5	5	2	2 3	1	6		3	3	3	4	4
Permitted Phases												
Detector Phase	5	5	2	2 3	1	6		3	3	3	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0		6.0	6.0		5.0	5.0	5.0	6.0	6.0
Minimum Split (s)	12.0	12.0	12.0		12.0	12.0		11.0	11.0	11.0	12.0	12.0
Total Split (s)	12.0	12.0	24.0		12.0	24.0		19.0	19.0	19.0	12.0	12.0
Total Split (%)	12.0%	12.0%	24.0%		12.0%	24.0%		19.0%	19.0%	19.0%	12.0%	12.0%
Maximum Green (s)	6.0	6.0	18.0		6.0	18.0		13.0	13.0	13.0	6.0	6.0
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min		None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.21	0.65	0.23	0.15	0.54		0.52	0.52	0.17		0.29
Control Delay (s/veh)		44.0	21.3	3.0	38.0	24.5		41.1	41.1	0.8		16.0
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)		44.0	21.3	3.0	38.0	24.5		41.1	41.1	0.8		16.0
Queue Length 50th (ft)		21	248	12	15	237		102	102	0		1
Queue Length 95th (ft)		50	#606	67	m27	352		122	122	0		12
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150			300		300		
Base Capacity (vph)		165	1971	1226	156	2681		335	335	475		206
Starvation Cap Reductn		0	0	0	0	0		0	0	0		0
Spillback Cap Reductn		0	0	0	0	0		0	0	0		0
Storage Cap Reductn		0	0	0	0	0		0	0	0		0
Reduced v/c Ratio		0.21	0.65	0.23	0.15	0.54		0.50	0.50	0.16		0.29

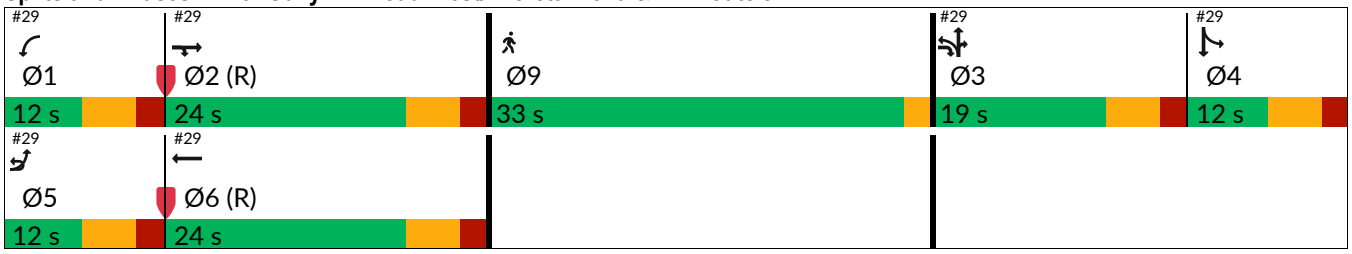
Intersection Summary
Cycle Length: 100

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	33	
Future Volume (vph)	33	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	57	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		33.0
Total Split (s)		33.0
Total Split (%)		33%
Maximum Green (s)		31.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		24.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100
Offset: 27 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
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.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



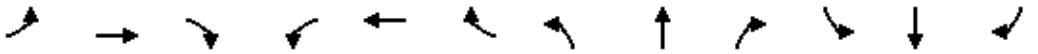
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Future Volume (vph)	2	30	1222	264	23	1364	0	245	0	57	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	4964		1715	1715	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	4964		1715	1715	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1286	278	24	1451	0	336	0	78	0	2
RTOR Reduction (vph)	0	0	0	30	0	0	0	0	0	63	0	53
Lane Group Flow (vph)	0	34	1286	248	24	1451	0	168	168	15	0	6
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA
Protected Phases	5	5	2	2 3	1	6		3	3	3	4	4
Permitted Phases												
Actuated Green, G (s)		5.1	50.2	73.1	3.3	48.4		16.9	16.9	16.9		5.6
Effective Green, g (s)		7.1	52.2	75.1	5.3	50.4		18.9	18.9	18.9		7.6
Actuated g/C Ratio		0.07	0.52	0.75	0.05	0.50		0.19	0.19	0.19		0.08
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		122	1803	1120	91	2501		324	324	315		133
v/s Ratio Prot		c0.02	c0.37	0.17	0.01	0.29		c0.10	0.10	0.01		c0.00
v/s Ratio Perm												
v/c Ratio		0.28	0.71	0.22	0.26	0.58		0.52	0.52	0.05		0.05
Uniform Delay, d1		44.0	18.2	3.7	45.5	17.4		36.5	36.5	33.2		42.8
Progression Factor		1.00	1.00	1.00	0.87	1.26		1.00	1.00	1.00		1.00
Incremental Delay, d2		1.2	2.4	0.1	1.3	0.8		1.4	1.4	0.1		0.1
Delay (s)		45.3	20.6	3.8	40.9	22.8		37.9	37.9	33.2		43.0
Level of Service		D	C	A	D	C		D	D	C		D
Approach Delay (s/veh)			18.2			23.1			37.0			43.0
Approach LOS			B			C			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Future Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850		0.850	
Flt Protected				0.950			0.950	0.953		0.950		
Satd. Flow (prot)	1818	4964	1546	3351	3448	0	1681	1686	1583	1847	1652	0
Flt Permitted				0.950			0.950	0.953		0.950		
Satd. Flow (perm)	1818	4964	1546	3351	3448	0	1681	1686	1583	1847	1652	0
Satd. Flow (RTOR)			120		1				185		568	
Adj. Flow (vph)	0	1276	85	180	1402	18	124	1	165	24	0	5
Lane Group Flow (vph)	0	1276	85	180	1420	0	62	63	165	24	5	0
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Detector Phase	5	2	2 3	1	6		3	3	3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Total Split (s)	12.0	32.0		15.0	35.0		12.0	12.0	12.0	12.0	12.0	
Total Split (%)	12.0%	32.0%		15.0%	35.0%		12.0%	12.0%	12.0%	12.0%	12.0%	
Maximum Green (s)	6.0	26.0		9.0	29.0		6.0	6.0	6.0	6.0	6.0	
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)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	6.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	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	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.46	0.07	0.42	0.57		0.32	0.32	0.52	0.15	0.01	
Control Delay (s/veh)		15.6	3.8	43.0	9.5		43.6	43.7	10.5	43.5	0.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		15.6	3.8	43.0	9.5		43.6	43.7	10.5	43.5	0.0	
Queue Length 50th (ft)		286	13	55	229		40	40	0	15	0	
Queue Length 95th (ft)		372	m24	86	370		76	76	42	18	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)			225	200			90					
Base Capacity (vph)		2753	1134	432	2486		196	197	320	165	665	
Starvation Cap Reductn		0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0	
Storage Cap Reductn		0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio		0.46	0.07	0.42	0.57		0.32	0.32	0.52	0.15	0.01	

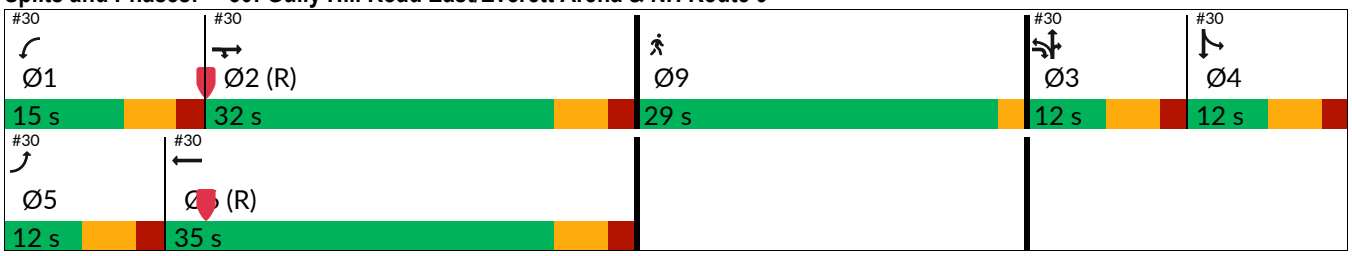
Intersection Summary
Cycle Length: 100

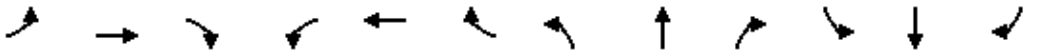
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 100
Offset: 57 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

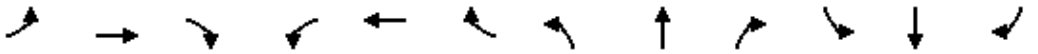




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Future Volume (vph)	0	1199	80	164	1276	16	109	1	145	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	6.0	4.0	4.0	
Lane Util. Factor		0.91	1.00	0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)		4964	1546	3351	3449		1681	1687	1583	1847	1652	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (perm)		4964	1546	3351	3449		1681	1687	1583	1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1276	85	180	1402	18	124	1	165	24	0	5
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	149	0	5	0
Lane Group Flow (vph)	0	1276	58	180	1420	0	62	63	16	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Actuated Green, G (s)		51.0	66.7	10.7	67.7		9.7	9.7	9.7	4.6	4.6	
Effective Green, g (s)		53.0	68.7	12.7	69.7		11.7	11.7	9.7	6.6	6.6	
Actuated g/C Ratio		0.53	0.69	0.13	0.70		0.12	0.12	0.10	0.07	0.07	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2630	1062	425	2403		196	197	153	121	109	
v/s Ratio Prot		0.26	0.04	0.05	c0.41		0.04	c0.04	0.01	c0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.49	0.05	0.42	0.59		0.32	0.32	0.10	0.20	0.00	
Uniform Delay, d1		14.9	5.1	40.3	7.8		40.5	40.5	41.2	44.2	43.6	
Progression Factor		0.97	5.84	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.7	1.1		0.9	0.9	0.3	0.8	0.0	
Delay (s)		14.9	29.8	41.0	8.9		41.4	41.4	41.5	45.0	43.6	
Level of Service		B	C	D	A		D	D	D	D	D	
Approach Delay (s/veh)		15.8			12.5			41.5			44.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

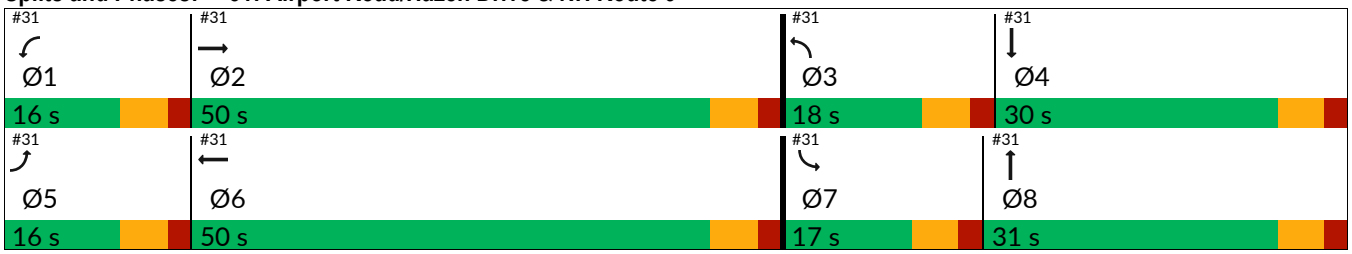


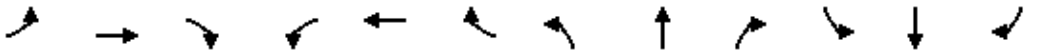
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Future Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			226			201			271			418
Adj. Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
Lane Group Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	16.0	50.0		16.0	50.0		18.0	31.0		17.0	30.0	
Total Split (%)	14.0%	43.9%		14.0%	43.9%		15.8%	27.2%		14.9%	26.3%	
Maximum Green (s)	10.0	44.0		10.0	44.0		12.0	25.0		11.0	24.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.23	0.87	0.15	0.56	0.62	0.04	0.67	0.27	0.17	0.48	0.74	0.27
Control Delay (s/veh)	49.3	37.6	0.2	53.1	26.3	0.1	54.6	37.0	0.2	55.9	52.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.3	37.6	0.2	53.1	26.3	0.1	54.6	37.0	0.2	55.9	52.9	0.4
Queue Length 50th (ft)	24	419	0	75	286	0	103	76	0	62	186	0
Queue Length 95th (ft)	47	525	0	117	383	0	139	119	0	90	210	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	389	1488	1599	389	1568	1652	439	477	1599	210	442	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.82	0.15	0.54	0.62	0.04	0.65	0.26	0.17	0.43	0.62	0.27

Intersection Summary
Cycle Length: 114

Actuated Cycle Length: 107.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Future Volume (vph)	62	1091	216	199	923	60	236	103	225	64	195	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.89	0.89	0.89	0.95	0.95	0.95	0.83	0.83	0.83	0.71	0.71	0.71
Adj. Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	70	1226	243	209	972	63	284	124	271	90	275	418
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.2	43.3	110.2	9.7	46.8	110.2	11.6	25.1	110.2	8.1	21.6	110.2
Effective Green, g (s)	8.2	45.3	110.2	11.7	48.8	110.2	13.6	27.1	110.2	10.1	23.6	110.2
Actuated g/C Ratio	0.07	0.41	1.00	0.11	0.44	1.00	0.12	0.25	1.00	0.09	0.21	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	257	1420	1599	368	1529	1652	413	447	1599	158	389	1546
v/s Ratio Prot	0.02	c0.35		c0.06	0.28		c0.08	0.07		0.05	c0.15	
v/s Ratio Perm			0.15			0.04			0.17			c0.27
v/c Ratio	0.27	0.86	0.15	0.57	0.64	0.04	0.69	0.28	0.17	0.57	0.71	0.27
Uniform Delay, d1	48.2	29.6	0.0	46.8	23.8	0.0	46.3	33.6	0.0	48.0	40.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	5.7	0.2	2.0	0.9	0.0	4.7	0.3	0.2	4.7	5.8	0.4
Delay (s)	48.8	35.3	0.2	48.9	24.7	0.0	51.0	34.0	0.2	52.6	45.9	0.4
Level of Service	D	D	A	D	C	A	D	C	A	D	D	A
Approach Delay (s/veh)		30.4			27.5			27.6			22.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Future Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt			0.996				0.850			0.850		0.936
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1787	3323	0	1668	3455	1546	1668	1756	1492	3236	1761
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1787	3323	0	1668	3455	1546	1668	1756	1492	3236	1761
Satd. Flow (RTOR)			2				182			86		22
Adj. Flow (vph)	8	99	1236	36	35	961	354	127	263	62	379	132
Lane Group Flow (vph)	0	107	1272	0	35	961	354	127	263	62	379	230
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Detector Phase	5	5	2		1	6	6 4	8	8	8 1	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	17.0	17.0	46.0		12.0	41.0		26.0	26.0		23.0	23.0
Total Split (%)	12.2%	12.2%	33.1%		8.6%	29.5%		18.7%	18.7%		16.5%	16.5%
Maximum Green (s)	11.0	11.0	40.0		6.0	35.0		20.0	20.0		17.0	17.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.52	0.92		0.28	0.79	0.37	0.37	0.73	0.12	0.67	0.70
Control Delay (s/veh)		53.8	42.4		53.0	36.8	7.1	40.1	52.5	3.3	47.3	49.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		53.8	42.4		53.0	36.8	7.1	40.1	52.5	3.3	47.3	49.9
Queue Length 50th (ft)		70	447		23	313	56	76	171	0	126	136
Queue Length 95th (ft)		120	#545		56	396	113	134	#282	18	178	#236
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125		125	130		130	350	
Base Capacity (vph)		220	1380		126	1216	959	347	366	527	582	334
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.49	0.92		0.28	0.79	0.37	0.37	0.72	0.12	0.65	0.69

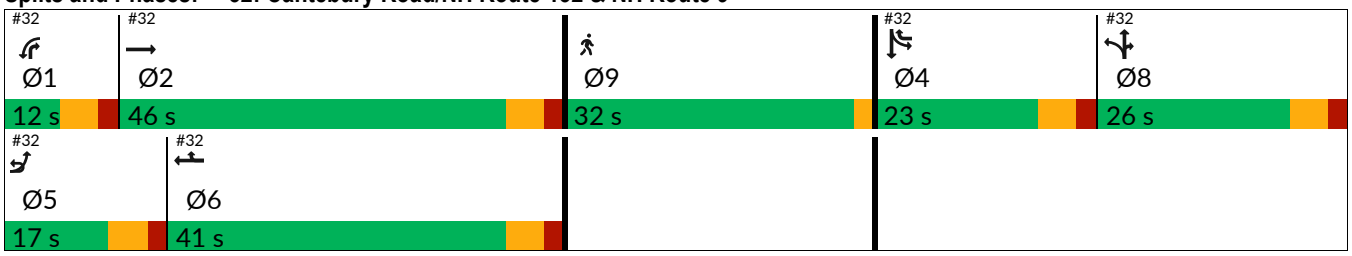
Intersection Summary
Cycle Length: 139

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	94	
Future Volume (vph)	94	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	98	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		23%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 105.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Future Volume (vph)	7	84	1051	31	33	903	333	114	237	56	364	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94
Flt Protected		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1787	3322		1668	3455	1546	1668	1756	1492	3236	1761
Flt Permitted		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1787	3322		1668	3455	1546	1668	1756	1492	3236	1761
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	8	99	1236	36	35	961	354	127	263	62	379	132
RTOR Reduction (vph)	0	0	1	0	0	0	78	0	0	43	0	18
Lane Group Flow (vph)	0	107	1271	0	35	961	276	127	263	19	379	212
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Actuated Green, G (s)		10.2	41.9		4.7	36.4	59.0	19.7	19.7	30.4	16.6	16.6
Effective Green, g (s)		12.2	43.9		6.7	38.4	61.0	21.7	21.7	32.4	18.6	18.6
Actuated g/C Ratio		0.11	0.41		0.06	0.36	0.57	0.20	0.20	0.30	0.17	0.17
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		203	1364		104	1241	882	338	356	452	563	306
v/s Ratio Prot		c0.06	c0.38		0.02	0.28	0.18	0.08	c0.15	0.01	0.12	c0.12
v/s Ratio Perm												
v/c Ratio		0.53	0.93		0.34	0.77	0.31	0.38	0.74	0.04	0.67	0.69
Uniform Delay, d1		44.6	30.1		48.0	30.4	12.0	36.8	39.9	26.3	41.3	41.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.5	11.6		1.9	3.1	0.2	0.7	7.8	0.0	3.2	6.6
Delay (s)		47.1	41.7		49.9	33.5	12.2	37.5	47.7	26.3	44.5	48.1
Level of Service		D	D		D	C	B	D	D	C	D	D
Approach Delay (s/veh)			42.1			28.3			41.9			45.8
Approach LOS			D			C			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	106.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	94
Future Volume (vph)	94
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

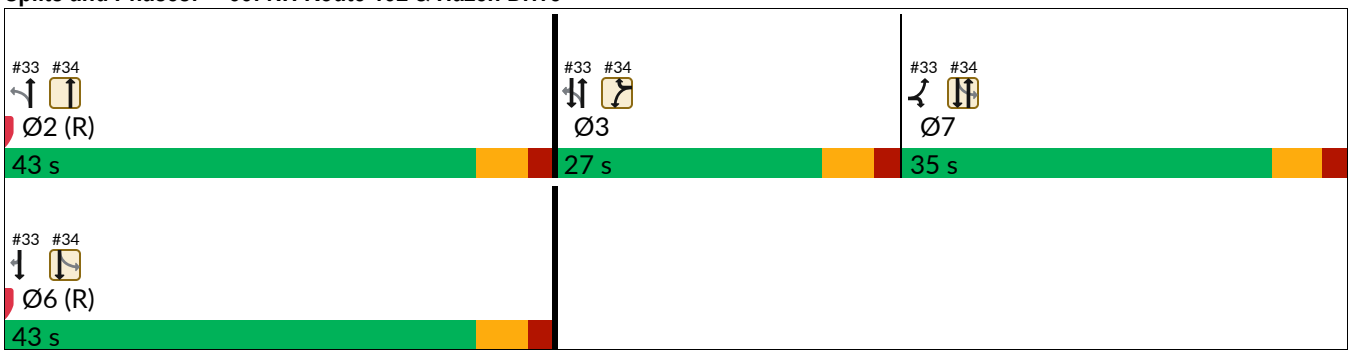
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	490	58	7	587	486	142			
Future Volume (vph)	490	58	7	587	486	142			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	3467	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.994					
Satd. Flow (perm)	3467	1599	0	1808	1881	1546			
Satd. Flow (RTOR)		69				156			
Adj. Flow (vph)	583	69	9	734	534	156			
Lane Group Flow (vph)	583	69	0	743	534	156			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					43.0	27.0	43.0
Total Split (%)	33.3%	33.3%					41%	26%	41%
Maximum Green (s)	29.0	29.0					37.0	21.0	37.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.57	0.13		0.65	0.45	0.15			
Control Delay (s/veh)	34.0	7.4		15.8	13.7	4.4			
Queue Delay	0.1	0.0		0.0	1.1	0.0			
Total Delay (s/veh)	34.1	7.4		15.8	14.8	4.4			
Queue Length 50th (ft)	172	0		292	172	6			
Queue Length 95th (ft)	209	28		336	278	m29			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	1023	520		1126	1171	1021			
Starvation Cap Reductn	0	0		0	388	0			
Spillback Cap Reductn	31	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.59	0.13		0.66	0.68	0.15			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	490	58	7	587	486	142
Future Volume (vph)	490	58	7	587	486	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3467	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	3467	1599		1807	1881	1546
Peak-hour factor, PHF	0.84	0.84	0.80	0.80	0.91	0.91
Adj. Flow (vph)	583	69	9	734	534	156
RTOR Reduction (vph)	0	49	0	0	0	58
Lane Group Flow (vph)	583	20	0	743	534	98
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	29.0	29.0		64.0	64.0	64.0
Effective Green, g (s)	31.0	31.0		66.0	66.0	66.0
Actuated g/C Ratio	0.30	0.30		0.63	0.63	0.63
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1023	472		1135	1182	971
v/s Ratio Prot	c0.17	0.01			0.28	
v/s Ratio Perm				c0.41		0.06
v/c Ratio	0.57	0.04		0.65	0.45	0.10
Uniform Delay, d1	31.4	26.4		12.3	10.1	7.7
Progression Factor	1.00	1.00		1.00	1.22	3.16
Incremental Delay, d2	0.7	0.0		1.4	0.2	0.0
Delay (s)	32.1	26.5		13.7	12.6	24.5
Level of Service	C	C		B	B	C
Approach Delay (s/veh)	31.5			13.7	15.3	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

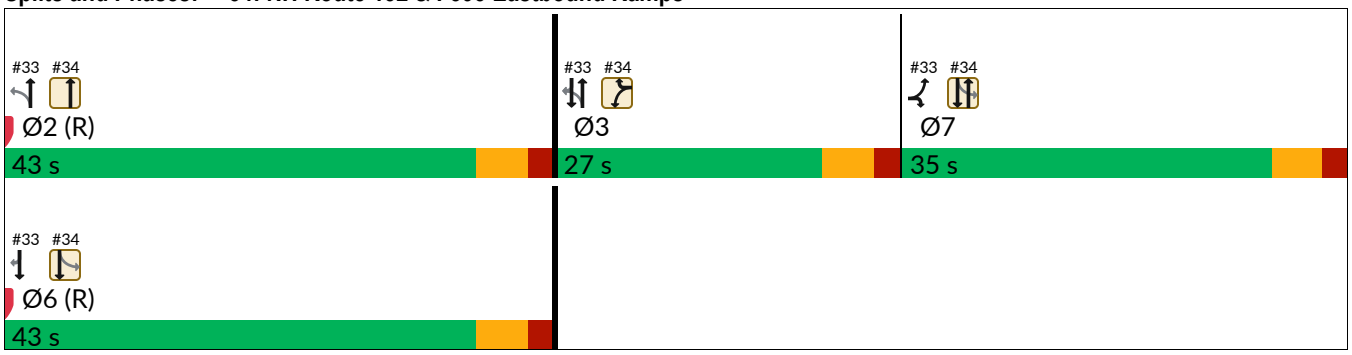
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	273	154	869	217	44	370			
Future Volume (vph)	273	154	869	217	44	370			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.970						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3351	0	1728	1818			
Flt Permitted	0.950				0.159				
Satd. Flow (perm)	1787	1599	3351	0	289	1818			
Satd. Flow (RTOR)		147	71						
Adj. Flow (vph)	307	173	1073	268	47	398			
Lane Group Flow (vph)	307	173	1341	0	47	398			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	27.0	27.0					43.0	43.0	35.0
Total Split (%)	25.7%	25.7%					41%	41%	33%
Maximum Green (s)	21.0	21.0					37.0	37.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.78	0.37	0.56		0.23	0.31			
Control Delay (s/veh)	53.6	10.8	4.8		8.8	6.7			
Queue Delay	0.0	0.0	0.6		0.0	0.0			
Total Delay (s/veh)	53.6	10.8	5.4		8.8	6.7			
Queue Length 50th (ft)	197	14	80		10	89			
Queue Length 95th (ft)	#323	69	124		28	131			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	394	468	2382		203	1281			
Starvation Cap Reductn	0	0	584		0	0			
Spillback Cap Reductn	0	0	0		0	3			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.78	0.37	0.75		0.23	0.31			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

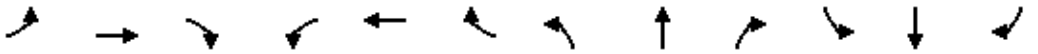


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	273	154	869	217	44	370
Future Volume (vph)	273	154	869	217	44	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3352		1728	1818
Flt Permitted	0.95	1.00	1.00		0.16	1.00
Satd. Flow (perm)	1787	1599	3352		289	1818
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.93	0.93
Adj. Flow (vph)	307	173	1073	268	47	398
RTOR Reduction (vph)	0	115	21	0	0	0
Lane Group Flow (vph)	307	58	1320	0	47	398
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	21.2	21.2	71.8		71.8	71.8
Effective Green, g (s)	23.2	23.2	73.8		73.8	73.8
Actuated g/C Ratio	0.22	0.22	0.70		0.70	0.70
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	394	353	2355		203	1277
v/s Ratio Prot	c0.17	0.04	c0.39			0.22
v/s Ratio Perm					0.16	
v/c Ratio	0.78	0.17	0.56		0.23	0.31
Uniform Delay, d1	38.5	33.1	7.6		5.5	5.9
Progression Factor	1.00	1.00	0.56		1.00	1.00
Incremental Delay, d2	9.4	0.2	0.2		0.6	0.1
Delay (s)	47.9	33.3	4.5		6.1	6.1
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	42.6		4.5			6.1
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

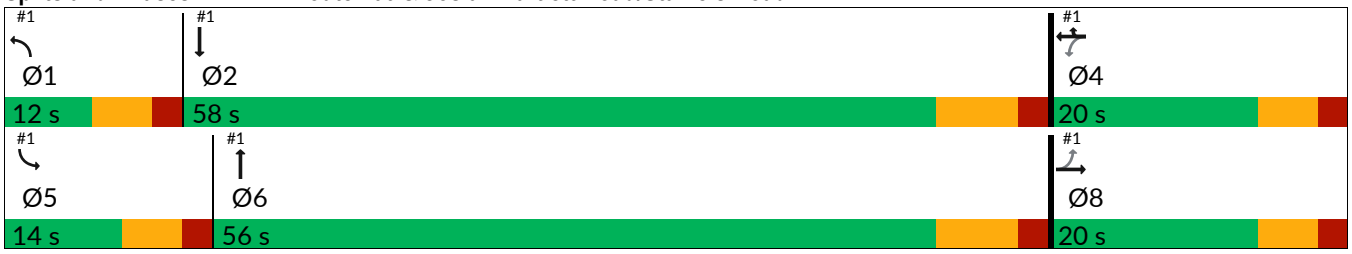
2027 Mitigated Opening Year Build Saturday Midday Peak-Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Future Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.981				0.850		0.989			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1864	0	0	1805	1615	1787	3535	0	1787	3571	0
Flt Permitted					0.748		0.950			0.950		
Satd. Flow (perm)	0	1864	0	0	1421	1615	1787	3535	0	1787	3571	0
Satd. Flow (RTOR)		2				127		14			1	
Adj. Flow (vph)	0	12	2	78	0	45	5	916	70	35	1104	7
Lane Group Flow (vph)	0	14	0	0	78	45	5	986	0	35	1111	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	20.0	20.0		20.0	20.0	20.0	12.0	56.0		14.0	58.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%	22.2%	13.3%	62.2%		15.6%	64.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	6.0	48.5		8.0	50.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.27	0.11	0.03	0.43		0.16	0.45	
Control Delay (s/veh)		22.3			26.2	0.5	31.2	9.4		30.0	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		22.3			26.2	0.5	31.2	9.4		30.0	7.6	
Queue Length 50th (ft)		3			17	0	1	70		8	84	
Queue Length 95th (ft)		9			61	0	13	218		41	218	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		575			437	585	206	3046		275	3141	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.02			0.18	0.08	0.02	0.32		0.13	0.35	

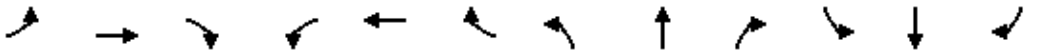
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 56.7
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Future Volume (vph)	0	5	1	59	0	34	5	834	64	29	927	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1863			1805	1615	1787	3536		1787	3571	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1863			1422	1615	1787	3536		1787	3571	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.84	0.84	0.84
Adj. Flow (vph)	0	12	2	78	0	45	5	916	70	35	1104	7
RTOR Reduction (vph)	0	2	0	0	0	38	0	6	0	0	0	0
Lane Group Flow (vph)	0	12	0	0	78	7	5	980	0	35	1111	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.4			7.4	7.4	0.8	33.3		2.4	34.9	
Effective Green, g (s)		9.4			9.4	9.4	0.8	35.3		2.4	36.9	
Actuated g/C Ratio		0.15			0.15	0.15	0.01	0.56		0.04	0.59	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		279			213	242	22	1993		68	2104	
v/s Ratio Prot		0.01				0.00	0.00	0.28		c0.02	c0.31	
v/s Ratio Perm					c0.05							
v/c Ratio		0.04			0.37	0.03	0.23	0.49		0.51	0.53	
Uniform Delay, d1		22.8			23.9	22.7	30.6	8.2		29.5	7.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.1	0.0	5.2	0.2		6.4	0.2	
Delay (s)		22.8			25.0	22.7	35.8	8.4		36.0	7.9	
Level of Service		C			C	C	D	A		D	A	
Approach Delay (s/veh)		22.8			24.2			8.6			8.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	15.5
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

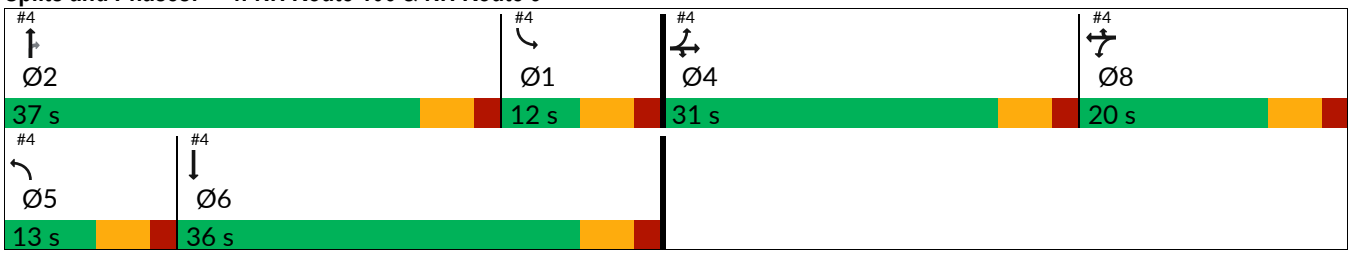


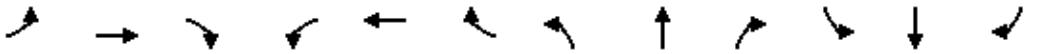
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Future Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			229			229			407			796
Adj. Flow (vph)	795	366	70	415	404	33	73	706	407	52	852	901
Lane Group Flow (vph)	795	366	70	415	404	33	73	706	407	52	852	901
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	31.0	31.0	31.0	20.0	20.0	20.0	13.0	37.0	37.0	12.0	36.0	
Total Split (%)	31.0%	31.0%	31.0%	20.0%	20.0%	20.0%	13.0%	37.0%	37.0%	12.0%	36.0%	
Maximum Green (s)	25.0	25.0	25.0	14.0	14.0	14.0	7.0	31.0	31.0	6.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.84	0.71	0.12	0.73	0.69	0.07	0.45	0.65	0.53	0.33	0.79	0.50
Control Delay (s/veh)	42.5	41.0	0.4	47.3	45.3	0.3	52.7	31.5	5.4	49.0	36.0	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.5	41.0	0.4	47.3	45.3	0.3	52.7	31.5	5.4	49.0	36.0	1.0
Queue Length 50th (ft)	252	215	0	133	131	0	45	202	0	32	258	0
Queue Length 95th (ft)	#356	#332	0	#189	182	0	91	261	65	71	333	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	981	532	614	581	599	457	168	1236	814	163	1198	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.69	0.11	0.71	0.67	0.07	0.43	0.57	0.50	0.32	0.71	0.50

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 93.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Future Volume (vph)	763	351	67	369	360	29	69	664	383	48	784	829
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	795	366	70	415	404	33	73	706	407	52	852	901
RTOR Reduction (vph)	0	0	50	0	0	28	0	0	281	0	0	0
Lane Group Flow (vph)	795	366	20	415	404	5	73	706	126	52	852	901
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	24.5	24.5	24.5	13.8	13.8	13.8	5.3	27.4	27.4	5.3	27.4	95.0
Effective Green, g (s)	26.5	26.5	26.5	15.8	15.8	15.8	7.3	29.4	29.4	7.3	29.4	95.0
Actuated g/C Ratio	0.28	0.28	0.28	0.17	0.17	0.17	0.08	0.31	0.31	0.08	0.31	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	934	507	431	557	574	257	132	1069	478	132	1069	1812
v/s Ratio Prot	c0.24	0.20	0.01	c0.12	0.12	0.00	0.04	c0.20		0.03	c0.25	
v/s Ratio Perm									0.08			0.50
v/c Ratio	0.85	0.72	0.05	0.75	0.70	0.02	0.55	0.66	0.26	0.39	0.80	0.50
Uniform Delay, d1	32.4	30.9	25.0	37.7	37.4	33.1	42.3	28.5	24.7	41.7	30.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	5.0	0.0	5.4	3.9	0.0	4.9	1.5	0.3	1.9	4.2	1.0
Delay (s)	39.9	36.0	25.1	43.1	41.3	33.2	47.2	30.0	25.0	43.7	34.3	1.0
Level of Service	D	D	C	D	D	C	D	C	C	D	C	A
Approach Delay (s/veh)		37.9			41.8			29.3			17.9	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	187	0	301	7	928	27	279	1123	9
Future Volume (vph)	5	0	10	187	0	301	7	928	27	279	1123	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.996			0.999	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1805	1615	1745	0	1669	1728	3441	0	1787	3571	0
Flt Permitted		0.950		0.440			0.950			0.950		
Satd. Flow (perm)	0	1805	1615	808	0	1669	1728	3441	0	1787	3571	0
Satd. Flow (RTOR)			229			344		3			1	
Adj. Flow (vph)	10	0	20	237	0	381	7	987	29	303	1221	10
Lane Group Flow (vph)	0	10	20	237	0	381	7	1016	0	303	1231	0
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Detector Phase	4	4	4	3		3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0	6.0	10.0		6.0	10.0	
Minimum Split (s)	12.0	12.0	12.0	12.0		12.0	12.0	16.0		12.0	16.0	
Total Split (s)	12.0	12.0	12.0	19.0		19.0	12.0	42.0		27.0	57.0	
Total Split (%)	12.0%	12.0%	12.0%	19.0%		19.0%	12.0%	42.0%		27.0%	57.0%	
Maximum Green (s)	6.0	6.0	6.0	13.0		13.0	6.0	36.0		21.0	51.0	
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)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	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	3.0		3.0	3.0	
Recall Mode	None	None	None	None		None	None	Min		None	Min	
v/c Ratio		0.06	0.06	0.68		0.58	0.04	0.77		0.72	0.54	
Control Delay (s/veh)		43.6	0.3	41.1		8.9	43.3	29.2		44.5	11.2	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		43.6	0.3	41.1		8.9	43.3	29.2		44.5	11.2	
Queue Length 50th (ft)		6	0	128		18	4	296		181	200	
Queue Length 95th (ft)		13	0	173		54	18	378		#299	355	
Internal Link Dist (ft)		210			308			1555			2106	
Turn Bay Length (ft)			50			125	400			600		
Base Capacity (vph)		173	361	372		678	166	1572		494	2446	
Starvation Cap Reductn		0	0	0		0	0	0		0	0	
Spillback Cap Reductn		0	0	0		0	0	0		0	0	
Storage Cap Reductn		0	0	0		0	0	0		0	0	
Reduced v/c Ratio		0.06	0.06	0.64		0.56	0.04	0.65		0.61	0.50	

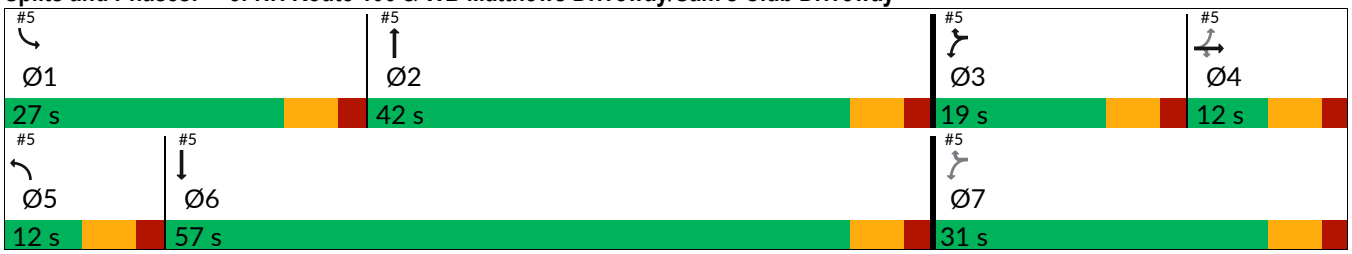
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 87
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	12.0
Total Split (s)	31.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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

Splits and Phases: 5: NH Route 106 & WB Matthews Driveway/Sam's Club Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	187	0	301	7	928	27	279	1123	9
Future Volume (vph)	5	0	10	187	0	301	7	928	27	279	1123	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	13	11	11	11	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615	1745		1669	1728	3440		1787	3570	
Flt Permitted		0.95	1.00	0.44		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1805	1615	807		1669	1728	3440		1787	3570	
Peak-hour factor, PHF	0.50	0.50	0.50	0.79	0.79	0.79	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	10	0	20	237	0	381	7	987	29	303	1221	10
RTOR Reduction (vph)	0	0	19	0	0	258	0	2	0	0	0	0
Lane Group Flow (vph)	0	10	1	237	0	123	7	1014	0	303	1231	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Actuated Green, G (s)		3.1	3.1	21.5		21.5	1.0	36.4		18.3	53.7	
Effective Green, g (s)		5.1	5.1	23.5		23.5	3.0	38.4		20.3	55.7	
Actuated g/C Ratio		0.05	0.05	0.25		0.25	0.03	0.41		0.22	0.59	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		97	87	344		416	55	1402		385	2110	
v/s Ratio Prot				c0.11		0.05	0.00	c0.29		c0.17	0.34	
v/s Ratio Perm		0.01	0.00	c0.07		0.03						
v/c Ratio		0.10	0.01	0.69		0.30	0.13	0.72		0.79	0.58	
Uniform Delay, d1		42.4	42.2	30.8		28.6	44.3	23.4		34.9	12.0	
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1	5.7		0.4	1.0	1.9		10.2	0.4	
Delay (s)		42.8	42.2	36.5		29.0	45.4	25.3		45.1	12.4	
Level of Service		D	D	D		C	D	C		D	B	
Approach Delay (s/veh)		42.4			31.9			25.5			18.9	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

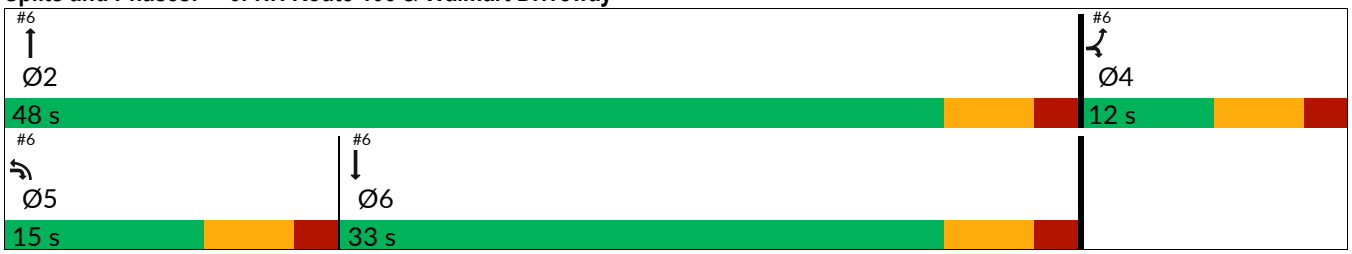
c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	223	215	1074	1123	197
Future Volume (vph)	82	223	215	1074	1123	197
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.978	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1865	1615	1668	3574	3496	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1865	1615	1668	3574	3496	0
Satd. Flow (RTOR)		40			46	
Adj. Flow (vph)	85	232	224	1119	1182	207
Lane Group Flow (vph)	85	232	224	1119	1389	0
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Detector Phase	4	4 5	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	12.0		15.0	48.0	33.0	
Total Split (%)	20.0%		25.0%	80.0%	55.0%	
Maximum Green (s)	6.0		9.0	42.0	27.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.34	0.36	0.73	0.43	0.82	
Control Delay (s/veh)	27.8	12.8	40.1	3.7	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.8	12.8	40.1	3.7	17.9	
Queue Length 50th (ft)	28	47	78	60	203	
Queue Length 95th (ft)	65	95	#174	84	287	
Internal Link Dist (ft)	488			959	1555	
Turn Bay Length (ft)		100	400			
Base Capacity (vph)	251	649	308	2648	1731	
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	0.34	0.36	0.73	0.42	0.80	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 59.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 6: NH Route 106 & Walmart Driveway



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	223	215	1074	1123	197
Future Volume (vph)	82	223	215	1074	1123	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1865	1615	1668	3574	3494	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1865	1615	1668	3574	3494	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.95	0.95
Adj. Flow (vph)	85	232	224	1119	1182	207
RTOR Reduction (vph)	0	25	0	0	24	0
Lane Group Flow (vph)	85	207	224	1119	1365	0
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	6.0	20.9	8.9	41.4	26.5	
Effective Green, g (s)	8.0	22.9	10.9	43.4	28.5	
Actuated g/C Ratio	0.13	0.39	0.18	0.73	0.48	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	251	622	306	2611	1676	
v/s Ratio Prot	0.05	c0.13	c0.13	0.31	c0.39	
v/s Ratio Perm						
v/c Ratio	0.34	0.33	0.73	0.43	0.81	
Uniform Delay, d1	23.3	12.9	22.9	3.1	13.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.3	8.7	0.1	3.2	
Delay (s)	24.1	13.2	31.6	3.3	16.4	
Level of Service	C	B	C	A	B	
Approach Delay (s/veh)	16.1			8.0	16.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

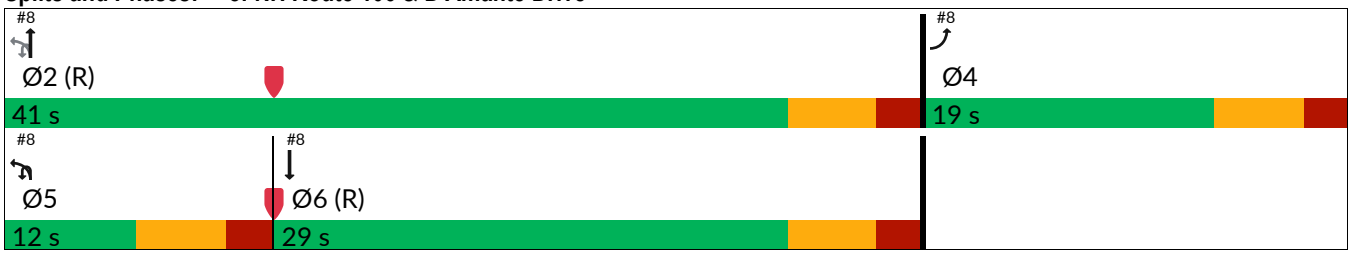
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	478	205	2	230	767	746	556
Future Volume (vph)	478	205	2	230	767	746	556
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	0.95
Frt	0.955					0.936	
Flt Protected	0.966			0.950			
Satd. Flow (prot)	3287	0	0	1745	3610	3266	0
Flt Permitted	0.966			0.140			
Satd. Flow (perm)	3287	0	0	257	3610	3266	0
Satd. Flow (RTOR)	111					384	
Adj. Flow (vph)	556	238	2	261	872	777	579
Lane Group Flow (vph)	794	0	0	263	872	1356	0
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Detector Phase	4		5	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	11.0	
Total Split (s)	19.0		12.0	12.0	41.0	29.0	
Total Split (%)	31.7%		20.0%	20.0%	68.3%	48.3%	
Maximum Green (s)	13.0		6.0	6.0	35.0	23.0	
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)	-2.0			-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0	
Lead/Lag			Lead	Lead		Lag	
Lead-Lag Optimize?			Yes	Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min	
v/c Ratio	0.87			0.73	0.39	0.86	
Control Delay (s/veh)	31.2			23.4	6.5	29.1	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay (s/veh)	31.2			23.4	6.5	29.1	
Queue Length 50th (ft)	122			38	71	245	
Queue Length 95th (ft)	#200			#133	97	#324	
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			
Base Capacity (vph)	913			359	2226	1584	
Starvation Cap Reductn	0			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.87			0.73	0.39	0.86	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 1 (2%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	478	205	2	230	767	746	556
Future Volume (vph)	478	205	2	230	767	746	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0			4.0	4.0	4.0	
Lane Util. Factor	0.97			1.00	0.95	0.95	
Frt	0.96			1.00	1.00	0.94	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	3288			1745	3610	3266	
Flt Permitted	0.97			0.14	1.00	1.00	
Satd. Flow (perm)	3288			257	3610	3266	
Peak-hour factor, PHF	0.86	0.86	0.88	0.88	0.88	0.96	0.96
Adj. Flow (vph)	556	238	2	261	872	777	579
RTOR Reduction (vph)	83	0	0	0	0	227	0
Lane Group Flow (vph)	711	0	0	263	872	1129	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Actuated Green, G (s)	13.2			34.8	34.8	22.6	
Effective Green, g (s)	15.2			36.8	36.8	24.6	
Actuated g/C Ratio	0.25			0.61	0.61	0.41	
Clearance Time (s)	6.0			6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	3.0	
Lane Grp Cap (vph)	832			360	2214	1339	
v/s Ratio Prot	c0.22			c0.10	0.24	c0.35	
v/s Ratio Perm				0.35			
v/c Ratio	0.85			0.73	0.39	0.84	
Uniform Delay, d1	21.3			11.2	5.9	16.0	
Progression Factor	1.00			1.00	1.00	2.10	
Incremental Delay, d2	8.6			7.4	0.5	4.6	
Delay (s)	29.9			18.6	6.4	38.2	
Level of Service	C			B	A	D	
Approach Delay (s/veh)	29.9				9.3	38.2	
Approach LOS	C				A	D	

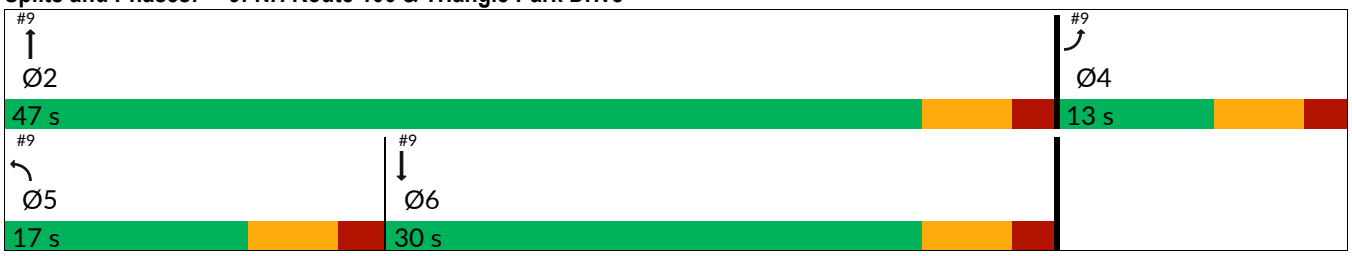
Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	156	198	978	855	16
Future Volume (vph)	21	156	198	978	855	16
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.881				0.997	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1886	0	1925	3610	3564	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1886	0	1925	3610	3564	0
Satd. Flow (RTOR)	181				4	
Adj. Flow (vph)	24	181	202	998	929	17
Lane Group Flow (vph)	205	0	202	998	946	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	13.0		17.0	47.0	30.0	
Total Split (%)	21.7%		28.3%	78.3%	50.0%	
Maximum Green (s)	7.0		11.0	41.0	24.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.45		0.48	0.40	0.58	
Control Delay (s/veh)	9.7		24.3	4.0	13.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	9.7		24.3	4.0	13.8	
Queue Length 50th (ft)	7		61	51	128	
Queue Length 95th (ft)	52		120	77	186	
Internal Link Dist (ft)	1073			1451	1013	
Turn Bay Length (ft)			150			
Base Capacity (vph)	472		476	2883	1764	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.43		0.42	0.35	0.54	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 54
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: NH Route 106 & Triangle Park Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	156	198	978	855	16
Future Volume (vph)	21	156	198	978	855	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.88		1.00	1.00	1.00	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1886		1925	3610	3565	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1886		1925	3610	3565	
Peak-hour factor, PHF	0.86	0.86	0.98	0.98	0.92	0.92
Adj. Flow (vph)	24	181	202	998	929	17
RTOR Reduction (vph)	153	0	0	0	2	0
Lane Group Flow (vph)	52	0	202	998	944	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	6.6		7.9	36.6	22.7	
Effective Green, g (s)	8.6		9.9	38.6	24.7	
Actuated g/C Ratio	0.16		0.18	0.70	0.45	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	293		345	2524	1595	
v/s Ratio Prot	c0.03		c0.10	0.28	c0.26	
v/s Ratio Perm						
v/c Ratio	0.18		0.59	0.40	0.59	
Uniform Delay, d1	20.2		20.8	3.4	11.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.3		2.5	0.1	0.6	
Delay (s)	20.5		23.3	3.6	12.1	
Level of Service	C		C	A	B	
Approach Delay (s/veh)	20.5			6.9	12.1	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

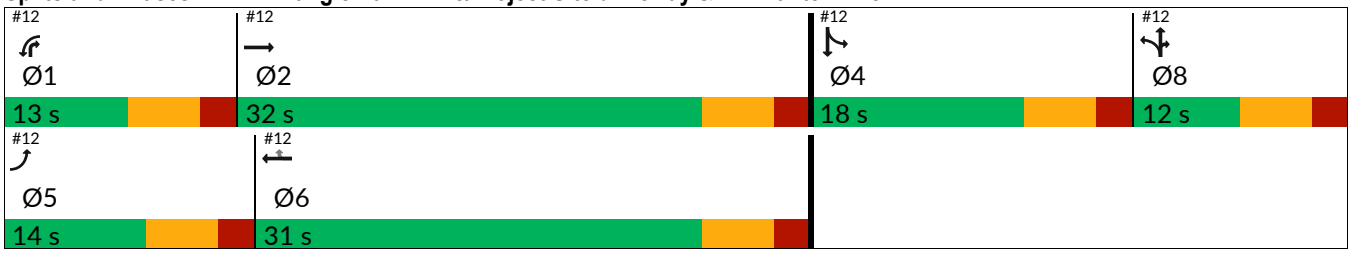
c Critical Lane Group

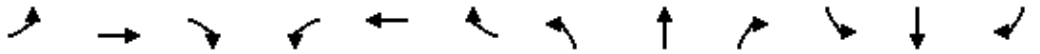
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Future Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.955				0.850			0.850		0.885	
Flt Protected	0.950			0.950				0.961		0.950	0.994	
Satd. Flow (prot)	1805	3333	0	1728	1881	1599	0	1826	1615	1681	1557	0
Flt Permitted	0.950			0.950				0.961		0.950	0.994	
Satd. Flow (perm)	1805	3333	0	1728	1881	1599	0	1826	1615	1681	1557	0
Satd. Flow (RTOR)		103				218			131		186	
Adj. Flow (vph)	189	411	178	91	522	174	123	28	57	282	29	186
Lane Group Flow (vph)	189	589	0	91	522	174	0	151	57	254	243	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	14.0	32.0		13.0	31.0	31.0	12.0	12.0		18.0	18.0	
Total Split (%)	18.7%	42.7%		17.3%	41.3%	41.3%	16.0%	16.0%		24.0%	24.0%	
Maximum Green (s)	8.0	26.0		7.0	25.0	25.0	6.0	6.0		12.0	12.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	0.0		-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	6.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.76	0.43		0.44	0.81	0.27		0.75	0.10	0.80	0.55	
Control Delay (s/veh)	53.0	15.0		37.9	33.5	2.6		57.6	0.4	49.7	13.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	53.0	15.0		37.9	33.5	2.6		57.6	0.4	49.7	13.2	
Queue Length 50th (ft)	87	85		40	213	0		70	0	122	24	
Queue Length 95th (ft)	#188	129		84	#364	24		#162	0	#248	93	
Internal Link Dist (ft)		981			380			958			623	
Turn Bay Length (ft)	50			250					170	250		
Base Capacity (vph)	248	1395		214	700	694		201	560	324	450	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.76	0.42		0.43	0.75	0.25		0.75	0.10	0.78	0.54	

Intersection Summary
Cycle Length: 75

Actuated Cycle Length: 72.7
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Future Volume (vph)	172	374	162	84	480	160	113	26	52	254	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	6.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	0.95		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (prot)	1805	3331		1728	1881	1599		1826	1615	1681	1557	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (perm)	1805	3331		1728	1881	1599		1826	1615	1681	1557	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	189	411	178	91	522	174	123	28	57	282	29	186
RTOR Reduction (vph)	0	63	0	0	0	117	0	0	42	0	151	0
Lane Group Flow (vph)	189	526	0	91	522	57	0	151	15	254	92	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Actuated Green, G (s)	8.0	26.7		5.5	24.2	24.2		6.0	17.5	11.8	11.8	
Effective Green, g (s)	10.0	28.7		7.5	26.2	24.2		8.0	19.5	13.8	13.8	
Actuated g/C Ratio	0.14	0.39		0.10	0.35	0.33		0.11	0.26	0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	243	1291		175	665	522		197	425	313	290	
v/s Ratio Prot	c0.10	0.16		0.05	c0.28			c0.08	0.01	c0.15	0.06	
v/s Ratio Perm						0.04						
v/c Ratio	0.78	0.41		0.52	0.78	0.11		0.77	0.04	0.81	0.32	
Uniform Delay, d1	30.9	16.5		31.5	21.4	17.4		32.1	20.3	28.9	26.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.5	0.2		2.8	6.1	0.1		16.2	0.0	14.7	0.6	
Delay (s)	45.4	16.7		34.3	27.4	17.5		48.3	20.3	43.5	26.7	
Level of Service	D	B		C	C	B		D	C	D	C	
Approach Delay (s/veh)		23.7			26.0			40.6			35.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

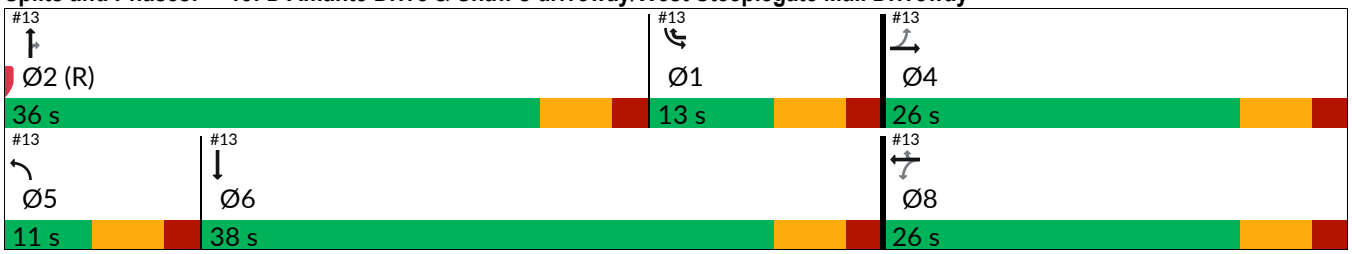
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Future Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.947				0.850			0.850		0.988	
Flt Protected		0.969			0.950		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1829	1636	1805	3490	1561	3385	3448	0
Flt Permitted		0.673			0.636		0.950			0.950		
Satd. Flow (perm)	0	2301	0	0	1224	1636	1805	3490	1561	3385	3448	0
Satd. Flow (RTOR)		218				131			134		16	
Adj. Flow (vph)	118	0	65	179	0	180	52	792	134	219	657	58
Lane Group Flow (vph)	0	183	0	0	179	180	52	792	134	219	715	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8			2			
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0		26.0	26.0	13.0	11.0	36.0	36.0	13.0	38.0	
Total Split (%)	34.7%	34.7%		34.7%	34.7%	17.3%	14.7%	48.0%	48.0%	17.3%	50.7%	
Maximum Green (s)	20.0	20.0		20.0	20.0	7.0	5.0	30.0	30.0	7.0	32.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	Min	
v/c Ratio		0.26			0.63	0.23	0.27	0.49	0.17	0.46	0.37	
Control Delay (s/veh)		3.9			35.3	4.7	34.8	16.0	3.3	36.6	14.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		3.9			35.3	4.7	34.8	16.0	3.3	36.6	14.9	
Queue Length 50th (ft)		0			75	12	22	135	0	52	140	
Queue Length 95th (ft)		m10			131	45	54	184	27	82	176	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		829			359	774	195	1640	804	478	1948	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		1			0	0	0	19	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22			0.50	0.23	0.27	0.49	0.17	0.46	0.37	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 1 (1%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Future Volume (vph)	97	0	53	161	0	162	46	697	118	208	624	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3311			1829	1636	1805	3490	1561	3385	3447	
Flt Permitted		0.67			0.64	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2299			1225	1636	1805	3490	1561	3385	3447	
Peak-hour factor, PHF	0.82	0.82	0.82	0.90	0.90	0.90	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	118	0	65	179	0	180	52	792	134	219	657	58
RTOR Reduction (vph)	0	141	0	0	0	78	0	0	76	0	7	0
Lane Group Flow (vph)	0	42	0	0	179	102	52	792	58	219	708	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)		15.4			15.4	26.3	3.7	30.7	30.7	10.9	37.9	
Effective Green, g (s)		17.4			17.4	30.3	5.7	32.7	32.7	12.9	39.9	
Actuated g/C Ratio		0.23			0.23	0.40	0.08	0.44	0.44	0.17	0.53	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		533			284	748	137	1521	680	582	1833	
v/s Ratio Prot						0.02	0.03	c0.23		0.06	c0.21	
v/s Ratio Perm		0.02			c0.15	0.04			0.04			
v/c Ratio		0.08			0.63	0.14	0.38	0.52	0.09	0.38	0.39	
Uniform Delay, d1		22.5			25.9	14.1	33.0	15.4	12.4	27.5	10.3	
Progression Factor		1.40			1.00	1.00	1.00	1.00	1.00	1.14	1.32	
Incremental Delay, d2		0.1			4.5	0.1	1.8	1.3	0.2	0.3	0.1	
Delay (s)		31.7			30.4	14.2	34.7	16.7	12.6	31.6	13.8	
Level of Service		C			C	B	C	B	B	C	B	
Approach Delay (s/veh)		31.7			22.3			17.1			17.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Future Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.993	
Flt Protected		0.991		0.950	0.960		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1658	1733	1507	1787	3455	1599	3502	3465	0
Flt Permitted		0.991		0.950	0.960		0.950			0.950		
Satd. Flow (perm)	0	1820	1561	1658	1733	1507	1787	3455	1599	3502	3465	0
Satd. Flow (RTOR)			131			169			250		6	
Adj. Flow (vph)	14	67	114	789	75	169	87	852	711	192	936	43
Lane Group Flow (vph)	0	81	114	434	430	169	87	852	711	192	979	0
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4	5	8	8	1	5	2	8	1	6	
Permitted Phases			4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	11.0	11.0	11.0	28.0	28.0	11.0	11.0	25.0	28.0	11.0	25.0	
Total Split (%)	14.7%	14.7%	14.7%	37.3%	37.3%	14.7%	14.7%	33.3%	37.3%	14.7%	33.3%	
Maximum Green (s)	5.0	5.0	5.0	22.0	22.0	5.0	5.0	19.0	22.0	5.0	19.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Min	C-Min	None	None	None	C-Min	None	None	
v/c Ratio		0.47	0.26	0.76	0.73	0.22	0.51	0.88	0.61	0.56	0.89	
Control Delay (s/veh)		42.0	5.4	29.4	27.0	2.3	44.0	37.8	7.1	30.4	33.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		42.0	5.4	29.4	27.0	2.3	44.0	37.8	7.1	30.4	33.6	
Queue Length 50th (ft)		37	0	85	84	0	40	200	98	41	~230	
Queue Length 95th (ft)		72	24	#327	#308	38	#90	#305	194	65	#371	
Internal Link Dist (ft)		532			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		172	435	568	593	773	169	973	1164	344	1099	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.47	0.26	0.76	0.73	0.22	0.51	0.88	0.61	0.56	0.89	

Intersection Summary

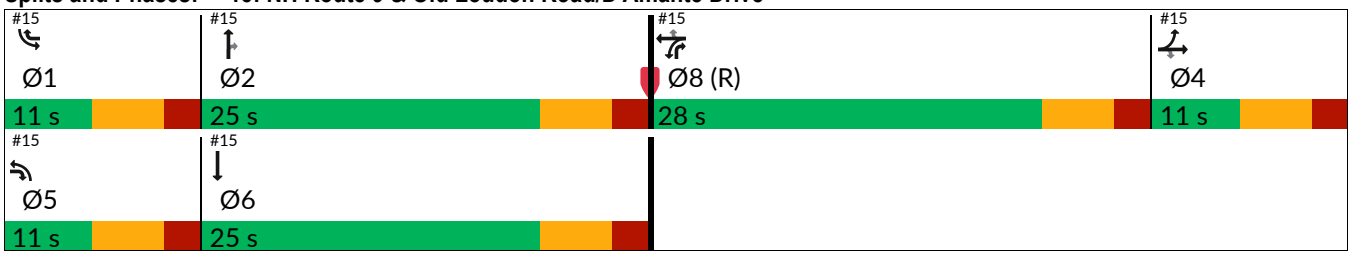
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 70 (93%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 80

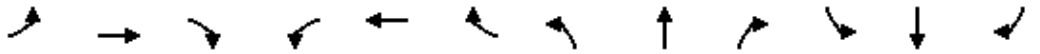
Control Type: Actuated-Coordinated

~ 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: 15: NH Route 9 & Old Loudon Road/D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Future Volume (vph)	12	56	95	734	70	157	81	792	661	171	833	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1821	1561	1658	1733	1507	1787	3455	1599	3502	3467	
Flt Permitted		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1821	1561	1658	1733	1507	1787	3455	1599	3502	3467	
Peak-hour factor, PHF	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	14	67	114	789	75	169	87	852	711	192	936	43
RTOR Reduction (vph)	0	0	96	0	0	100	0	0	98	0	4	0
Lane Group Flow (vph)	0	81	18	434	430	69	87	852	613	192	975	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4	5	8	8	1	5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		4.0	8.0	21.3	21.3	26.7	4.0	20.3	41.6	5.4	21.7	
Effective Green, g (s)		6.0	12.0	23.3	23.3	30.7	6.0	22.3	45.6	7.4	23.7	
Actuated g/C Ratio		0.08	0.16	0.31	0.31	0.41	0.08	0.30	0.61	0.10	0.32	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		145	333	515	538	616	142	1027	1057	345	1095	
v/s Ratio Prot		c0.04	0.00	c0.26	0.25	0.01	0.05	0.25	0.18	c0.05	c0.28	
v/s Ratio Perm			0.01			0.03			0.20			
v/c Ratio		0.56	0.05	0.84	0.80	0.11	0.61	0.83	0.58	0.56	0.89	
Uniform Delay, d1		33.2	26.7	24.1	23.7	13.7	33.4	24.6	8.9	32.2	24.4	
Progression Factor		1.00	1.00	0.82	0.83	1.15	1.00	1.00	1.00	0.76	0.84	
Incremental Delay, d2		4.6	0.1	14.4	11.0	0.1	7.6	5.7	0.8	1.7	8.2	
Delay (s)		37.8	26.8	34.2	30.7	15.8	41.0	30.2	9.7	26.1	28.7	
Level of Service		D	C	C	C	B	D	C	A	C	C	
Approach Delay (s/veh)		31.4			29.7			21.9			28.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

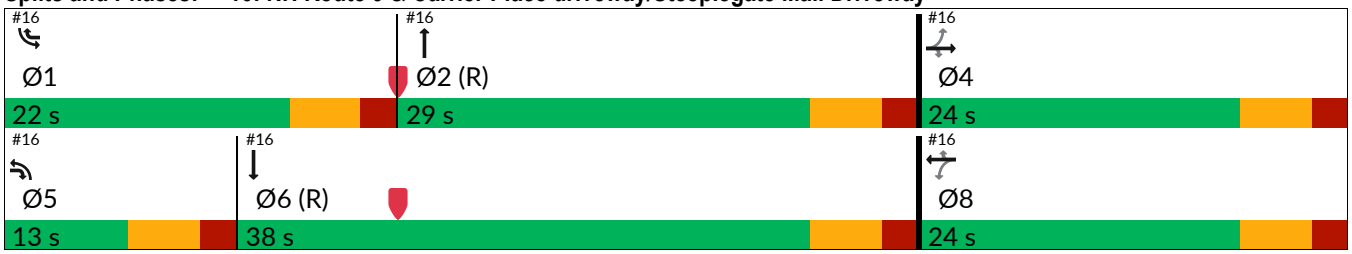
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	96	702	164	354	751	78
Future Volume (vph)	92	0	109	179	0	340	96	702	164	354	751	78
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.972			0.986	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3358	0	3467	3407	0
Flt Permitted		0.514			0.691		0.950			0.950		
Satd. Flow (perm)	0	977	1615	0	1330	1636	1847	3358	0	3467	3407	0
Satd. Flow (RTOR)			131			49		40			19	
Adj. Flow (vph)	102	0	121	199	0	378	105	771	180	402	853	89
Lane Group Flow (vph)	0	102	121	0	199	378	105	951	0	402	942	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	24.0	24.0	13.0	24.0	24.0	22.0	13.0	29.0		22.0	38.0	
Total Split (%)	32.0%	32.0%	17.3%	32.0%	32.0%	29.3%	17.3%	38.7%		29.3%	50.7%	
Maximum Green (s)	18.0	18.0	7.0	18.0	18.0	16.0	7.0	23.0		16.0	32.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46	0.17		0.66	0.46	0.46	0.69		0.55	0.56	
Control Delay (s/veh)		31.2	2.9		36.8	11.8	30.8	23.8		32.5	13.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.2	
Total Delay (s/veh)		31.2	2.9		36.8	11.8	30.8	23.8		32.5	13.3	
Queue Length 50th (ft)		40	0		84	88	25	234		73	168	
Queue Length 95th (ft)		83	24		148	137	m37	m285		138	136	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		260	736		354	875	235	1372		832	1671	
Starvation Cap Reductn		0	0		0	0	0	0		0	164	
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		0.39	0.16		0.56	0.43	0.45	0.69		0.48	0.63	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 12 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	96	702	164	354	751	78
Future Volume (vph)	92	0	109	179	0	340	96	702	164	354	751	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		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)		1805	1615		1829	1636	1847	3357		3467	3406	
Flt Permitted		0.51	1.00		0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		977	1615		1330	1636	1847	3357		3467	3406	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	102	0	121	199	0	378	105	771	180	402	853	89
RTOR Reduction (vph)	0	0	78	0	0	28	0	24	0	0	10	0
Lane Group Flow (vph)	0	102	43	0	199	350	105	927	0	402	932	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		15.1	22.5		15.1	28.9	7.4	28.1		13.8	34.5	
Effective Green, g (s)		17.1	26.5		17.1	32.9	9.4	30.1		15.8	36.5	
Actuated g/C Ratio		0.23	0.35		0.23	0.44	0.13	0.40		0.21	0.49	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		222	656		303	804	231	1347		730	1657	
v/s Ratio Prot			0.01			0.09	0.06	c0.28		c0.12	0.27	
v/s Ratio Perm		0.10	0.02		c0.15	0.12						
v/c Ratio		0.46	0.07		0.66	0.44	0.45	0.69		0.55	0.56	
Uniform Delay, d1		25.0	16.1		26.3	14.6	30.4	18.6		26.4	13.6	
Progression Factor		1.00	1.00		1.00	1.00	0.86	1.11		1.14	0.84	
Incremental Delay, d2		1.5	0.0		5.1	0.4	0.9	1.9		0.8	1.3	
Delay (s)		26.5	16.1		31.3	15.0	27.0	22.5		31.0	12.7	
Level of Service		C	B		C	B	C	C		C	B	
Approach Delay (s/veh)		20.8			20.6			23.0			18.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

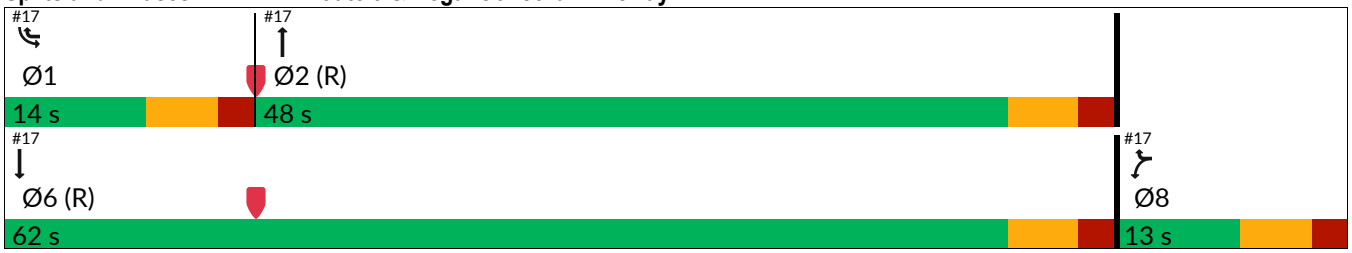
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	45	1093	37	50	1140
Future Volume (vph)	43	45	1093	37	50	1140
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.995			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	2006	1794	3438	0	1805	3490
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	2006	1794	3438	0	1805	3490
Satd. Flow (RTOR)		50	8			
Adj. Flow (vph)	48	50	1175	40	56	1267
Lane Group Flow (vph)	48	50	1215	0	56	1267
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Detector Phase	8	8 1	2		1	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		6.0	10.0
Minimum Split (s)	12.0		16.0		12.0	16.0
Total Split (s)	13.0		48.0		14.0	62.0
Total Split (%)	17.3%		64.0%		18.7%	82.7%
Maximum Green (s)	7.0		42.0		8.0	56.0
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.20	0.10	0.53		0.25	0.44
Control Delay (s/veh)	31.9	6.5	6.6		32.2	3.3
Queue Delay	0.0	0.0	0.2		0.0	0.0
Total Delay (s/veh)	31.9	6.5	6.8		32.2	3.3
Queue Length 50th (ft)	21	0	115		24	81
Queue Length 95th (ft)	51	23	98		56	106
Internal Link Dist (ft)	358		266			887
Turn Bay Length (ft)					360	
Base Capacity (vph)	247	515	2324		244	2863
Starvation Cap Reductn	0	0	322		0	0
Spillback Cap Reductn	0	0	0		0	9
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.19	0.10	0.61		0.23	0.44

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 12 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

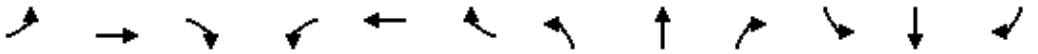
Splits and Phases: 17: NH Route 9 & Regal Concord Driveway



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	45	1093	37	50	1140
Future Volume (vph)	43	45	1093	37	50	1140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	12	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2006	1794	3438		1805	3490
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	2006	1794	3438		1805	3490
Peak-hour factor, PHF	0.90	0.90	0.93	0.93	0.90	0.90
Adj. Flow (vph)	48	50	1175	40	56	1267
RTOR Reduction (vph)	0	37	3	0	0	0
Lane Group Flow (vph)	48	13	1212	0	56	1267
Heavy Vehicles (%)	2%	2%	1%	1%	0%	0%
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Actuated Green, G (s)	5.7	17.9	45.1		6.2	57.3
Effective Green, g (s)	7.7	19.9	47.1		8.2	59.3
Actuated g/C Ratio	0.10	0.27	0.63		0.11	0.79
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	205	476	2159		197	2759
v/s Ratio Prot	c0.02	0.01	c0.35		0.03	c0.36
v/s Ratio Perm						
v/c Ratio	0.23	0.03	0.56		0.28	0.46
Uniform Delay, d1	30.9	20.4	8.0		30.7	2.6
Progression Factor	1.00	1.00	0.67		1.00	1.00
Incremental Delay, d2	0.6	0.0	0.9		0.8	0.6
Delay (s)	31.5	20.4	6.2		31.5	3.1
Level of Service	C	C	A		C	A
Approach Delay (s/veh)	25.9		6.2			4.3
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



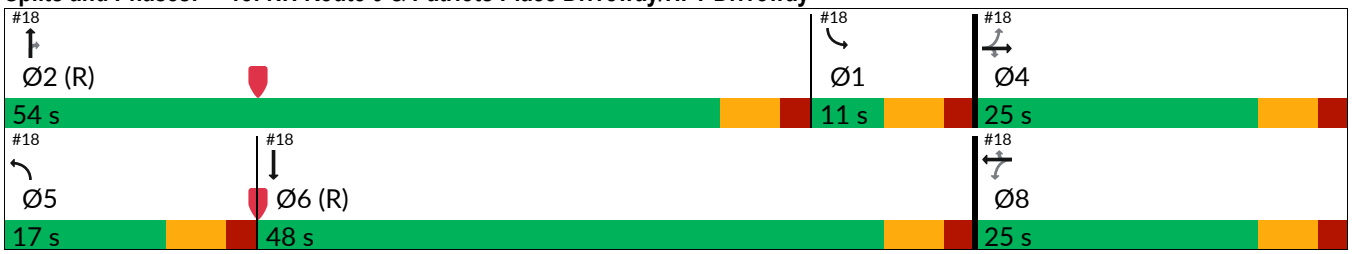
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Future Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.994	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3434	0
Flt Permitted		0.642			0.692		0.950			0.950		
Satd. Flow (perm)	0	1220	1615	0	1315	1615	1805	3490	1561	1787	3434	0
Satd. Flow (RTOR)			182			182			109		7	
Adj. Flow (vph)	57	17	150	131	13	27	101	1113	66	23	1115	48
Lane Group Flow (vph)	0	74	150	0	144	27	101	1113	66	23	1163	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	17.0	54.0	54.0	11.0	48.0	
Total Split (%)	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	18.9%	60.0%	60.0%	12.2%	53.3%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	11.0	48.0	48.0	5.0	42.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.34		0.60	0.06	0.43	0.48	0.06	0.13	0.58	
Control Delay (s/veh)		34.6	4.8		43.5	0.3	41.7	10.2	0.8	28.0	9.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		34.6	4.8		43.5	0.3	41.7	10.2	0.8	28.0	9.4	
Queue Length 50th (ft)		37	0		75	0	53	113	0	9	113	
Queue Length 95th (ft)		68	23		98	0	100	261	6	m21	147	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		284	516		306	516	264	2357	1089	172	1997	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.26	0.29		0.47	0.05	0.38	0.47	0.06	0.13	0.58	

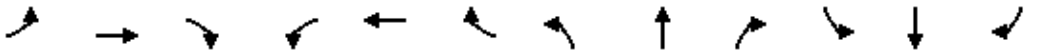
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

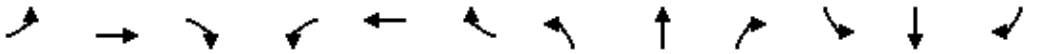




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Future Volume (vph)	48	14	126	93	9	19	90	991	59	20	970	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3434	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1219	1615		1316	1615	1805	3490	1561	1787	3434	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	57	17	150	131	13	27	101	1113	66	23	1115	48
RTOR Reduction (vph)	0	0	123	0	0	22	0	0	25	0	3	0
Lane Group Flow (vph)	0	74	28	0	144	5	101	1113	41	23	1160	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		14.5	14.5		14.5	14.5	8.4	54.4	54.4	3.1	49.1	
Effective Green, g (s)		16.5	16.5		16.5	16.5	10.4	56.4	56.4	5.1	51.1	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.12	0.63	0.63	0.06	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		223	296		241	296	208	2187	978	101	1949	
v/s Ratio Prot							0.06	c0.32		0.01	c0.34	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.03			
v/c Ratio		0.33	0.09		0.60	0.02	0.49	0.51	0.04	0.23	0.60	
Uniform Delay, d1		32.0	30.5		33.7	30.1	37.3	9.2	6.4	40.6	12.7	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.71	0.59	
Incremental Delay, d2		0.9	0.1		3.9	0.0	1.8	0.8	0.1	1.0	1.2	
Delay (s)		32.8	30.7		37.7	30.1	39.1	10.1	6.5	29.9	8.7	
Level of Service		C	C		D	C	D	B	A	C	A	
Approach Delay (s/veh)		31.4			36.5			12.2			9.1	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



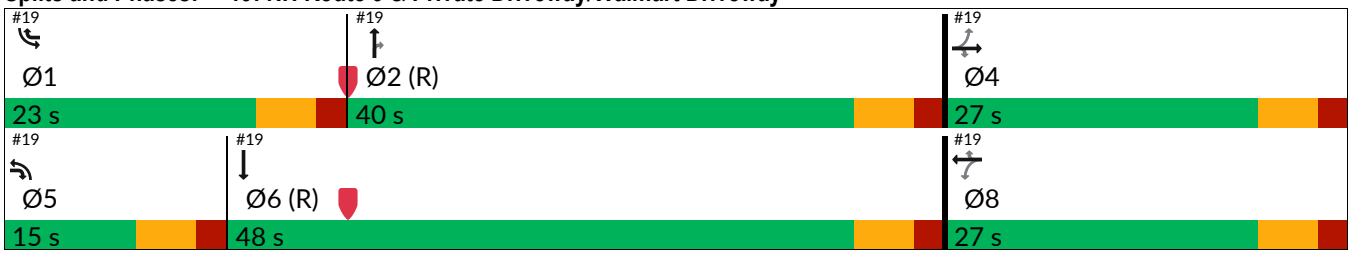
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Future Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1772	1546	1805	3455	1615	1685	3458	0
Flt Permitted		0.551			0.694		0.950			0.950		
Satd. Flow (perm)	0	1047	1615	0	1275	1546	1805	3455	1615	1685	3458	0
Satd. Flow (RTOR)			109			62			182		10	
Adj. Flow (vph)	91	16	108	112	42	185	84	856	24	160	944	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	856	24	160	1002	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	27.0	27.0	15.0	27.0	27.0	23.0	15.0	40.0	40.0	23.0	48.0	
Total Split (%)	30.0%	30.0%	16.7%	30.0%	30.0%	25.6%	16.7%	44.4%	44.4%	25.6%	53.3%	
Maximum Green (s)	21.0	21.0	9.0	21.0	21.0	17.0	9.0	34.0	34.0	17.0	42.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.17		0.62	0.28	0.39	0.49	0.03	0.56	0.52	
Control Delay (s/veh)		41.1	4.0		43.8	11.0	51.9	9.4	0.0	41.4	14.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		41.1	4.0		43.8	11.0	51.9	9.4	0.0	41.4	14.7	
Queue Length 50th (ft)		55	0		81	44	50	87	0	84	180	
Queue Length 95th (ft)		86	21		124	66	100	106	m0	141	265	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		267	660		325	729	230	1736	902	355	1920	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.40	0.16		0.47	0.25	0.37	0.49	0.03	0.45	0.52	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 23 (26%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

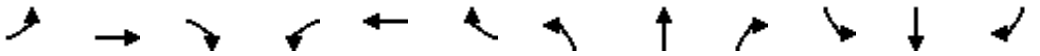
Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Future Volume (vph)	72	13	85	94	35	155	78	796	22	144	850	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1772	1546	1805	3455	1615	1685	3459	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1047	1615		1274	1546	1805	3455	1615	1685	3459	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	91	16	108	112	42	185	84	856	24	160	944	58
RTOR Reduction (vph)	0	0	74	0	0	39	0	0	12	0	4	0
Lane Group Flow (vph)	0	107	34	0	154	146	84	856	12	160	998	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.5	24.2		15.5	28.8	8.7	43.2	43.2	13.3	47.8	
Effective Green, g (s)		17.5	28.2		17.5	32.8	10.7	45.2	45.2	15.3	49.8	
Actuated g/C Ratio		0.19	0.31		0.19	0.36	0.12	0.50	0.50	0.17	0.55	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	577		247	632	214	1735	811	286	1913	
v/s Ratio Prot			0.01			0.04	0.05	0.25		c0.09	c0.29	
v/s Ratio Perm		0.10	0.01		c0.12	0.06			0.01			
v/c Ratio		0.53	0.06		0.62	0.23	0.39	0.49	0.01	0.56	0.52	
Uniform Delay, d1		32.5	21.6		33.2	19.8	36.6	14.8	11.2	34.3	12.6	
Progression Factor		1.00	1.00		1.00	1.00	1.29	0.51	1.00	1.00	1.00	
Incremental Delay, d2		2.5	0.0		4.8	0.2	1.1	0.9	0.0	2.4	1.0	
Delay (s)		35.0	21.7		38.1	20.0	48.2	8.5	11.3	36.6	13.6	
Level of Service		C	C		D	C	D	A	B	D	B	
Approach Delay (s/veh)		28.3			28.2			12.1			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

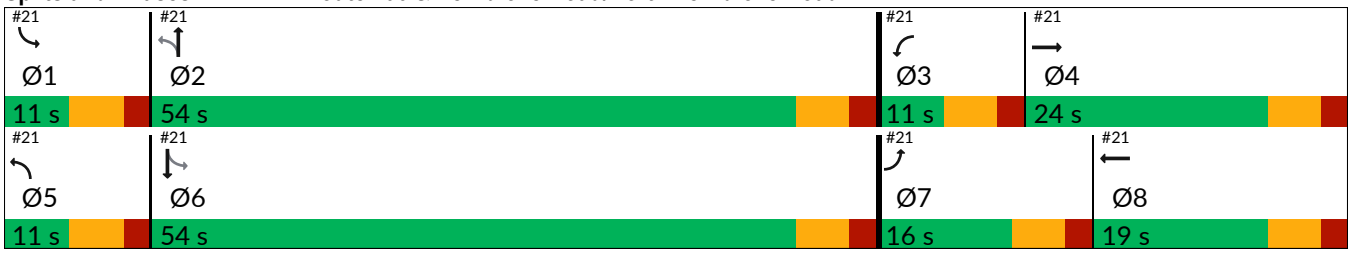
c Critical Lane Group

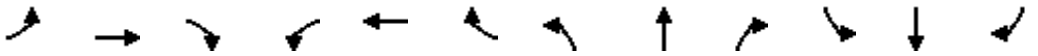


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Future Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.895			0.887			0.997			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1700	0	1770	1487	0	1847	3564	0	1847	3488	0
Flt Permitted	0.950			0.950			0.168			0.187		
Satd. Flow (perm)	3502	1700	0	1770	1487	0	327	3564	0	364	3488	0
Satd. Flow (RTOR)		68			87			2			31	
Adj. Flow (vph)	195	29	68	9	29	87	49	913	16	70	861	160
Lane Group Flow (vph)	195	97	0	9	116	0	49	929	0	70	1021	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	16.0	24.0		11.0	19.0		11.0	54.0		11.0	54.0	
Total Split (%)	16.0%	24.0%		11.0%	19.0%		11.0%	54.0%		11.0%	54.0%	
Maximum Green (s)	10.0	18.0		5.0	13.0		5.0	48.0		5.0	48.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
v/c Ratio	0.34	0.18		0.05	0.40		0.15	0.57		0.20	0.59	
Control Delay (s/veh)	34.0	11.9		38.8	17.5		8.8	17.6		9.2	16.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	34.0	11.9		38.8	17.5		8.8	17.6		9.2	16.4	
Queue Length 50th (ft)	42	9		4	13		9	173		14	192	
Queue Length 95th (ft)	80	46		20	59		26	253		34	285	
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200			250		
Base Capacity (vph)	651	631		192	412		337	2529		357	2484	
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	0.30	0.15		0.05	0.28		0.15	0.37		0.20	0.41	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 71.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

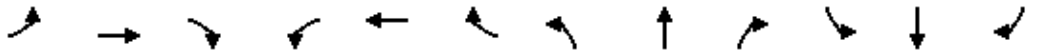




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Future Volume (vph)	156	23	54	8	25	74	43	803	14	62	766	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.89		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3502	1700		1770	1488		1847	3565		1847	3490	
Flt Permitted	0.95	1.00		0.95	1.00		0.17	1.00		0.19	1.00	
Satd. Flow (perm)	3502	1700		1770	1488		327	3565		364	3490	
Peak-hour factor, PHF	0.80	0.80	0.80	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	195	29	68	9	29	87	49	913	16	70	861	160
RTOR Reduction (vph)	0	50	0	0	74	0	0	1	0	0	17	0
Lane Group Flow (vph)	195	47	0	9	42	0	49	928	0	70	1004	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	9.4	18.2		0.7	9.5		34.4	31.8		36.4	32.8	
Effective Green, g (s)	11.4	20.2		2.7	11.5		38.4	33.8		40.4	34.8	
Actuated g/C Ratio	0.15	0.26		0.03	0.15		0.49	0.43		0.52	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	509	438		61	218		249	1538		293	1551	
v/s Ratio Prot	c0.06	0.03		0.01	c0.03		0.01	0.26		c0.02	c0.29	
v/s Ratio Perm							0.08			0.11		
v/c Ratio	0.38	0.11		0.15	0.19		0.20	0.60		0.24	0.65	
Uniform Delay, d1	30.3	22.2		36.7	29.3		11.7	17.1		10.9	17.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.1	0.4		0.4	0.7		0.4	0.9	
Delay (s)	30.8	22.3		37.8	29.7		12.1	17.8		11.3	17.9	
Level of Service	C	C		D	C		B	B		B	B	
Approach Delay (s/veh)		27.9			30.3			17.5			17.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Future Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1589	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.588						0.195					
Satd. Flow (perm)	1117	1589	0	1900	2072	0	358	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		46			2				120			316
Adj. Flow (vph)	361	5	46	2	6	2	27	603	1	0	644	316
Lane Group Flow (vph)	361	51	0	2	8	0	27	603	1	0	644	316
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	18.0	29.0		11.0	11.0		11.0	51.0	51.0	40.0	40.0	40.0
Total Split (%)	18.0%	29.0%		11.0%	11.0%		11.0%	51.0%	51.0%	40.0%	40.0%	40.0%
Maximum Green (s)	12.0	23.0		5.0	5.0		5.0	45.0	45.0	34.0	34.0	34.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.81	0.11		0.01	0.03		0.07	0.54	0.00		0.64	0.32
Control Delay (s/veh)	39.7	8.6		31.0	27.8		5.8	9.5	0.0		16.0	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	39.7	8.6		31.0	27.8		5.8	9.5	0.0		16.0	2.6
Queue Length 50th (ft)	119	1		1	2		3	100	0		112	0
Queue Length 95th (ft)	#222	22		4	9		15	258	0		376	36
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	447	682		219	241		378	1424	1279		1080	1046
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.81	0.07		0.01	0.03		0.07	0.42	0.00		0.60	0.30

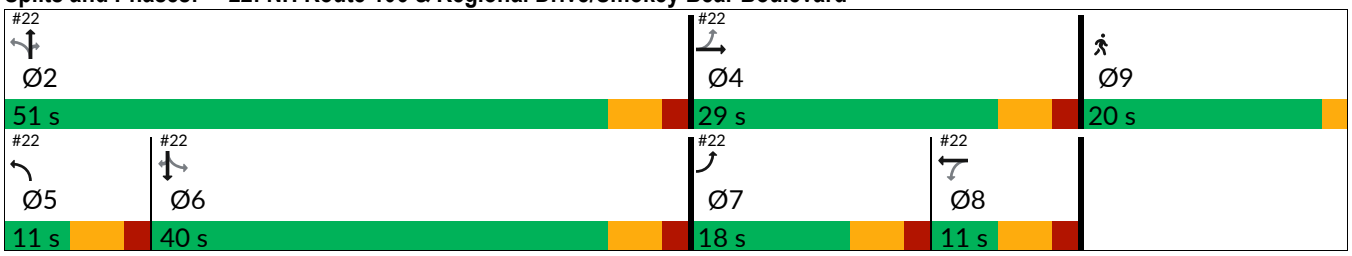
Intersection Summary
Cycle Length: 100

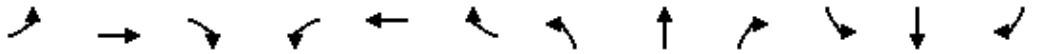
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 62.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

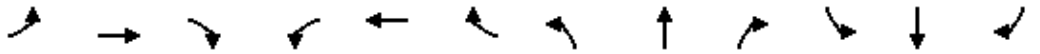




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Future Volume (vph)	300	4	38	1	3	1	25	549	1	0	554	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.86		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1588		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.59	1.00		1.00	1.00		0.19	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1118	1588		1900	2073		358	1837	1615		1818	1546
Peak-hour factor, PHF	0.83	0.83	0.83	0.50	0.50	0.50	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	361	5	46	2	6	2	27	603	1	0	644	316
RTOR Reduction (vph)	0	32	0	0	2	0	0	0	0	0	0	164
Lane Group Flow (vph)	361	19	0	2	6	0	27	603	1	0	644	152
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	19.1	19.1		0.8	0.8		39.9	39.9	39.9		32.2	32.2
Effective Green, g (s)	21.1	21.1		2.8	2.8		41.9	41.9	41.9		34.2	34.2
Actuated g/C Ratio	0.30	0.30		0.04	0.04		0.59	0.59	0.59		0.48	0.48
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	470	471		74	81		283	1084	953		875	744
v/s Ratio Prot	c0.15	0.01			0.00		0.00	c0.33			c0.35	
v/s Ratio Perm	c0.07			0.00			0.05		0.00			0.10
v/c Ratio	0.77	0.04		0.03	0.08		0.10	0.56	0.00		0.74	0.20
Uniform Delay, d1	22.0	17.7		32.8	32.9		9.1	8.9	6.0		14.8	10.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.4	0.0		0.1	0.4		0.1	0.6	0.0		3.2	0.1
Delay (s)	29.4	17.8		32.9	33.2		9.3	9.5	6.0		18.0	10.7
Level of Service	C	B		C	C		A	A	A		B	B
Approach Delay (s/veh)		27.9			33.2			9.5			15.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Future Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	3467	3333	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.702			0.752	
Satd. Flow (perm)	3467	3333	0	1668	3296	0	0	1334	1830	0	1354	1531
Satd. Flow (RTOR)		1			10				185			546
Adj. Flow (vph)	452	900	4	1	851	77	8	0	2	84	0	551
Lane Group Flow (vph)	452	904	0	1	928	0	0	8	2	0	84	551
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	21.0	49.0		11.0	39.0		13.0	13.0	13.0	13.0	13.0	21.0
Total Split (%)	21.0%	49.0%		11.0%	39.0%		13.0%	13.0%	13.0%	13.0%	13.0%	21.0%
Maximum Green (s)	15.0	43.0		5.0	33.0		7.0	7.0	7.0	7.0	7.0	15.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.50	0.37		0.00	0.63			0.04	0.00		0.40	0.58
Control Delay (s/veh)	23.6	7.3		22.0	16.0			28.0	0.0		34.7	4.3
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	23.6	7.3		22.0	16.0			28.0	0.0		34.7	4.3
Queue Length 50th (ft)	80	50		0	150			3	0		32	1
Queue Length 95th (ft)	129	208		4	206			9	0		76	47
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	1027	2561		268	2014			209	442		212	989
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	0.44	0.35		0.00	0.46			0.04	0.00		0.40	0.56

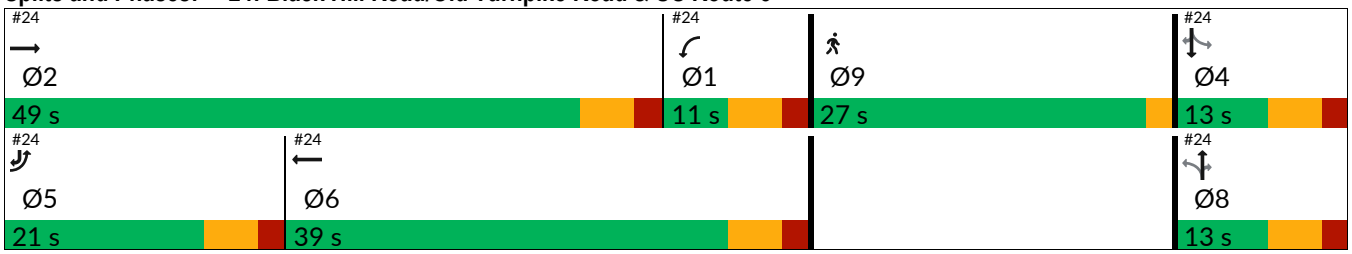
Intersection Summary
Cycle Length: 100

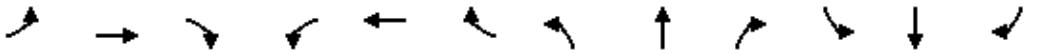
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	27%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 61.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Future Volume (vph)	384	765	3	1	783	71	4	0	1	72	0	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	3467	3334		1668	3294			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.70	1.00		0.75	1.00
Satd. Flow (perm)	3467	3334		1668	3294			1335	1830		1355	1531
Peak-hour factor, PHF	0.85	0.85	0.85	0.92	0.92	0.92	0.50	0.50	0.50	0.86	0.86	0.86
Adj. Flow (vph)	452	900	4	1	851	77	8	0	2	84	0	551
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	2	0	0	360
Lane Group Flow (vph)	452	904	0	1	923	0	0	8	0	0	84	191
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Actuated Green, G (s)	13.9	41.1		3.2	30.4			5.1	5.1		5.1	19.0
Effective Green, g (s)	15.9	43.1		5.2	32.4			7.1	7.1		7.1	23.0
Actuated g/C Ratio	0.24	0.64		0.08	0.48			0.11	0.11		0.11	0.34
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	817	2131		128	1583			140	192		142	613
v/s Ratio Prot	c0.13	0.27		0.00	c0.28							0.07
v/s Ratio Perm								0.01	0.00		c0.06	0.05
v/c Ratio	0.55	0.42		0.01	0.58			0.06	0.00		0.59	0.31
Uniform Delay, d1	22.6	6.0		28.7	12.6			27.1	27.0		28.8	16.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.1		0.0	0.6			0.2	0.0		6.5	0.3
Delay (s)	23.4	6.1		28.7	13.2			27.3	27.0		35.2	16.7
Level of Service	C	A		C	B			C	C		D	B
Approach Delay (s/veh)		11.9			13.2			27.2			19.1	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Future Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.95	0.95	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950			0.950	0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	4964	0	1715	1715	1669	0
Flt Permitted		0.950				0.950			0.950	0.950		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	4964	0	1715	1715	1669	0
Satd. Flow (RTOR)				185							185	
Adj. Flow (vph)	1	84	1473	441	1	30	1640	3	334	0	114	22
Lane Group Flow (vph)	0	85	1473	441	0	31	1643	0	167	167	114	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Split	NA	Prot	Split
Protected Phases	5	5	2	2	1	1	6		3	3	3	4
Permitted Phases												
Detector Phase	5	5	2	2	1	1	6		3	3	3	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0
Total Split (s)	12.0	12.0	24.0	24.0	12.0	12.0	24.0		19.0	19.0	19.0	12.0
Total Split (%)	12.0%	12.0%	24.0%	24.0%	12.0%	12.0%	24.0%		19.0%	19.0%	19.0%	12.0%
Maximum Green (s)	6.0	6.0	18.0	18.0	6.0	6.0	18.0		13.0	13.0	13.0	6.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.40	0.78	0.49		0.19	0.67		0.56	0.56	0.26	
Control Delay (s/veh)		45.0	26.5	13.5		50.8	22.4		44.2	44.2	2.0	
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay (s/veh)		45.0	26.5	13.5		50.8	22.4		44.2	44.2	2.0	
Queue Length 50th (ft)		51	426	104		16	342		104	104	0	
Queue Length 95th (ft)		95	#748	256		m30	#550		152	152	2	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150			300		300	
Base Capacity (vph)		214	1888	899		163	2448		312	312	455	
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		0.40	0.78	0.49		0.19	0.67		0.54	0.54	0.25	

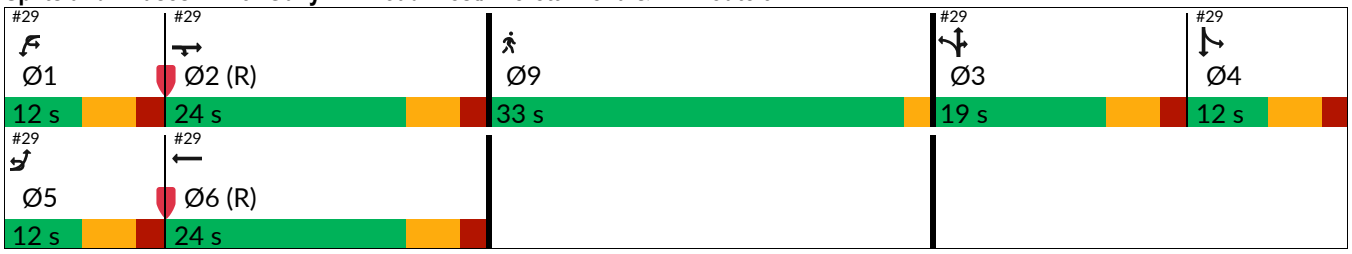
Intersection Summary
Cycle Length: 100

Lane Group	SBT	SBR	Ø9
Lane Configurations			
Traffic Volume (vph)	1	49	
Future Volume (vph)	1	49	
Lane Util. Factor	1.00	1.00	
Frt	0.897		
Flt Protected	0.989		
Satd. Flow (prot)	1729	0	
Flt Permitted	0.989		
Satd. Flow (perm)	1729	0	
Satd. Flow (RTOR)	73		
Adj. Flow (vph)	1	73	
Lane Group Flow (vph)	96	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	6.0		5.0
Minimum Split (s)	12.0		33.0
Total Split (s)	12.0		33.0
Total Split (%)	12.0%		33%
Maximum Green (s)	6.0		31.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Don't Walk (s)			24.0
Pedestrian Calls (#/hr)			0
v/c Ratio	0.41		
Control Delay (s/veh)	20.1		
Queue Delay	0.0		
Total Delay (s/veh)	20.1		
Queue Length 50th (ft)	14		
Queue Length 95th (ft)	34		
Internal Link Dist (ft)	277		
Turn Bay Length (ft)			
Base Capacity (vph)	233		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.41		

Intersection Summary

Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
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.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



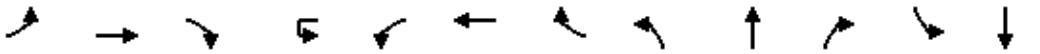
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Future Volume (vph)	1	81	1429	428	1	27	1492	3	287	0	98	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91		0.95	0.95	1.00	
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	4963		1715	1715	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	4963		1715	1715	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1473	441	1	30	1640	3	334	0	114	22
RTOR Reduction (vph)	0	0	0	90	0	0	0	0	0	0	94	0
Lane Group Flow (vph)	0	85	1473	351	0	31	1643	0	167	167	20	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Split	NA	Prot	Split
Protected Phases	5	5	2	2	1	1	6		3	3	3	4
Permitted Phases												
Actuated Green, G (s)		9.1	49.1	49.1		5.0	45.0		15.4	15.4	15.4	
Effective Green, g (s)		11.1	51.1	51.1		7.0	47.0		17.4	17.4	17.4	
Actuated g/C Ratio		0.11	0.51	0.51		0.07	0.47		0.17	0.17	0.17	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		191	1765	762		120	2332		298	298	290	
v/s Ratio Prot		c0.05	c0.43	0.23		0.02	0.33		c0.10	0.10	0.01	
v/s Ratio Perm												
v/c Ratio		0.45	0.83	0.46		0.26	0.70		0.56	0.56	0.07	
Uniform Delay, d1		41.6	20.8	15.6		44.0	21.0		37.8	37.8	34.5	
Progression Factor		1.00	1.00	1.00		1.18	0.87		1.00	1.00	1.00	
Incremental Delay, d2		1.7	4.8	2.0		0.9	1.5		2.4	2.4	0.1	
Delay (s)		43.2	25.7	17.6		52.8	19.8		40.2	40.2	34.6	
Level of Service		D	C	B		D	B		D	D	C	
Approach Delay (s/veh)			24.6				20.4			38.8		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.99	
Satd. Flow (perm)	1729	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	67	0
Lane Group Flow (vph)	29	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.5	
Effective Green, g (s)	8.5	
Actuated g/C Ratio	0.09	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	146	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.20	
Uniform Delay, d1	42.6	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	43.3	
Level of Service	D	
Approach Delay (s/veh)	43.3	
Approach LOS	D	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Future Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Lane Util. Factor	1.00	0.91	1.00	0.95	0.97	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.997				0.850		0.850
Flt Protected	0.950				0.950			0.950	0.955		0.950	
Satd. Flow (prot)	1728	4964	1546	0	3351	3445	0	1698	1707	1599	1793	1605
Flt Permitted	0.950				0.950			0.950	0.955		0.950	
Satd. Flow (perm)	1728	4964	1546	0	3351	3445	0	1698	1707	1599	1793	1605
Satd. Flow (RTOR)			120			2				235		560
Adj. Flow (vph)	6	1514	86	1	255	1439	29	178	6	235	19	0
Lane Group Flow (vph)	6	1514	86	0	256	1468	0	93	91	235	19	17
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	NA
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Detector Phase	5	2	2 3	1	1	6		3	3	3	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0	12.0	12.0	12.0
Total Split (s)	12.0	32.0		15.0	15.0	35.0		12.0	12.0	12.0	12.0	12.0
Total Split (%)	12.0%	32.0%		15.0%	15.0%	35.0%		12.0%	12.0%	12.0%	12.0%	12.0%
Maximum Green (s)	6.0	26.0		9.0	9.0	29.0		6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	0.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0	6.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.60	0.08		0.51	0.63		0.39	0.38	0.59	0.12	0.03
Control Delay (s/veh)	30.5	30.9	1.5		42.6	14.7		42.3	42.1	11.4	43.4	0.1
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.5	30.9	1.5		42.6	14.7		42.3	42.1	11.4	43.4	0.1
Queue Length 50th (ft)	4	235	0		78	270		57	56	0	12	0
Queue Length 95th (ft)	m6	397	m4		114	#625		100	98	60	29	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225		225		200			90				
Base Capacity (vph)	142	2526	1105		498	2315		241	242	401	157	651
Starvation Cap Reductn	0	0	0		0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.60	0.08		0.51	0.63		0.39	0.38	0.59	0.12	0.03

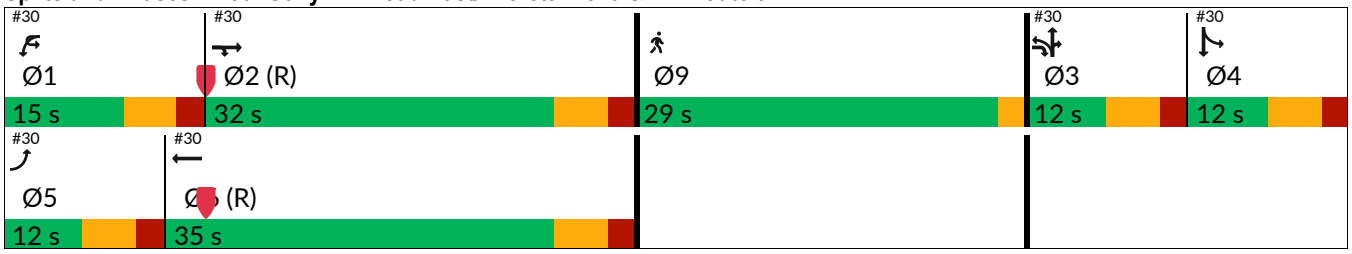
Intersection Summary
Cycle Length: 100

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		29%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
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.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



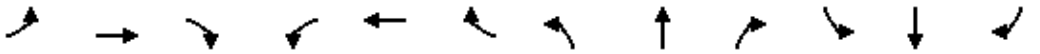
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Future Volume (vph)	6	1453	83	1	240	1353	27	157	5	207	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0		4.0	4.0	6.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.97	0.95		0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95	1.00
Satd. Flow (prot)	1728	4964	1546		3351	3445		1698	1707	1599	1793	1605
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95	1.00
Satd. Flow (perm)	1728	4964	1546		3351	3445		1698	1707	1599	1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1514	86	1	255	1439	29	178	6	235	19	0
RTOR Reduction (vph)	0	0	29	0	0	1	0	0	0	206	0	16
Lane Group Flow (vph)	6	1514	57	0	256	1467	0	93	91	29	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	NA
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Actuated Green, G (s)	1.4	46.5	64.7		12.9	58.0		12.2	12.2	12.2	4.4	4.4
Effective Green, g (s)	3.4	48.5	66.7		14.9	60.0		14.2	14.2	12.2	6.4	6.4
Actuated g/C Ratio	0.03	0.49	0.67		0.15	0.60		0.14	0.14	0.12	0.06	0.06
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	2407	1031		499	2067		241	242	195	114	102
v/s Ratio Prot	0.00	0.30	0.04		c0.08	c0.43		c0.05	0.05	0.02	c0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.10	0.63	0.06		0.51	0.71		0.39	0.38	0.15	0.17	0.01
Uniform Delay, d1	46.8	19.1	5.8		39.2	13.9		38.9	38.9	39.2	44.3	43.8
Progression Factor	0.71	1.50	1.91		1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.8	0.0		0.9	2.1		1.0	1.0	0.3	0.7	0.0
Delay (s)	33.9	29.4	11.0		40.1	16.0		40.0	39.9	39.6	45.0	43.9
Level of Service	C	C	B		D	B		D	D	D	D	D
Approach Delay (s/veh)		28.4				19.6			39.7			44.5
Approach LOS		C				B			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

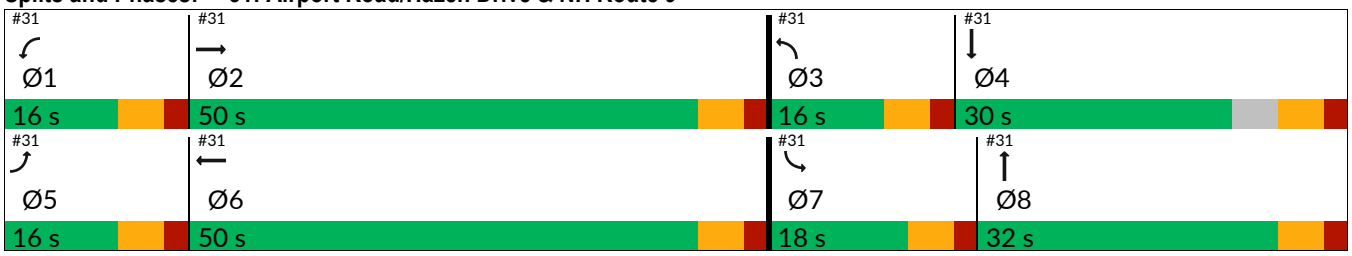


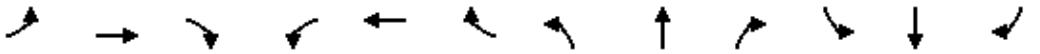
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Future Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			197			197			242			197
Adj. Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
Lane Group Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	16.0	50.0		16.0	50.0		16.0	32.0		18.0	30.0	
Total Split (%)	13.8%	43.1%		13.8%	43.1%		13.8%	27.6%		15.5%	25.9%	
Maximum Green (s)	10.0	44.0		10.0	44.0		10.0	26.0		12.0	24.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.16	0.81	0.14	0.39	0.78	0.04	0.50	0.22	0.15	0.18	0.32	0.07
Control Delay (s/veh)	42.0	26.0	0.2	42.4	23.4	0.0	44.0	38.3	0.2	43.1	43.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.0	26.0	0.2	42.4	23.4	0.0	44.0	38.3	0.2	43.1	43.5	0.1
Queue Length 50th (ft)	15	377	0	46	395	0	65	39	0	18	40	0
Queue Length 95th (ft)	35	510	0	80	#566	0	105	80	0	33	58	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	447	1709	1599	447	1887	1652	432	547	1599	262	592	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.81	0.14	0.35	0.78	0.04	0.50	0.13	0.15	0.12	0.12	0.07

Intersection Summary
Cycle Length: 116

Actuated Cycle Length: 93.7
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Future Volume (vph)	51	1308	216	144	1353	56	192	61	213	20	45	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.65	0.65	0.65
Adj. Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	1377	227	157	1471	61	218	69	242	31	69	108
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.6	45.8	97.6	9.0	49.2	97.6	10.1	14.1	97.6	4.7	8.7	97.6
Effective Green, g (s)	7.6	47.8	97.6	11.0	51.2	97.6	12.1	16.1	97.6	6.7	10.7	97.6
Actuated g/C Ratio	0.08	0.49	1.00	0.11	0.52	1.00	0.12	0.16	1.00	0.07	0.11	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	269	1692	1599	390	1812	1652	415	299	1599	119	201	1561
v/s Ratio Prot	0.02	0.40		c0.05	c0.43		c0.07	0.04		0.02	c0.04	
v/s Ratio Perm			0.14			0.04			0.15			0.07
v/c Ratio	0.20	0.81	0.14	0.40	0.81	0.04	0.53	0.23	0.15	0.26	0.34	0.07
Uniform Delay, d1	42.2	21.1	0.0	40.2	19.2	0.0	40.1	35.4	0.0	43.1	40.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	3.1	0.2	0.7	2.9	0.0	1.2	0.4	0.2	1.2	1.0	0.1
Delay (s)	42.5	24.2	0.2	40.9	22.1	0.0	41.3	35.8	0.2	44.3	41.2	0.1
Level of Service	D	C	A	D	C	A	D	D	A	D	D	A
Approach Delay (s/veh)		21.5			23.0			21.8			20.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Future Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt			0.997				0.850			0.850		0.919
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1787	3326	0	1668	3455	1546	1685	1773	1507	3268	1746
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1787	3326	0	1668	3455	1546	1685	1773	1507	3268	1746
Satd. Flow (RTOR)			2				134			91		36
Adj. Flow (vph)	1	52	1269	29	54	1392	341	162	165	86	391	75
Lane Group Flow (vph)	0	53	1298	0	54	1392	341	162	165	86	391	163
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Detector Phase	5	5	2		1	6	6 4	8	8	8 1	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	11.0	11.0	45.0		11.0	45.0		24.0	24.0		20.0	20.0
Total Split (%)	8.3%	8.3%	34.1%		8.3%	34.1%		18.2%	18.2%		15.2%	15.2%
Maximum Green (s)	5.0	5.0	39.0		5.0	39.0		18.0	18.0		14.0	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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.41	0.92		0.45	0.90	0.32	0.57	0.55	0.18	0.72	0.51
Control Delay (s/veh)		53.8	38.1		56.2	35.1	5.9	45.0	44.0	6.0	47.1	35.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		53.8	38.1		56.2	35.1	5.9	45.0	44.0	6.0	47.1	35.3
Queue Length 50th (ft)		32	387		33	424	49	92	94	0	118	71
Queue Length 95th (ft)		73	#572		75	#620	104	116	117	14	#177	141
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125		125	130		130	350	
Base Capacity (vph)		129	1417		121	1554	1062	350	368	480	543	320
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.41	0.92		0.45	0.90	0.32	0.46	0.45	0.18	0.72	0.51

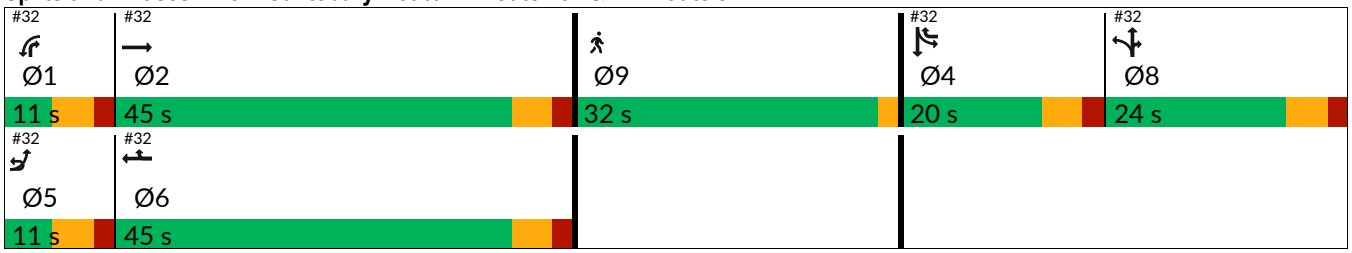
Intersection Summary
Cycle Length: 132

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	88	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		24%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 96.4
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Future Volume (vph)	1	49	1193	27	50	1295	317	112	114	59	364	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92
Flt Protected		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1787	3325		1668	3455	1546	1685	1773	1507	3268	1746
Flt Permitted		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1787	3325		1668	3455	1546	1685	1773	1507	3268	1746
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.69	0.69	0.69	0.93	0.93
Adj. Flow (vph)	1	52	1269	29	54	1392	341	162	165	86	391	75
RTOR Reduction (vph)	0	0	1	0	0	0	47	0	0	62	0	30
Lane Group Flow (vph)	0	53	1297	0	54	1392	294	162	165	24	391	133
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Actuated Green, G (s)		4.0	40.4		5.0	41.4	61.4	14.3	14.3	25.3	14.0	14.0
Effective Green, g (s)		6.0	42.4		7.0	43.4	63.4	16.3	16.3	27.3	16.0	16.0
Actuated g/C Ratio		0.06	0.43		0.07	0.44	0.65	0.17	0.17	0.28	0.16	0.16
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		109	1442		119	1534	1003	281	295	421	535	285
v/s Ratio Prot		0.03	0.39		c0.03	c0.40	0.19	c0.10	0.09	0.02	c0.12	0.08
v/s Ratio Perm												
v/c Ratio		0.49	0.90		0.45	0.91	0.29	0.58	0.56	0.06	0.73	0.47
Uniform Delay, d1		44.4	25.7		43.5	25.3	7.4	37.5	37.4	25.8	38.8	37.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		3.4	7.8		2.7	8.1	0.2	2.9	2.3	0.1	5.1	1.2
Delay (s)		47.7	33.5		46.2	33.4	7.6	40.4	39.7	25.8	43.9	38.2
Level of Service		D	C		D	C	A	D	D	C	D	D
Approach Delay (s/veh)			34.1			28.8			37.1			42.2
Approach LOS			C			C			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	82
Future Volume (vph)	82
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	88
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

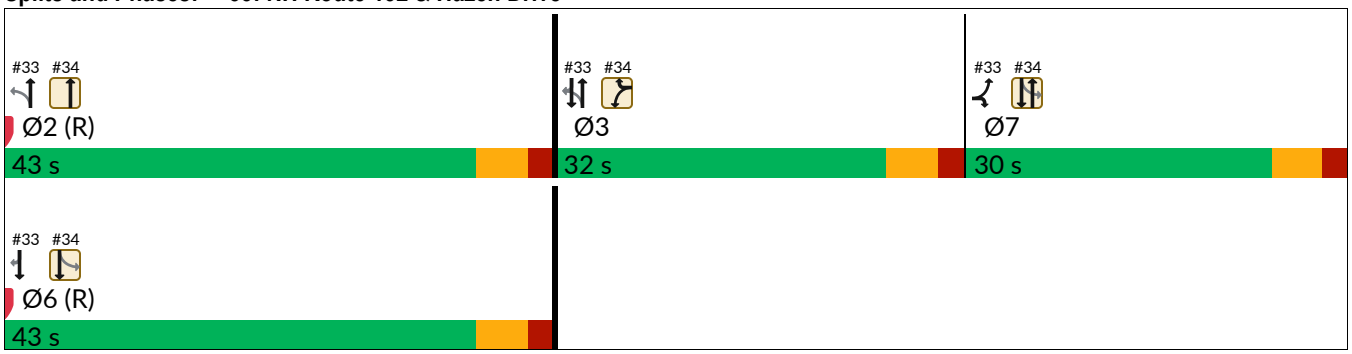
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	140	21	12	491	651	142			
Future Volume (vph)	140	21	12	491	651	142			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	3502	1615	0	1817	1900	1561			
Flt Permitted	0.950			0.980					
Satd. Flow (perm)	3502	1615	0	1782	1900	1561			
Satd. Flow (RTOR)		28				146			
Adj. Flow (vph)	189	28	16	638	671	146			
Lane Group Flow (vph)	189	28	0	654	671	146			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					43.0	32.0	43.0
Total Split (%)	28.6%	28.6%					41%	30%	41%
Maximum Green (s)	24.0	24.0					37.0	26.0	37.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.23	0.07		0.53	0.51	0.13			
Control Delay (s/veh)	32.8	11.5		10.3	11.2	3.0			
Queue Delay	0.0	0.0		0.0	0.9	0.0			
Total Delay (s/veh)	32.8	11.5		10.3	12.0	3.0			
Queue Length 50th (ft)	52	0		203	195	9			
Queue Length 95th (ft)	67	16		222	331	m31			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	867	420		1219	1300	1114			
Starvation Cap Reductn	0	0		0	345	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.22	0.07		0.54	0.70	0.13			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	140	21	12	491	651	142
Future Volume (vph)	140	21	12	491	651	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3502	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	3502	1615		1783	1900	1561
Peak-hour factor, PHF	0.74	0.74	0.77	0.77	0.97	0.97
Adj. Flow (vph)	189	28	16	638	671	146
RTOR Reduction (vph)	0	21	0	0	0	45
Lane Group Flow (vph)	189	7	0	654	671	101
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	22.6	22.6		70.4	70.4	70.4
Effective Green, g (s)	24.6	24.6		72.4	72.4	72.4
Actuated g/C Ratio	0.23	0.23		0.69	0.69	0.69
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	820	378		1229	1310	1076
v/s Ratio Prot	c0.05	0.00			0.35	
v/s Ratio Perm				c0.37		0.06
v/c Ratio	0.23	0.02		0.53	0.51	0.09
Uniform Delay, d1	32.5	30.9		8.0	7.8	5.4
Progression Factor	1.00	1.00		1.00	1.18	2.78
Incremental Delay, d2	0.1	0.0		0.4	0.3	0.0
Delay (s)	32.7	30.9		8.4	9.5	15.1
Level of Service	C	C		A	A	B
Approach Delay (s/veh)	32.5			8.4	10.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

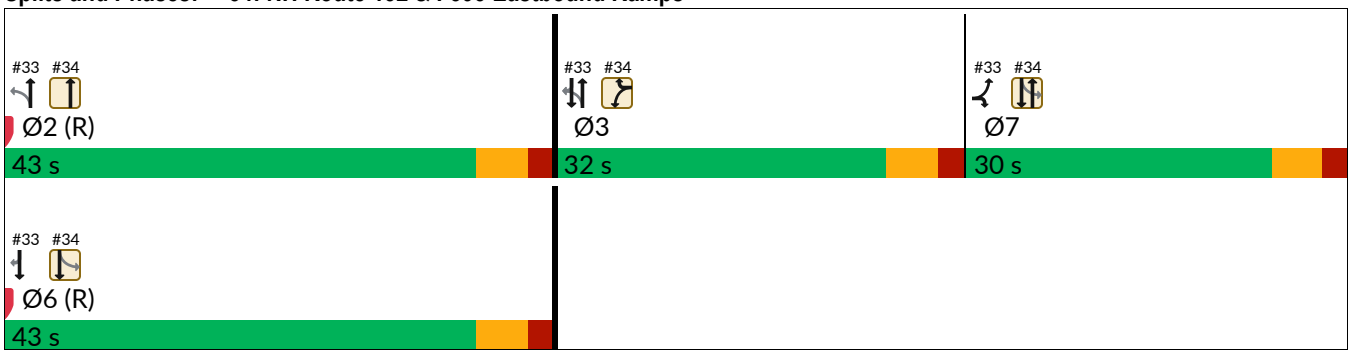
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	355	72	546	86	38	465			
Future Volume (vph)	355	72	546	86	38	465			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.980						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3386	0	1728	1818			
Flt Permitted	0.950				0.319				
Satd. Flow (perm)	1805	1615	3386	0	580	1818			
Satd. Flow (RTOR)		61	35						
Adj. Flow (vph)	378	77	674	106	40	495			
Lane Group Flow (vph)	378	77	780	0	40	495			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	32.0	32.0					43.0	43.0	30.0
Total Split (%)	30.5%	30.5%					41%	41%	29%
Maximum Green (s)	26.0	26.0					37.0	37.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.75	0.15	0.36		0.11	0.42			
Control Delay (s/veh)	45.1	11.4	6.3		7.9	10.5			
Queue Delay	0.0	0.0	0.3		0.0	0.0			
Total Delay (s/veh)	45.1	11.4	6.7		7.9	10.5			
Queue Length 50th (ft)	233	8	77		9	147			
Queue Length 95th (ft)	#377	44	86		23	207			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	509	499	2241		382	1196			
Starvation Cap Reductn	0	0	795		0	0			
Spillback Cap Reductn	0	0	0		0	43			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.74	0.15	0.54		0.10	0.43			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps

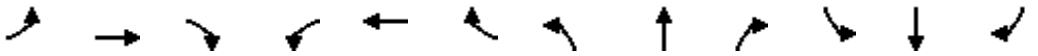


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	355	72	546	86	38	465
Future Volume (vph)	355	72	546	86	38	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3385		1728	1818
Flt Permitted	0.95	1.00	1.00		0.32	1.00
Satd. Flow (perm)	1805	1615	3385		580	1818
Peak-hour factor, PHF	0.94	0.94	0.81	0.81	0.94	0.94
Adj. Flow (vph)	378	77	674	106	40	495
RTOR Reduction (vph)	0	44	13	0	0	0
Lane Group Flow (vph)	378	33	768	0	40	495
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	27.5	27.5	65.5		65.5	65.5
Effective Green, g (s)	29.5	29.5	67.5		67.5	67.5
Actuated g/C Ratio	0.28	0.28	0.64		0.64	0.64
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	507	453	2176		372	1168
v/s Ratio Prot	c0.21	0.02	0.23			c0.27
v/s Ratio Perm					0.07	
v/c Ratio	0.75	0.07	0.35		0.11	0.42
Uniform Delay, d1	34.3	27.7	8.7		7.2	9.2
Progression Factor	1.00	1.00	0.72		1.00	1.00
Incremental Delay, d2	5.9	0.1	0.1		0.1	0.2
Delay (s)	40.2	27.8	6.3		7.3	9.5
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	38.1		6.3			9.3
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

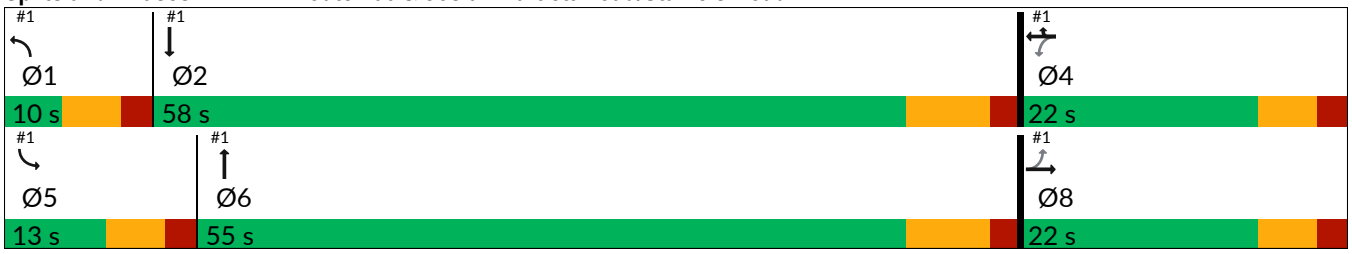
2037 Mitigated Build Weekday Morning Peak-Hour

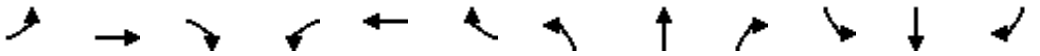


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Future Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.904				0.850		0.987				
Flt Protected		0.989			0.950					0.950		
Satd. Flow (prot)	0	1618	0	0	1736	1553	1776	3330	0	1736	3471	0
Flt Permitted		0.939			0.748					0.950		
Satd. Flow (perm)	0	1536	0	0	1367	1553	1776	3330	0	1736	3471	0
Satd. Flow (RTOR)		10				127		18				
Adj. Flow (vph)	3	1	10	136	0	20	0	432	42	34	1391	3
Lane Group Flow (vph)	0	14	0	0	136	20	0	474	0	34	1394	0
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	22.0	22.0		22.0	22.0	22.0	10.0	55.0		13.0	58.0	
Total Split (%)	24.4%	24.4%		24.4%	24.4%	24.4%	11.1%	61.1%		14.4%	64.4%	
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	4.0	47.5		7.0	50.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.47	0.05		0.25		0.20	0.63	
Control Delay (s/veh)		15.3			29.5	0.2		8.9		33.5	8.9	
Queue Delay		0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)		15.3			29.5	0.2		8.9		33.5	8.9	
Queue Length 50th (ft)		1			44	0		35		12	153	
Queue Length 95th (ft)		17			116	0		102		45	248	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)										450		
Base Capacity (vph)		434			380	523		2552		187	2816	
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		0.03			0.36	0.04		0.19		0.18	0.50	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 65.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

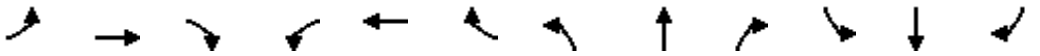
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Future Volume (vph)	3	1	9	122	0	18	0	389	38	31	1252	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00		0.95		1.00	0.95	
Frt		0.90			1.00	0.85		0.99		1.00	1.00	
Flt Protected		0.99			0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1618			1736	1553		3329		1736	3470	
Flt Permitted		0.94			0.75	1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1536			1367	1553		3329		1736	3470	
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)	3	1	10	136	0	20	0	432	42	34	1391	3
RTOR Reduction (vph)	0	8	0	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	0	6	0	0	136	4	0	466	0	34	1394	0
Heavy Vehicles (%)	5%	5%	5%	4%	4%	4%	7%	7%	7%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		12.0			12.0	12.0		35.5		2.4	43.9	
Effective Green, g (s)		14.0			14.0	14.0		37.5		2.4	45.9	
Actuated g/C Ratio		0.20			0.20	0.20		0.54		0.03	0.66	
Clearance Time (s)		6.0			6.0	6.0		7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		309			275	313		1798		60	2295	
v/s Ratio Prot						0.00		0.14		0.02	c0.40	
v/s Ratio Perm		0.00			c0.10							
v/c Ratio		0.02			0.49	0.01		0.26		0.57	0.61	
Uniform Delay, d1		22.2			24.6	22.2		8.5		33.0	6.7	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.4	0.0		0.1		11.7	0.5	
Delay (s)		22.2			26.0	22.2		8.6		44.7	7.1	
Level of Service		C			C	C		A		D	A	
Approach Delay (s/veh)		22.2			25.5			8.6			8.0	
Approach LOS		C			C			A			A	

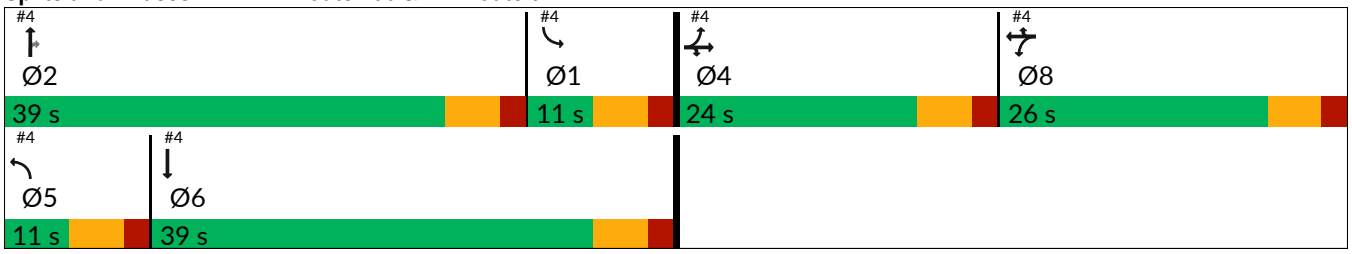
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	15.5
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

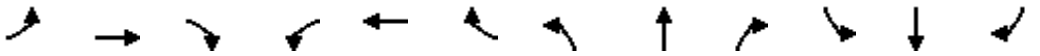


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Future Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Satd. Flow (RTOR)			229			229			164			344
Adj. Flow (vph)	223	124	49	542	260	99	12	343	157	40	839	384
Lane Group Flow (vph)	223	124	49	542	260	99	12	343	157	40	839	384
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	24.0	24.0	24.0	26.0	26.0	26.0	11.0	39.0	39.0	11.0	39.0	
Total Split (%)	24.0%	24.0%	24.0%	26.0%	26.0%	26.0%	11.0%	39.0%	39.0%	11.0%	39.0%	
Maximum Green (s)	18.0	18.0	18.0	20.0	20.0	20.0	5.0	33.0	33.0	5.0	33.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.38	0.39	0.11	0.61	0.28	0.17	0.08	0.38	0.30	0.19	0.68	0.22
Control Delay (s/veh)	31.3	34.2	0.5	29.9	25.5	0.6	40.1	26.8	6.4	35.3	24.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.3	34.2	0.5	29.9	25.5	0.6	40.1	26.8	6.4	35.3	24.7	0.3
Queue Length 50th (ft)	49	54	0	109	48	0	6	77	0	18	171	0
Queue Length 95th (ft)	102	128	0	230	113	0	27	150	49	53	319	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	888	482	576	1006	1037	623	155	1558	782	212	1634	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.26	0.09	0.54	0.25	0.16	0.08	0.22	0.20	0.19	0.51	0.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 75.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: NH Route 106 & NH Route 9

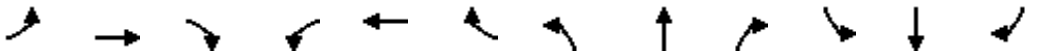




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Future Volume (vph)	201	112	44	488	234	89	11	309	141	36	755	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3224	1749	1487	3319	3421	1531	1616	3231	1446	1694	3388	1777
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)	223	124	49	542	260	99	12	343	157	40	839	384
RTOR Reduction (vph)	0	0	41	0	0	74	0	0	116	0	0	0
Lane Group Flow (vph)	223	124	8	542	260	25	12	343	41	40	839	384
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	8%	8%	8%	3%	3%	3%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	11.7	11.7	11.7	18.1	18.1	18.1	0.8	18.9	18.9	7.2	25.3	79.9
Effective Green, g (s)	13.7	13.7	13.7	20.1	20.1	20.1	2.8	20.9	20.9	9.2	27.3	79.9
Actuated g/C Ratio	0.17	0.17	0.17	0.25	0.25	0.25	0.04	0.26	0.26	0.12	0.34	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	552	299	254	834	860	385	56	845	378	195	1157	1777
v/s Ratio Prot	0.07	c0.07	0.01	c0.16	0.08	0.02	0.01	c0.11		0.02	c0.25	
v/s Ratio Perm									0.03			0.22
v/c Ratio	0.40	0.41	0.03	0.65	0.30	0.06	0.21	0.41	0.11	0.21	0.73	0.22
Uniform Delay, d1	29.5	29.5	27.6	26.8	24.2	22.7	37.5	24.4	22.4	32.0	23.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9	0.1	1.8	0.2	0.1	1.9	0.3	0.1	0.5	2.3	0.3
Delay (s)	30.0	30.5	27.6	28.5	24.4	22.8	39.4	24.7	22.5	32.6	25.3	0.3
Level of Service	C	C	C	C	C	C	D	C	C	C	C	A
Approach Delay (s/veh)		29.8			26.7			24.4			17.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	10	12	0	17	6	617	4	27	822	9
Future Volume (vph)	8	0	10	12	0	17	6	617	4	27	822	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.999			0.998	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1805	1615	1745	0	1669	1616	3228	0	1770	3532	0
Flt Permitted		0.950		0.000			0.950			0.950		
Satd. Flow (perm)	0	1805	1615	0	0	1669	1616	3228	0	1770	3532	0
Satd. Flow (RTOR)			273			164		1			2	
Adj. Flow (vph)	16	0	20	17	0	25	7	686	4	30	913	10
Lane Group Flow (vph)	0	16	20	17	0	25	7	690	0	30	923	0
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Detector Phase	4	4	4	3		3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0	6.0	10.0		6.0	6.0	
Minimum Split (s)	12.0	12.0	12.0	12.0		12.0	12.0	16.0		12.0	12.0	
Total Split (s)	12.0	12.0	12.0	12.0		12.0	12.0	24.0		12.0	24.0	
Total Split (%)	20.0%	20.0%	20.0%	20.0%		20.0%	20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	6.0	6.0	6.0	6.0		6.0	6.0	18.0		6.0	18.0	
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)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	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	3.0		3.0	3.0	
Recall Mode	None	None	None	None		None	None	Min		None	Min	
v/c Ratio		0.04	0.04	0.05		0.05	0.02	0.29		0.08	0.34	
Control Delay (s/veh)		21.0	0.1	21.1		0.2	21.2	9.8		20.9	8.3	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		21.0	0.1	21.1		0.2	21.2	9.8		20.9	8.3	
Queue Length 50th (ft)		2	0	2		0	1	0		3	0	
Queue Length 95th (ft)		11	0	16		0	13	171		31	#223	
Internal Link Dist (ft)		210			308			1555			2106	
Turn Bay Length (ft)			50			125	400			600		
Base Capacity (vph)		374	551	362		476	335	2367		367	2732	
Starvation Cap Reductn		0	0	0		0	0	0		0	0	
Spillback Cap Reductn		0	0	0		0	0	0		0	0	
Storage Cap Reductn		0	0	0		0	0	0		0	0	
Reduced v/c Ratio		0.04	0.04	0.05		0.05	0.02	0.29		0.08	0.34	

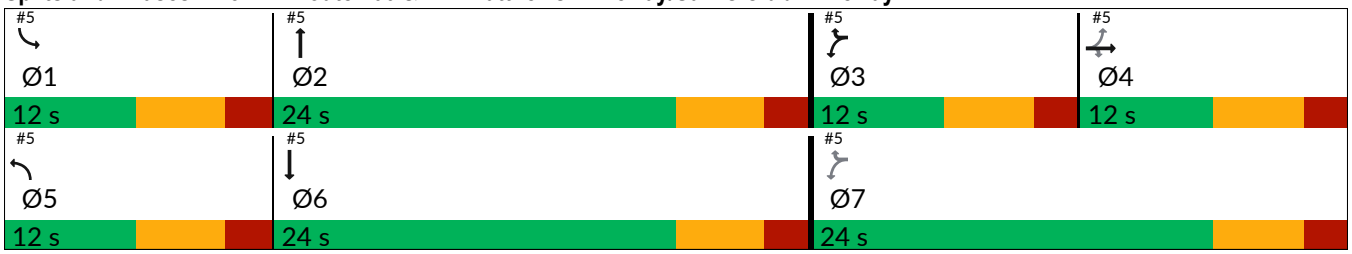
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 42.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

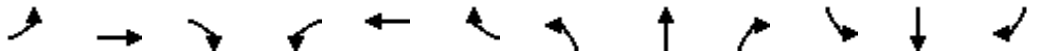
Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	24.0
Total Split (%)	40%
Maximum Green (s)	18.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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

Splits and Phases: 5: NH Route 106 & WB Matthews Driveway/Sam's Club Driveway

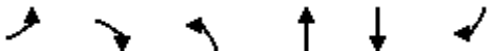




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	10	12	0	17	6	617	4	27	822	9
Future Volume (vph)	8	0	10	12	0	17	6	617	4	27	822	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	13	11	11	11	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615	1745		1669	1616	3228		1770	3533	
Flt Permitted		0.95	1.00	0.00		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1805	1615	0		1669	1616	3228		1770	3533	
Peak-hour factor, PHF	0.50	0.50	0.50	0.69	0.69	0.69	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	0	20	17	0	25	7	686	4	30	913	10
RTOR Reduction (vph)	0	0	19	0	0	23	0	0	0	0	1	0
Lane Group Flow (vph)	0	16	1	17	0	2	7	690	0	30	922	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	8%	8%	8%	2%	2%	2%
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Actuated Green, G (s)		1.7	1.7	1.7		1.7	0.9	26.7		1.7	27.5	
Effective Green, g (s)		3.7	3.7	3.7		3.7	2.9	28.7		3.7	29.5	
Actuated g/C Ratio		0.07	0.07	0.07		0.07	0.05	0.51		0.07	0.53	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		119	107	115		110	83	1660		117	1867	
v/s Ratio Prot				c0.01		0.00	0.00	0.21		c0.02	c0.26	
v/s Ratio Perm		0.01	0.00									
v/c Ratio		0.13	0.01	0.15		0.02	0.08	0.42		0.26	0.49	
Uniform Delay, d1		24.5	24.3	24.6		24.3	25.2	8.4		24.7	8.4	
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.6		0.1	0.4	0.2		1.2	0.2	
Delay (s)		25.1	24.4	25.2		24.4	25.6	8.5		25.9	8.6	
Level of Service		C	C	C		C	C	A		C	A	
Approach Delay (s/veh)		24.7			24.7			8.7			9.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

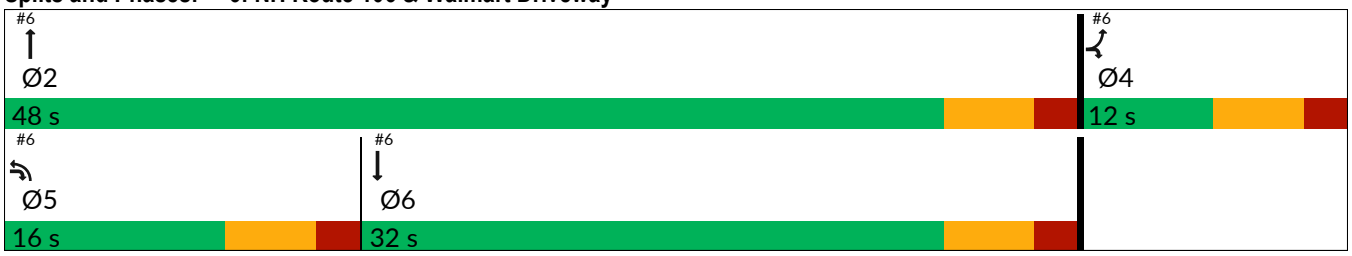
c Critical Lane Group

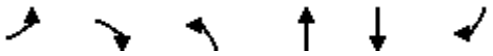


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	41	41	525	805	39
Future Volume (vph)	24	41	41	525	805	39
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.993	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1793	1553	1574	3374	3350	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1793	1553	1574	3374	3350	0
Satd. Flow (RTOR)		60			11	
Adj. Flow (vph)	35	60	46	583	894	43
Lane Group Flow (vph)	35	60	46	583	937	0
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Detector Phase	4	4 5	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		10.0	10.0	6.0	
Minimum Split (s)	12.0		16.0	16.0	12.0	
Total Split (s)	12.0		16.0	48.0	32.0	
Total Split (%)	20.0%		26.7%	80.0%	53.3%	
Maximum Green (s)	6.0		10.0	42.0	26.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.11	0.09	0.11	0.21	0.41	
Control Delay (s/veh)	23.5	4.2	19.9	2.2	9.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	23.5	4.2	19.9	2.2	9.5	
Queue Length 50th (ft)	11	0	14	27	128	
Queue Length 95th (ft)	26	11	40	40	184	
Internal Link Dist (ft)	488			959	1555	
Turn Bay Length (ft)		100	400			
Base Capacity (vph)	326	649	429	2855	2230	
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	0.11	0.09	0.11	0.20	0.42	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 48.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: NH Route 106 & Walmart Driveway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	41	41	525	805	39
Future Volume (vph)	24	41	41	525	805	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1793	1553	1574	3374	3351	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1793	1553	1574	3374	3351	
Peak-hour factor, PHF	0.68	0.68	0.90	0.90	0.90	0.90
Adj. Flow (vph)	35	60	46	583	894	43
RTOR Reduction (vph)	0	42	0	0	5	0
Lane Group Flow (vph)	35	18	46	583	932	0
Heavy Vehicles (%)	4%	4%	7%	7%	7%	7%
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	2.9	13.8	4.9	38.8	27.9	
Effective Green, g (s)	4.9	15.8	6.9	40.8	29.9	
Actuated g/C Ratio	0.09	0.29	0.13	0.76	0.56	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	163	456	202	2563	1865	
v/s Ratio Prot	c0.02	0.01	0.03	c0.17	c0.28	
v/s Ratio Perm						
v/c Ratio	0.21	0.04	0.23	0.23	0.50	
Uniform Delay, d1	22.6	13.5	21.0	1.9	7.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.0	0.6	0.0	0.2	
Delay (s)	23.3	13.6	21.6	1.9	7.5	
Level of Service	C	B	C	A	A	
Approach Delay (s/veh)	17.1			3.4	7.5	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

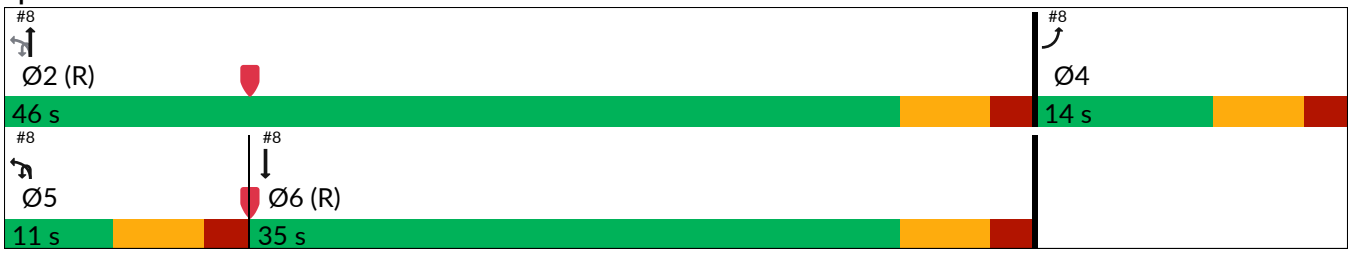
c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	146	77	1	73	393	677	192
Future Volume (vph)	146	77	1	73	393	677	192
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	0.95
Frt	0.948					0.967	
Flt Protected	0.968			0.950			
Satd. Flow (prot)	3206	0	0	1678	3471	3276	0
Flt Permitted	0.968			0.214			
Satd. Flow (perm)	3206	0	0	378	3471	3276	0
Satd. Flow (RTOR)	86					90	
Adj. Flow (vph)	162	86	1	81	437	744	211
Lane Group Flow (vph)	248	0	0	82	437	955	0
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Detector Phase	4		5	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	11.0	
Total Split (s)	14.0		11.0	11.0	46.0	35.0	
Total Split (%)	23.3%		18.3%	18.3%	76.7%	58.3%	
Maximum Green (s)	8.0		5.0	5.0	40.0	29.0	
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)	-2.0			-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0	
Lead/Lag			Lead	Lead		Lag	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min	
v/c Ratio	0.42			0.19	0.18	0.49	
Control Delay (s/veh)	16.6			4.0	3.3	6.1	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay (s/veh)	16.6			4.0	3.3	6.1	
Queue Length 50th (ft)	27			8	23	52	
Queue Length 95th (ft)	56			17	35	81	
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			
Base Capacity (vph)	627			431	2466	2003	
Starvation Cap Reductn	0			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.40			0.19	0.18	0.48	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 11 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

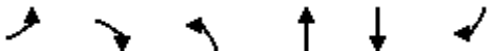
Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	146	77	1	73	393	677	192
Future Volume (vph)	146	77	1	73	393	677	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0			4.0	4.0	4.0	
Lane Util. Factor	0.97			1.00	0.95	0.95	
Frt	0.95			1.00	1.00	0.97	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	3207			1678	3471	3276	
Flt Permitted	0.97			0.21	1.00	1.00	
Satd. Flow (perm)	3207			379	3471	3276	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.91	0.91
Adj. Flow (vph)	162	86	1	81	437	744	211
RTOR Reduction (vph)	72	0	0	0	0	41	0
Lane Group Flow (vph)	176	0	0	82	437	914	0
Heavy Vehicles (%)	2%	2%	4%	4%	4%	3%	3%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Actuated Green, G (s)	7.8			40.2	40.2	30.9	
Effective Green, g (s)	9.8			42.2	42.2	32.9	
Actuated g/C Ratio	0.16			0.70	0.70	0.55	
Clearance Time (s)	6.0			6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	3.0	
Lane Grp Cap (vph)	523			381	2441	1796	
v/s Ratio Prot	c0.05			0.02	c0.13	c0.28	
v/s Ratio Perm				0.13			
v/c Ratio	0.34			0.22	0.18	0.51	
Uniform Delay, d1	22.2			3.9	3.0	8.5	
Progression Factor	1.00			1.00	1.00	0.68	
Incremental Delay, d2	0.4			0.3	0.2	0.9	
Delay (s)	22.6			4.1	3.2	6.7	
Level of Service	C			A	A	A	
Approach Delay (s/veh)	22.6				3.3	6.7	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

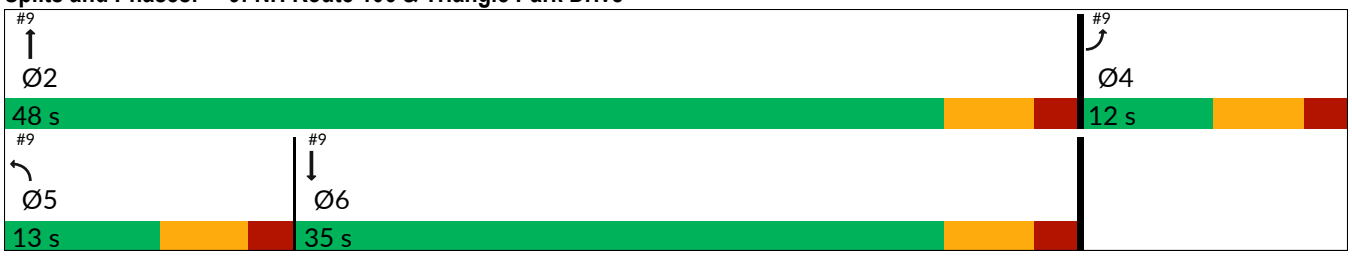
c Critical Lane Group

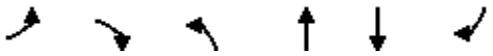


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	72	110	462	1117	52
Future Volume (vph)	5	72	110	462	1117	52
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.874				0.993	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1787	0	1834	3438	3549	0
Flt Permitted	0.997		0.950			
Satd. Flow (perm)	1787	0	1834	3438	3549	0
Satd. Flow (RTOR)	80				12	
Adj. Flow (vph)	6	80	122	513	1241	58
Lane Group Flow (vph)	86	0	122	513	1299	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	12.0		13.0	48.0	35.0	
Total Split (%)	20.0%		21.7%	80.0%	58.3%	
Maximum Green (s)	6.0		7.0	42.0	29.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.25		0.40	0.19	0.60	
Control Delay (s/veh)	9.8		27.6	2.5	11.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	9.8		27.6	2.5	11.3	
Queue Length 50th (ft)	2		43	23	171	
Queue Length 95th (ft)	37		88	34	240	
Internal Link Dist (ft)	1073			1451	1013	
Turn Bay Length (ft)			150			
Base Capacity (vph)	344		319	2718	2132	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.25		0.38	0.19	0.61	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 54.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 9: NH Route 106 & Triangle Park Drive





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	72	110	462	1117	52
Future Volume (vph)	5	72	110	462	1117	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.87		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1787		1834	3438	3550	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	1787		1834	3438	3550	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	80	122	513	1241	58
RTOR Reduction (vph)	71	0	0	0	5	0
Lane Group Flow (vph)	15	0	122	513	1294	0
Heavy Vehicles (%)	5%	5%	5%	5%	1%	1%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	4.4		5.1	41.0	29.9	
Effective Green, g (s)	6.4		7.1	43.0	31.9	
Actuated g/C Ratio	0.11		0.12	0.75	0.56	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	199		226	2575	1972	
v/s Ratio Prot	c0.01		c0.07	0.15	c0.36	
v/s Ratio Perm						
v/c Ratio	0.07		0.54	0.20	0.66	
Uniform Delay, d1	22.8		23.6	2.1	8.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2		2.5	0.0	0.8	
Delay (s)	23.0		26.1	2.2	9.7	
Level of Service	C		C	A	A	
Approach Delay (s/veh)	23.0			6.8	9.7	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

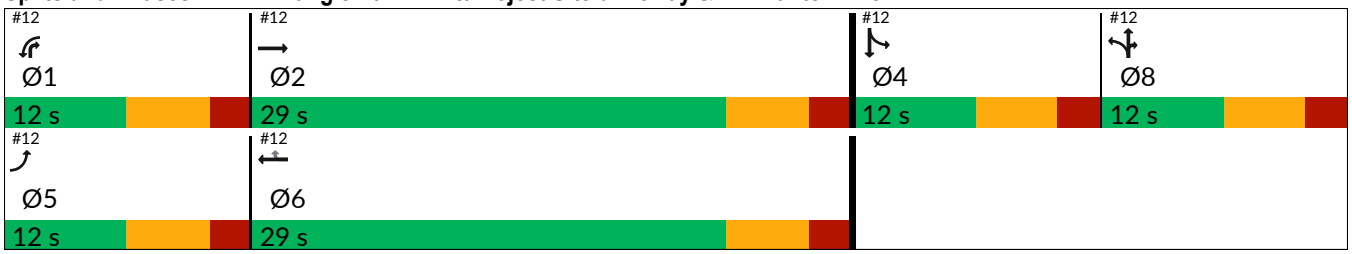
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	162	73	44	149	49	39	7	43	45	4	43
Future Volume (vph)	57	162	73	44	149	49	39	7	43	45	4	43
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.953				0.850			0.850		0.874	
Flt Protected	0.950			0.950				0.960		0.950	0.996	
Satd. Flow (prot)	1787	3293	0	1694	1845	1568	0	1788	1583	1681	1540	0
Flt Permitted	0.950			0.950				0.960		0.950	0.996	
Satd. Flow (perm)	1787	3293	0	1694	1845	1568	0	1788	1583	1681	1540	0
Satd. Flow (RTOR)		81				252			151		48	
Adj. Flow (vph)	63	180	81	49	166	54	43	8	48	50	4	48
Lane Group Flow (vph)	63	261	0	49	166	54	0	51	48	45	57	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	12.0	29.0		12.0	29.0	29.0	12.0	12.0		12.0	12.0	
Total Split (%)	18.5%	44.6%		18.5%	44.6%	44.6%	18.5%	18.5%		18.5%	18.5%	
Maximum Green (s)	6.0	23.0		6.0	23.0	23.0	6.0	6.0		6.0	6.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	0.0		-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	6.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.17	0.14		0.14	0.16	0.06		0.14	0.07	0.13	0.16	
Control Delay (s/veh)	20.9	10.1		20.8	15.0	0.1		20.7	0.2	20.8	10.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	20.9	10.1		20.8	15.0	0.1		20.7	0.2	20.8	10.5	
Queue Length 50th (ft)	17	23		14	44	0		14	0	12	2	
Queue Length 95th (ft)	48	48		41	87	0		42	0	40	30	
Internal Link Dist (ft)		981			380			958			380	
Turn Bay Length (ft)	250			250		100			170	250		
Base Capacity (vph)	383	2224		363	1231	1064		383	651	360	368	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.16	0.12		0.13	0.13	0.05		0.13	0.07	0.13	0.15	

Intersection Summary
Cycle Length: 65

Actuated Cycle Length: 42.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

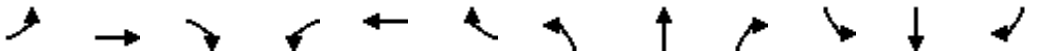
Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	162	73	44	149	49	39	7	43	45	4	43
Future Volume (vph)	57	162	73	44	149	49	39	7	43	45	4	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	6.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	0.95		1.00	1.00	0.85		1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3294		1694	1845	1568		1787	1583	1681	1539	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3294		1694	1845	1568		1787	1583	1681	1539	
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)	63	180	81	49	166	54	43	8	48	50	4	48
RTOR Reduction (vph)	0	48	0	0	0	34	0	0	35	0	43	0
Lane Group Flow (vph)	63	213	0	49	166	20	0	51	13	45	14	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Actuated Green, G (s)	2.8	18.5		2.8	18.5	18.5		2.8	11.6	2.8	2.8	
Effective Green, g (s)	4.8	20.5		4.8	20.5	18.5		4.8	13.6	4.8	4.8	
Actuated g/C Ratio	0.09	0.40		0.09	0.40	0.36		0.09	0.27	0.09	0.09	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	168	1326		159	743	569		168	422	158	145	
v/s Ratio Prot	c0.04	0.06		0.03	c0.09			c0.03	0.01	c0.03	0.01	
v/s Ratio Perm						0.01						
v/c Ratio	0.38	0.16		0.31	0.22	0.03		0.30	0.03	0.28	0.09	
Uniform Delay, d1	21.6	9.7		21.5	10.0	10.4		21.5	13.8	21.5	21.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.1		1.1	0.2	0.0		1.0	0.0	1.0	0.3	
Delay (s)	23.0	9.8		22.6	10.1	10.5		22.5	13.8	22.4	21.3	
Level of Service	C	A		C	B	B		C	B	C	C	
Approach Delay (s/veh)		12.3			12.5			18.3			21.8	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

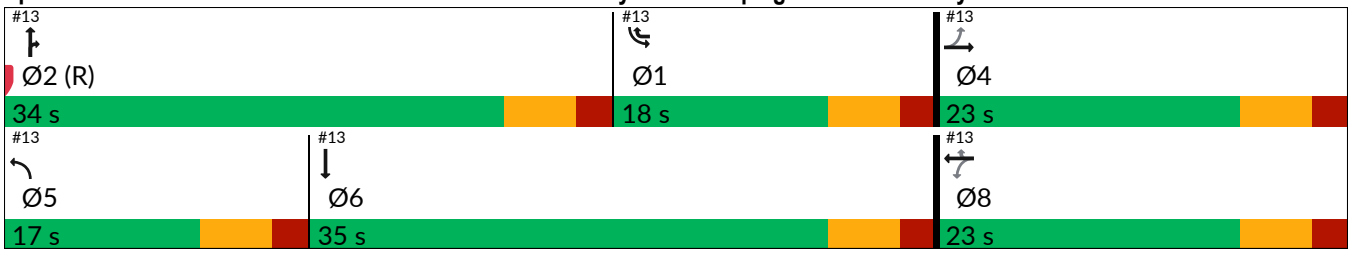


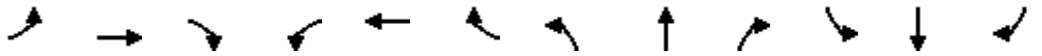
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Future Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.941				0.850			0.850		0.986	
Flt Protected		0.971			0.950		0.950			0.950		
Satd. Flow (prot)	0	3298	0	0	1829	1636	1787	3455	1546	3351	3407	0
Flt Permitted		0.789			0.700		0.950			0.950		
Satd. Flow (perm)	0	2680	0	0	1347	1636	1787	3455	1546	3351	3407	0
Satd. Flow (RTOR)		218				131			131		18	
Adj. Flow (vph)	51	0	33	43	0	29	19	267	41	66	283	30
Lane Group Flow (vph)	0	84	0	0	43	29	19	267	41	66	313	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	23.0	23.0		23.0	23.0	18.0	17.0	34.0	34.0	18.0	35.0	
Total Split (%)	30.7%	30.7%		30.7%	30.7%	24.0%	22.7%	45.3%	45.3%	24.0%	46.7%	
Maximum Green (s)	17.0	17.0		17.0	17.0	12.0	11.0	28.0	28.0	12.0	29.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	Min	
v/c Ratio		0.15			0.24	0.05	0.10	0.12	0.04	0.13	0.12	
Control Delay (s/veh)		0.9			31.6	0.2	30.5	8.5	0.1	24.8	4.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		0.9			31.6	0.2	30.5	8.5	0.1	24.8	4.1	
Queue Length 50th (ft)		0			19	0	8	29	0	11	16	
Queue Length 95th (ft)		0			46	0	27	54	0	26	50	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		841			341	581	309	2175	1022	625	2610	
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		0.10			0.13	0.05	0.06	0.12	0.04	0.11	0.12	

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 58 (77%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway

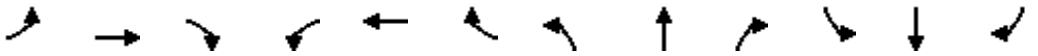




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Future Volume (vph)	40	0	26	39	0	26	17	240	37	59	255	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3297			1829	1636	1787	3455	1546	3351	3405	
Flt Permitted		0.79			0.70	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2682			1347	1636	1787	3455	1546	3351	3405	
Peak-hour factor, PHF	0.78	0.78	0.78	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	0	33	43	0	29	19	267	41	66	283	30
RTOR Reduction (vph)	0	74	0	0	0	20	0	0	19	0	6	0
Lane Group Flow (vph)	0	10	0	0	43	9	19	267	22	66	307	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		6.9			6.9	18.7	1.6	38.3	38.3	11.8	48.5	
Effective Green, g (s)		8.9			8.9	22.7	3.6	40.3	40.3	13.8	50.5	
Actuated g/C Ratio		0.12			0.12	0.30	0.05	0.54	0.54	0.18	0.67	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		318			159	582	85	1856	830	616	2292	
v/s Ratio Prot						0.00	c0.01	c0.08	0.01	0.02	c0.09	
v/s Ratio Perm		0.00			c0.03	0.00						
v/c Ratio		0.03			0.27	0.02	0.22	0.14	0.03	0.11	0.13	
Uniform Delay, d1		29.2			30.1	18.3	34.4	8.7	8.1	25.5	4.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.90	0.99	
Incremental Delay, d2		0.0			0.9	0.0	1.3	0.2	0.1	0.1	0.0	
Delay (s)		29.3			31.0	18.3	35.7	8.9	8.2	23.0	4.4	
Level of Service		C			C	B	D	A	A	C	A	
Approach Delay (s/veh)		29.3			25.9			10.3			7.6	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



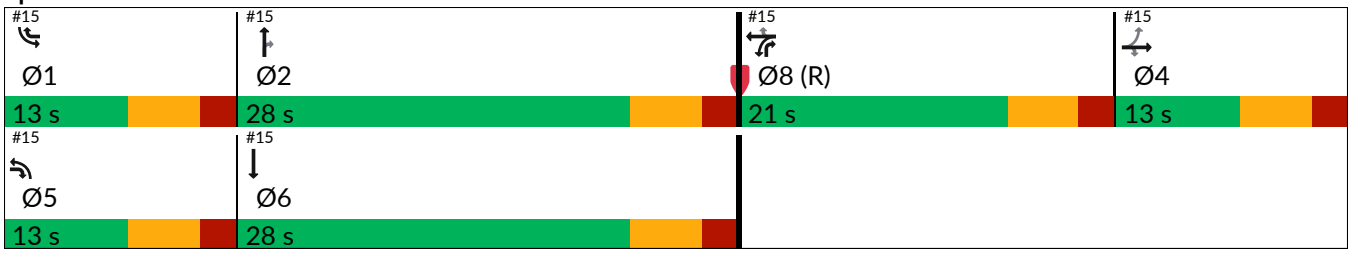
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Future Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.990		0.950	0.961		0.950			0.950		
Satd. Flow (prot)	0	1818	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Flt Permitted		0.886		0.950	0.961		0.950			0.950		
Satd. Flow (perm)	0	1627	1561	1641	1717	1492	1787	3455	1599	3433	3411	0
Satd. Flow (RTOR)			131			131			276		3	
Adj. Flow (vph)	8	31	72	269	29	42	51	333	276	62	400	9
Lane Group Flow (vph)	0	39	72	148	150	42	51	333	276	62	409	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	13.0	13.0	21.0	21.0	13.0	13.0	28.0	21.0	13.0	28.0	
Total Split (%)	17.3%	17.3%	17.3%	28.0%	28.0%	17.3%	17.3%	37.3%	28.0%	17.3%	37.3%	
Maximum Green (s)	7.0	7.0	7.0	15.0	15.0	7.0	7.0	22.0	15.0	7.0	22.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	None	None	Min	C-Max	None	Min	
v/c Ratio		0.21	0.16	0.21	0.20	0.05	0.25	0.44	0.23	0.16	0.54	
Control Delay (s/veh)		33.0	1.6	13.8	13.7	0.1	33.4	26.4	1.4	37.4	24.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		33.0	1.6	13.8	13.7	0.1	33.4	26.4	1.4	37.4	24.0	
Queue Length 50th (ft)		17	0	28	29	0	22	71	0	9	94	
Queue Length 95th (ft)		44	7	57	57	0	54	100	26	36	62	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		195	451	708	741	911	214	1105	1225	411	1093	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.20	0.16	0.21	0.20	0.05	0.24	0.30	0.23	0.15	0.37	

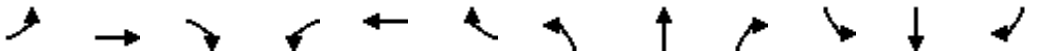
Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 41 (55%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Future Volume (vph)	7	28	65	242	26	38	46	300	248	56	360	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1818	1561	1641	1718	1492	1787	3455	1599	3433	3410	
Flt Permitted		0.89	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1628	1561	1641	1718	1492	1787	3455	1599	3433	3410	
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)	8	31	72	269	29	42	51	333	276	62	400	9
RTOR Reduction (vph)	0	0	59	0	0	22	0	0	109	0	2	0
Lane Group Flow (vph)	0	39	13	148	150	20	51	333	167	62	407	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		4.2	9.7	26.8	26.8	32.2	5.5	14.6	41.4	5.4	14.5	
Effective Green, g (s)		6.2	13.7	28.8	28.8	36.2	7.5	16.6	45.4	7.4	16.5	
Actuated g/C Ratio		0.08	0.18	0.38	0.38	0.48	0.10	0.22	0.61	0.10	0.22	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		134	368	630	659	720	178	764	1053	338	750	
v/s Ratio Prot			0.00	c0.09	0.09	0.00	c0.03	0.10	0.06	0.02	c0.12	
v/s Ratio Perm		c0.02	0.00			0.01			0.04			
v/c Ratio		0.29	0.04	0.23	0.23	0.03	0.29	0.44	0.16	0.18	0.54	
Uniform Delay, d1		32.3	25.2	15.6	15.6	10.2	31.3	25.2	6.5	31.0	25.9	
Progression Factor		1.00	1.00	0.70	0.70	1.00	1.00	1.00	1.00	1.22	0.84	
Incremental Delay, d2		1.2	0.0	0.9	0.8	0.0	0.9	0.4	0.1	0.3	0.8	
Delay (s)		33.5	25.3	11.9	11.8	10.2	32.2	25.6	6.5	38.1	22.6	
Level of Service		C	C	B	B	B	C	C	A	D	C	
Approach Delay (s/veh)		28.2			11.6			18.1			24.6	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Future Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.977			0.983	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1671	1495	0	1829	1636	1829	3343	0	3400	3330	0
Flt Permitted		0.722			0.731		0.950			0.950		
Satd. Flow (perm)	0	1270	1495	0	1407	1636	1829	3343	0	3400	3330	0
Satd. Flow (RTOR)			44			97		32			21	
Adj. Flow (vph)	40	0	39	54	0	97	50	282	51	124	377	48
Lane Group Flow (vph)	0	40	39	0	54	97	50	333	0	124	425	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	27.0	27.0	15.0	27.0	27.0	15.0	15.0	33.0		15.0	33.0	
Total Split (%)	36.0%	36.0%	20.0%	36.0%	36.0%	20.0%	20.0%	44.0%		20.0%	44.0%	
Maximum Green (s)	21.0	21.0	9.0	21.0	21.0	9.0	9.0	27.0		9.0	27.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.23	0.09		0.28	0.19	0.22	0.15		0.27	0.19	
Control Delay (s/veh)		31.1	5.2		31.8	4.7	20.6	19.3		29.1	6.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.1	5.2		31.8	4.7	20.6	19.3		29.1	6.2	
Queue Length 50th (ft)		18	0		23	0	24	82		27	46	
Queue Length 95th (ft)		45	17		53	27	59	92		42	84	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		389	443		431	522	272	2267		509	2275	
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		0.10	0.09		0.13	0.19	0.18	0.15		0.24	0.19	

Intersection Summary

Cycle Length: 75

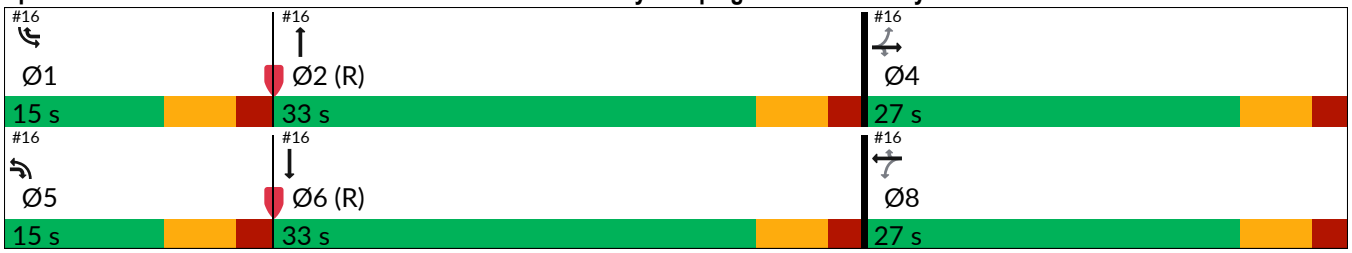
Actuated Cycle Length: 75

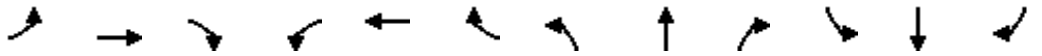
Offset: 15 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Future Volume (vph)	36	0	35	49	0	87	45	254	46	112	339	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1671	1495		1829	1636	1829	3343		3400	3331	
Flt Permitted		0.72	1.00		0.73	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1270	1495		1407	1636	1829	3343		3400	3331	
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)	40	0	39	54	0	97	50	282	51	124	377	48
RTOR Reduction (vph)	0	0	31	0	0	75	0	12	0	0	8	0
Lane Group Flow (vph)	0	40	8	0	54	22	50	321	0	124	417	0
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		5.9	12.3		5.9	12.8	6.4	44.2		6.9	44.7	
Effective Green, g (s)		7.9	16.3		7.9	16.8	8.4	46.2		8.9	46.7	
Actuated g/C Ratio		0.11	0.22		0.11	0.22	0.11	0.62		0.12	0.62	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		133	404		148	453	204	2059		403	2074	
v/s Ratio Prot			0.00			0.01	0.03	0.10		c0.04	c0.13	
v/s Ratio Perm		0.03	0.00		c0.04	0.01						
v/c Ratio		0.30	0.02		0.36	0.05	0.25	0.16		0.31	0.20	
Uniform Delay, d1		31.0	23.1		31.2	22.8	30.4	6.1		30.2	6.1	
Progression Factor		1.00	1.00		1.00	1.00	0.64	2.84		0.96	0.87	
Incremental Delay, d2		1.3	0.0		1.5	0.0	0.6	0.2		0.4	0.2	
Delay (s)		32.3	23.1		32.7	22.9	20.2	17.5		29.4	5.5	
Level of Service		C	C		C	C	C	B		C	A	
Approach Delay (s/veh)		27.7			26.4			17.9			10.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

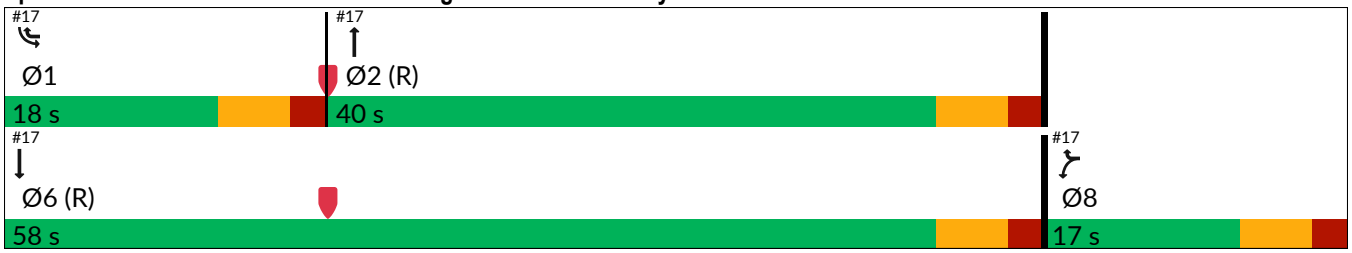
c Critical Lane Group

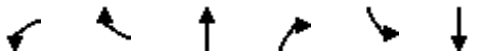
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	12	364	14	17	483
Future Volume (vph)	11	12	364	14	17	483
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.995			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	2006	1794	3404	0	1770	3421
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	2006	1794	3404	0	1770	3421
Satd. Flow (RTOR)		13	7			
Adj. Flow (vph)	12	13	396	15	19	537
Lane Group Flow (vph)	12	13	411	0	19	537
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Detector Phase	8	8 1	2		1	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		6.0	10.0
Minimum Split (s)	12.0		16.0		12.0	16.0
Total Split (s)	17.0		40.0		18.0	58.0
Total Split (%)	22.7%		53.3%		24.0%	77.3%
Maximum Green (s)	11.0		34.0		12.0	52.0
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.05	0.04	0.14		0.09	0.17
Control Delay (s/veh)	30.3	10.3	3.8		30.5	1.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	30.3	10.3	3.8		30.5	1.3
Queue Length 50th (ft)	5	0	0		8	0
Queue Length 95th (ft)	20	12	64		27	37
Internal Link Dist (ft)	358		266			887
Turn Bay Length (ft)					360	
Base Capacity (vph)	347	465	2860		330	3117
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	0.03	0.03	0.14		0.06	0.17

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 18 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

Splits and Phases: 17: NH Route 9 & Regal Concord Driveway





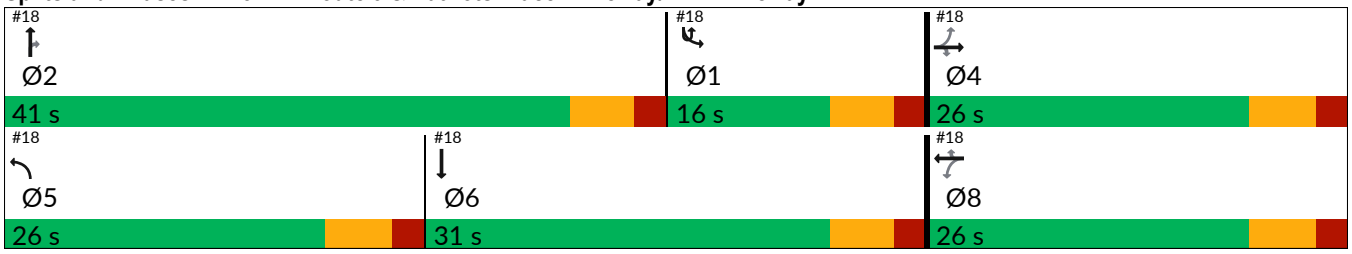
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	12	364	14	17	483
Future Volume (vph)	11	12	364	14	17	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	12	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2006	1794	3403		1770	3421
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	2006	1794	3403		1770	3421
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.90	0.90
Adj. Flow (vph)	12	13	396	15	19	537
RTOR Reduction (vph)	0	11	2	0	0	0
Lane Group Flow (vph)	12	2	409	0	19	537
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Actuated Green, G (s)	2.7	11.6	51.4		2.9	60.3
Effective Green, g (s)	4.7	13.6	53.4		4.9	62.3
Actuated g/C Ratio	0.06	0.18	0.71		0.07	0.83
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	125	325	2422		115	2841
v/s Ratio Prot	c0.01	0.00	0.12		0.01	c0.16
v/s Ratio Perm						
v/c Ratio	0.10	0.01	0.17		0.17	0.19
Uniform Delay, d1	33.1	25.2	3.5		33.1	1.3
Progression Factor	1.00	1.00	0.99		1.00	1.00
Incremental Delay, d2	0.3	0.0	0.2		0.7	0.1
Delay (s)	33.5	25.2	3.6		33.8	1.4
Level of Service	C	C	A		C	A
Approach Delay (s/veh)	29.2		3.6			2.5
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Future Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850			0.850			0.850			0.994
Flt Protected		0.964			0.954		0.950				0.950	
Satd. Flow (prot)	0	1832	1615	0	1743	1553	1770	3421	1531	0	1736	3335
Flt Permitted		0.750			0.833		0.950				0.950	
Satd. Flow (perm)	0	1425	1615	0	1522	1553	1770	3421	1531	0	1736	3335
Satd. Flow (RTOR)			197			197			118			5
Adj. Flow (vph)	3	1	9	44	2	3	14	392	11	1	6	519
Lane Group Flow (vph)	0	4	9	0	46	3	14	392	11	0	7	541
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	41.0	41.0	16.0	16.0	31.0
Total Split (%)	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%	49.4%	49.4%	19.3%	19.3%	37.3%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	35.0	35.0	10.0	10.0	25.0
Yellow Time (s)	4.0	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag							Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	None	Min
v/c Ratio		0.01	0.02		0.11	0.01	0.03	0.15	0.01		0.02	0.21
Control Delay (s/veh)		13.3	0.0		13.5	0.0	14.8	5.8	0.0		13.8	5.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)		13.3	0.0		13.5	0.0	14.8	5.8	0.0		13.8	5.3
Queue Length 50th (ft)		1	0		6	0	2	0	0		1	0
Queue Length 95th (ft)		5	0		22	0	16	77	0		10	98
Internal Link Dist (ft)		290			230			887				814
Turn Bay Length (ft)						55	360		150		360	
Base Capacity (vph)		947	1139		1011	1098	1176	3218	1447		629	2820
Starvation Cap Reductn		0	0		0	0	0	0	0		0	0
Spillback Cap Reductn		0	0		0	0	0	0	0		0	0
Storage Cap Reductn		0	0		0	0	0	0	0		0	0
Reduced v/c Ratio		0.00	0.01		0.05	0.00	0.01	0.12	0.01		0.01	0.19

Intersection Summary
Cycle Length: 83
Actuated Cycle Length: 35
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Satd. Flow (RTOR)	
Adj. Flow (vph)	22
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

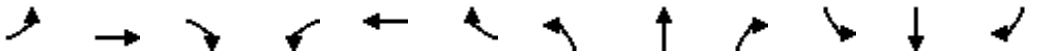
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Future Volume (vph)	2	1	6	27	1	2	13	353	10	1	5	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	12	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00		1.00	0.95
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85		1.00	0.99
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1831	1615		1744	1553	1770	3421	1531		1736	3335
Flt Permitted		0.75	1.00		0.83	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1425	1615		1521	1553	1770	3421	1531		1736	3335
Peak-hour factor, PHF	0.67	0.67	0.67	0.61	0.61	0.61	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	1	9	44	2	3	14	392	11	1	6	519
RTOR Reduction (vph)	0	0	8	0	0	3	0	0	5	0	0	2
Lane Group Flow (vph)	0	4	1	0	46	0	14	392	6	0	7	539
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	Prot	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		2.7	2.7		2.7	2.7	0.9	21.9	21.9		1.3	22.3
Effective Green, g (s)		4.7	4.7		4.7	4.7	2.9	23.9	23.9		3.3	24.3
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.07	0.54	0.54		0.08	0.55
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		152	172		162	166	116	1862	833		130	1846
v/s Ratio Prot							0.01	c0.11			0.00	c0.16
v/s Ratio Perm		0.00	0.00		c0.03	0.00			0.00			
v/c Ratio		0.03	0.01		0.28	0.00	0.12	0.21	0.01		0.05	0.29
Uniform Delay, d1		17.6	17.5		18.1	17.5	19.3	5.1	4.6		18.9	5.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.0		1.0	0.0	0.5	0.1	0.0		0.2	0.1
Delay (s)		17.6	17.5		19.0	17.5	19.8	5.2	4.6		19.0	5.3
Level of Service		B	B		B	B	B	A	A		B	A
Approach Delay (s/veh)		17.6			18.9			5.7				5.5
Approach LOS		B			B			A				A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Lane Width	11
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	22
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

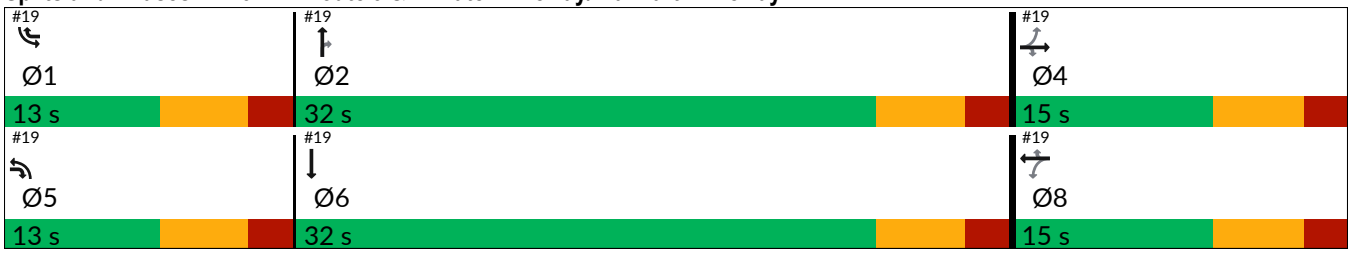
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Future Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.961			0.962		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1732	1531	1787	3455	1599	1685	3458	0
Flt Permitted		0.744			0.726		0.950			0.950		
Satd. Flow (perm)	0	1414	1615	0	1307	1531	1787	3455	1599	1685	3458	0
Satd. Flow (RTOR)			77			55			164		14	
Adj. Flow (vph)	57	13	77	25	7	48	38	259	12	57	451	28
Lane Group Flow (vph)	0	70	77	0	32	48	38	259	12	57	479	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	15.0	15.0	13.0	15.0	15.0	13.0	13.0	32.0	32.0	13.0	32.0	
Total Split (%)	25.0%	25.0%	21.7%	25.0%	25.0%	21.7%	21.7%	53.3%	53.3%	21.7%	53.3%	
Maximum Green (s)	9.0	9.0	7.0	9.0	9.0	7.0	7.0	26.0	26.0	7.0	26.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio		0.20	0.11		0.10	0.07	0.09	0.13	0.01	0.15	0.23	
Control Delay (s/veh)		16.5	2.7		15.9	2.7	16.9	9.5	0.0	17.1	9.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		16.5	2.7		15.9	2.7	16.9	9.5	0.0	17.1	9.4	
Queue Length 50th (ft)		15	0		7	0	8	25	0	12	46	
Queue Length 95th (ft)		42	14		24	10	30	47	0	39	82	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		437	748		404	699	452	2617	1251	426	2623	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.16	0.10		0.08	0.07	0.08	0.10	0.01	0.13	0.18	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 38.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Future Volume (vph)	49	11	66	21	6	40	34	233	11	51	406	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1826	1615		1733	1531	1787	3455	1599	1685	3459	
Flt Permitted		0.74	1.00		0.73	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1413	1615		1308	1531	1787	3455	1599	1685	3459	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	13	77	25	7	48	38	259	12	57	451	28
RTOR Reduction (vph)	0	0	57	0	0	36	0	0	6	0	7	0
Lane Group Flow (vph)	0	70	20	0	32	12	38	259	6	57	472	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		4.1	7.4		4.1	7.5	3.3	18.7	18.7	3.4	18.8	
Effective Green, g (s)		6.1	11.4		6.1	11.5	5.3	20.7	20.7	5.4	20.8	
Actuated g/C Ratio		0.14	0.26		0.14	0.26	0.12	0.47	0.47	0.12	0.47	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		195	562		180	536	214	1618	748	205	1627	
v/s Ratio Prot			0.00			0.00	0.02	0.07		c0.03	c0.14	
v/s Ratio Perm		c0.05	0.01		0.02	0.01			0.00			
v/c Ratio		0.36	0.04		0.18	0.02	0.18	0.16	0.01	0.28	0.29	
Uniform Delay, d1		17.3	12.3		16.8	12.2	17.5	6.8	6.3	17.6	7.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1	0.0		0.5	0.0	0.4	0.0	0.0	0.7	0.1	
Delay (s)		18.4	12.3		17.3	12.2	17.9	6.8	6.3	18.4	7.3	
Level of Service		B	B		B	B	B	A	A	B	A	
Approach Delay (s/veh)		15.2			14.2			8.1			8.5	
Approach LOS		B			B			A			A	

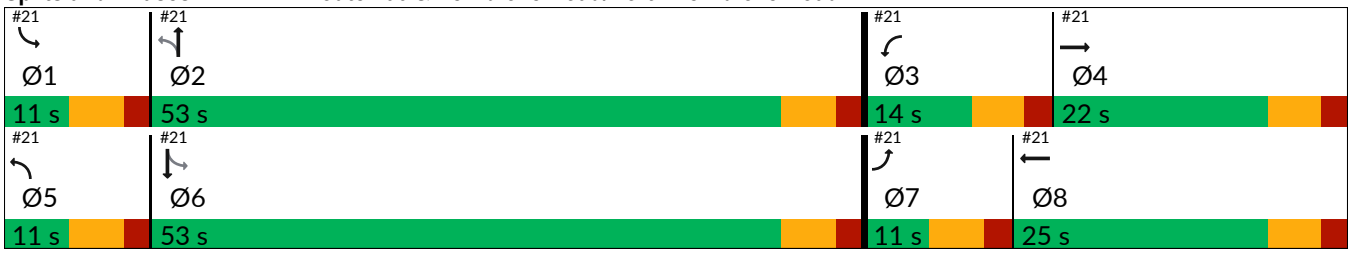
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	44.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

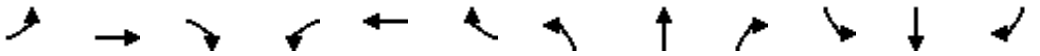
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Future Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.876			0.939			0.992			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	1648	0	1770	1574	0	1776	3411	0	1829	3468	0
Flt Permitted	0.950			0.950			0.106			0.398		
Satd. Flow (perm)	3467	1648	0	1770	1574	0	198	3411	0	766	3468	0
Satd. Flow (RTOR)		123			31			8			24	
Adj. Flow (vph)	53	26	123	67	91	62	74	550	31	51	1094	170
Lane Group Flow (vph)	53	149	0	67	153	0	74	581	0	51	1264	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	11.0	22.0		14.0	25.0		11.0	53.0		11.0	53.0	
Total Split (%)	11.0%	22.0%		14.0%	25.0%		11.0%	53.0%		11.0%	53.0%	
Maximum Green (s)	5.0	16.0		8.0	19.0		5.0	47.0		5.0	47.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
v/c Ratio	0.15	0.42		0.30	0.43		0.27	0.32		0.09	0.71	
Control Delay (s/veh)	42.1	14.6		43.0	31.4		10.1	12.6		7.8	19.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	42.1	14.6		43.0	31.4		10.1	12.6		7.8	19.3	
Queue Length 50th (ft)	14	13		35	63		15	100		10	277	
Queue Length 95th (ft)	36	68		85	131		38	158		28	411	
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200			250		
Base Capacity (vph)	346	514		252	493		272	2188		543	2231	
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	0.15	0.29		0.27	0.31		0.27	0.27		0.09	0.57	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 79.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

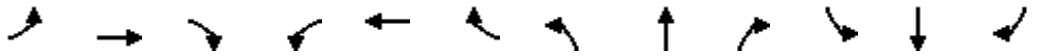




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Future Volume (vph)	48	23	111	60	82	56	67	495	28	46	985	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1648		1770	1575		1776	3411		1829	3468	
Flt Permitted	0.95	1.00		0.95	1.00		0.11	1.00		0.40	1.00	
Satd. Flow (perm)	3467	1648		1770	1575		198	3411		766	3468	
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)	53	26	123	67	91	62	74	550	31	51	1094	170
RTOR Reduction (vph)	0	103	0	0	25	0	0	4	0	0	12	0
Lane Group Flow (vph)	53	46	0	67	128	0	74	577	0	51	1252	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.5	11.3		5.6	14.4		44.0	40.4		41.8	39.3	
Effective Green, g (s)	4.5	13.3		7.6	16.4		48.0	42.4		45.8	41.3	
Actuated g/C Ratio	0.05	0.16		0.09	0.20		0.57	0.51		0.55	0.49	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	186	261		160	308		218	1725		475	1709	
v/s Ratio Prot	0.02	0.03		c0.04	c0.08		c0.02	0.17		0.01	c0.36	
v/s Ratio Perm							0.17			0.05		
v/c Ratio	0.28	0.17		0.42	0.42		0.34	0.33		0.11	0.73	
Uniform Delay, d1	38.1	30.5		36.0	29.5		11.5	12.3		8.9	16.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.3		1.8	0.9		0.9	0.1		0.1	1.7	
Delay (s)	39.0	30.8		37.8	30.4		12.4	12.4		9.0	18.5	
Level of Service	D	C		D	C		B	B		A	B	
Approach Delay (s/veh)		33.0			32.7			12.4			18.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Future Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.931				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1720	0	1736	1928	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.449			0.816			0.146			0.480		
Satd. Flow (perm)	836	1720	0	1491	1928	0	265	1818	1599	903	1818	1546
Satd. Flow (RTOR)		22			17				133			381
Adj. Flow (vph)	162	162	70	9	20	17	139	501	44	137	700	381
Lane Group Flow (vph)	162	232	0	9	37	0	139	501	44	137	700	381
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	22.0		11.0	11.0		11.0	48.0	48.0	37.0	37.0	37.0
Total Split (%)	12.2%	24.4%		12.2%	12.2%		12.2%	53.3%	53.3%	41.1%	41.1%	41.1%
Maximum Green (s)	5.0	16.0		5.0	5.0		5.0	42.0	42.0	31.0	31.0	31.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.51	0.57		0.06	0.17		0.43	0.42	0.04	0.31	0.79	0.40
Control Delay (s/veh)	28.2	26.5		29.6	21.7		9.2	7.5	0.1	13.7	23.4	2.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.2	26.5		29.6	21.7		9.2	7.5	0.1	13.7	23.4	2.8
Queue Length 50th (ft)	58	78		4	8		21	97	0	35	247	0
Queue Length 95th (ft)	109	143		17	35		41	156	0	74	#446	41
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	316	475		154	215		324	1186	1089	441	890	951
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.49		0.06	0.17		0.43	0.42	0.04	0.31	0.79	0.40

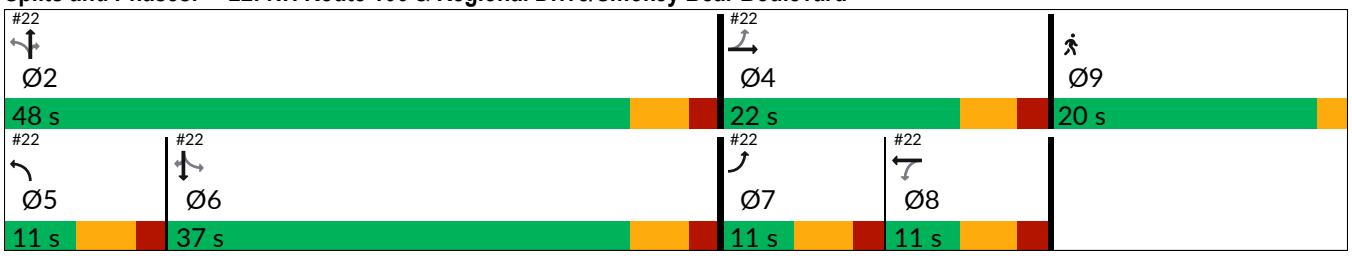
Intersection Summary
Cycle Length: 90

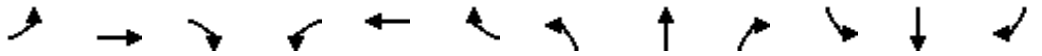
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	22%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 67.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

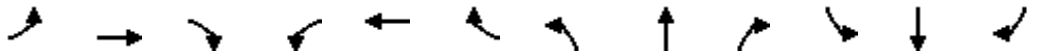




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Future Volume (vph)	146	146	63	8	18	15	125	451	40	129	658	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1719		1736	1928		1728	1818	1599	1787	1818	1546
Flt Permitted	0.45	1.00		0.82	1.00		0.15	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	837	1719		1491	1928		265	1818	1599	902	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Adj. Flow (vph)	162	162	70	9	20	17	139	501	44	137	700	381
RTOR Reduction (vph)	0	16	0	0	16	0	0	0	16	0	0	201
Lane Group Flow (vph)	162	216	0	9	21	0	139	501	28	137	700	180
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	16.0	16.0		2.9	2.9		42.1	42.1	42.1	31.1	31.1	31.1
Effective Green, g (s)	18.0	18.0		4.9	4.9		44.1	44.1	44.1	33.1	33.1	33.1
Actuated g/C Ratio	0.26	0.26		0.07	0.07		0.63	0.63	0.63	0.47	0.47	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	336	441		104	134		312	1143	1005	425	858	729
v/s Ratio Prot	0.06	c0.13			0.01		0.04	c0.28			c0.38	
v/s Ratio Perm	0.06			0.01			0.24		0.02	0.15		0.12
v/c Ratio	0.48	0.49		0.09	0.16		0.45	0.44	0.03	0.32	0.82	0.25
Uniform Delay, d1	21.4	22.1		30.5	30.7		10.1	6.7	4.9	11.5	15.9	11.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.9		0.4	0.6		1.0	0.3	0.0	0.4	6.0	0.2
Delay (s)	22.5	23.0		30.9	31.2		11.2	6.9	4.9	12.0	21.9	11.2
Level of Service	C	C		C	C		B	A	A	B	C	B
Approach Delay (s/veh)		22.8			31.1			7.7			17.5	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Future Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996				0.850			0.850
Flt Protected	0.950							0.950			0.950	
Satd. Flow (prot)	3433	3303	0	1689	3196	0	0	1805	1830	0	1631	1459
Flt Permitted	0.950							0.870			0.870	
Satd. Flow (perm)	3433	3303	0	1689	3196	0	0	1653	1830	0	1493	1459
Satd. Flow (RTOR)					2				155			376
Adj. Flow (vph)	701	1022	3	0	1078	28	1	0	1	38	0	376
Lane Group Flow (vph)	701	1025	0	0	1106	0	0	1	1	0	38	376
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	31.0	71.0		11.0	51.0		11.0	11.0	11.0	11.0	11.0	31.0
Total Split (%)	25.8%	59.2%		9.2%	42.5%		9.2%	9.2%	9.2%	9.2%	9.2%	25.8%
Maximum Green (s)	25.0	65.0		5.0	45.0		5.0	5.0	5.0	5.0	5.0	25.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.63	0.34			0.69			0.01	0.00		0.28	0.47
Control Delay (s/veh)	28.0	1.6			18.8			40.0	0.0		45.0	4.2
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	28.0	1.6			18.8			40.0	0.0		45.0	4.2
Queue Length 50th (ft)	174	49			256			1	0		21	0
Queue Length 95th (ft)	256	64			333			6	0		57	56
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500											105
Base Capacity (vph)	1218	2940			1975			152	309		137	839
Starvation Cap Reductn	0	0			0			0	0		0	0
Spillback Cap Reductn	0	0			0			0	0		0	0
Storage Cap Reductn	0	0			0			0	0		0	0
Reduced v/c Ratio	0.58	0.35			0.56			0.01	0.00		0.28	0.45

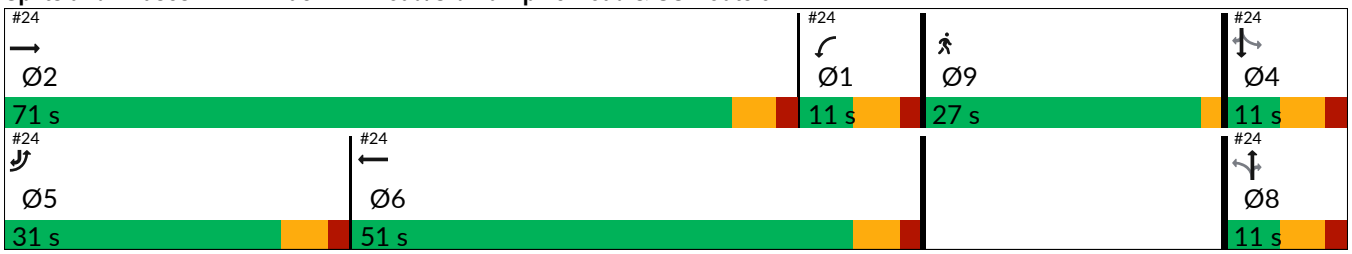
Intersection Summary
Cycle Length: 120

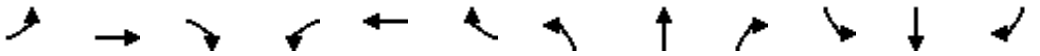
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 79.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3

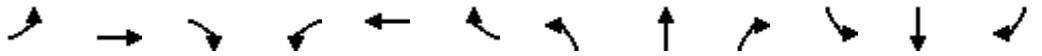




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Future Volume (vph)	631	920	3	0	970	25	1	0	1	34	0	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95			0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00			1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	3433	3302			3197			1805	1830		1631	1459
Flt Permitted	0.95	1.00			1.00			0.87	1.00		0.87	1.00
Satd. Flow (perm)	3433	3302			3197			1652	1830		1493	1459
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)	701	1022	3	0	1078	28	1	0	1	38	0	376
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	1	0	0	237
Lane Group Flow (vph)	701	1025	0	0	1105	0	0	1	0	0	38	139
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	0%	0%	0%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Actuated Green, G (s)	23.7	67.4			37.7			2.6	2.6		2.6	26.3
Effective Green, g (s)	25.7	69.4			39.7			4.6	4.6		4.6	30.3
Actuated g/C Ratio	0.31	0.85			0.48			0.06	0.06		0.06	0.37
Clearance Time (s)	6.0	6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	1075	2794			1547			92	102		83	610
v/s Ratio Prot	c0.20	0.31			c0.35							0.07
v/s Ratio Perm								0.00	0.00		c0.03	0.02
v/c Ratio	0.65	0.37			0.71			0.01	0.00		0.46	0.23
Uniform Delay, d1	24.3	1.4			16.7			36.6	36.5		37.5	17.8
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.1			1.6			0.0	0.0		4.0	0.2
Delay (s)	25.7	1.5			18.3			36.6	36.5		41.5	18.0
Level of Service	C	A			B			D	D		D	B
Approach Delay (s/veh)		11.3			18.3			36.6			20.1	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Future Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850						0.850		0.884	
Flt Protected	0.950			0.950			0.950	0.950				
Satd. Flow (prot)	1728	3455	1492	1728	4964	0	1665	1665	1620	0	1792	0
Flt Permitted	0.950			0.950			0.950	0.950				
Satd. Flow (perm)	1728	3455	1492	1728	4964	0	1665	1665	1620	0	1792	0
Satd. Flow (RTOR)			120						185		12	
Adj. Flow (vph)	3	1392	163	31	968	0	44	0	10	0	2	12
Lane Group Flow (vph)	3	1392	163	31	968	0	22	22	10	0	14	0
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Detector Phase	5	2	2 3	1	6		3	3	3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0	5.0	6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		11.0	11.0	11.0	12.0	12.0	
Total Split (s)	12.0	24.0		12.0	24.0		19.0	19.0	19.0	12.0	12.0	
Total Split (%)	12.0%	24.0%		12.0%	24.0%		19.0%	19.0%	19.0%	12.0%	12.0%	
Maximum Green (s)	6.0	18.0		6.0	18.0		13.0	13.0	13.0	6.0	6.0	
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)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	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	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.02	0.58	0.13	0.19	0.26		0.15	0.15	0.03		0.09	
Control Delay (s/veh)	42.7	12.2	1.8	50.5	3.6		43.7	43.7	0.2		24.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	42.7	12.2	1.8	50.5	3.6		43.7	43.7	0.2		24.3	
Queue Length 50th (ft)	2	205	4	20	31		14	14	0		1	
Queue Length 95th (ft)	11	447	29	54	58		37	37	0		5	
Internal Link Dist (ft)		856			537			557			277	
Turn Bay Length (ft)	105		105	150			300		300			
Base Capacity (vph)	139	2398	1315	163	3751		249	249	400		158	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.02	0.58	0.12	0.19	0.26		0.09	0.09	0.03		0.09	

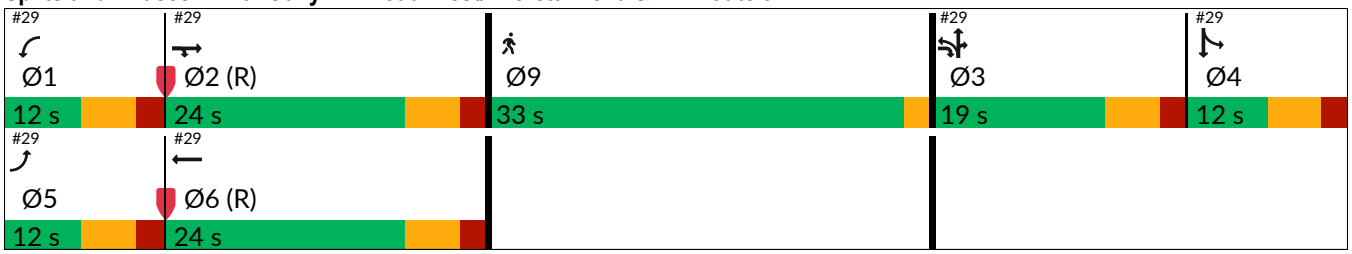
Intersection Summary
Cycle Length: 100

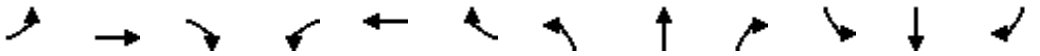
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	33%
Maximum Green (s)	31.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	24.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 100
Offset: 55 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Future Volume (vph)	3	1253	147	29	920	0	38	0	9	0	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	11	11	12	12	12	13	12	14	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00	
Satd. Flow (prot)	1728	3455	1492	1728	4964		1665	1665	1620		1792	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00	
Satd. Flow (perm)	1728	3455	1492	1728	4964		1665	1665	1620		1792	
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.86	0.86	0.86	0.42	0.42	0.42
Adj. Flow (vph)	3	1392	163	31	968	0	44	0	10	0	2	12
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	9	0	11	0
Lane Group Flow (vph)	3	1392	135	31	968	0	22	22	1	0	3	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Actuated Green, G (s)	1.3	61.4	74.3	5.0	65.1		6.9	6.9	6.9		2.7	
Effective Green, g (s)	3.3	63.4	76.3	7.0	67.1		8.9	8.9	8.9		4.7	
Actuated g/C Ratio	0.03	0.63	0.76	0.07	0.67		0.09	0.09	0.09		0.05	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	57	2190	1138	120	3330		148	148	144		84	
v/s Ratio Prot	0.00	c0.40	c0.09	c0.02	c0.19		0.01	0.01	0.00		c0.00	
v/s Ratio Perm												
v/c Ratio	0.05	0.64	0.12	0.26	0.29		0.15	0.15	0.01		0.03	
Uniform Delay, d1	46.8	11.2	3.1	44.0	6.7		42.1	42.1	41.5		45.5	
Progression Factor	1.00	1.00	1.00	1.16	0.65		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.4	1.4	0.0	1.1	0.2		0.5	0.5	0.0		0.1	
Delay (s)	47.2	12.6	3.1	52.3	4.6		42.5	42.5	41.5		45.6	
Level of Service	D	B	A	D	A		D	D	D		D	
Approach Delay (s/veh)		11.7			6.1			42.3			45.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Future Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Lane Util. Factor	1.00	0.91	1.00	0.95	0.97	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.850		
Flt Protected	0.950				0.950			0.950	0.950		0.950	
Satd. Flow (prot)	1728	4964	1546	0	3351	3455	0	1618	1618	1524	1865	1963
Flt Permitted	0.950				0.950			0.950	0.950		0.950	
Satd. Flow (perm)	1728	4964	1546	0	3351	3455	0	1618	1618	1524	1865	1963
Satd. Flow (RTOR)			120							185		
Adj. Flow (vph)	3	1378	20	1	51	1019	1	34	0	45	4	0
Lane Group Flow (vph)	3	1378	20	0	52	1020	0	17	17	45	4	0
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Detector Phase	5	2	2 3	1	1	6		3	3	3	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0	12.0	12.0	12.0
Total Split (s)	12.0	32.0		15.0	15.0	35.0		12.0	12.0	12.0	12.0	12.0
Total Split (%)	12.0%	32.0%		15.0%	15.0%	35.0%		12.0%	12.0%	12.0%	12.0%	12.0%
Maximum Green (s)	6.0	26.0		9.0	9.0	29.0		6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.02	0.38	0.02		0.17	0.36		0.12	0.12	0.15	0.03	
Control Delay (s/veh)	49.0	3.6	0.0		42.9	5.2		43.4	43.4	1.0	43.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	49.0	3.6	0.0		42.9	5.2		43.4	43.4	1.0	43.0	
Queue Length 50th (ft)	2	39	0		15	56		11	11	0	2	
Queue Length 95th (ft)	m3	59	m0		34	252		34	34	0	4	
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225		225		200			90				
Base Capacity (vph)	139	3633	1312		368	2813		142	142	303	150	
Starvation Cap Reductn	0	0	0		0	0		0	0	0	0	
Spillback Cap Reductn	0	0	0		0	0		0	0	0	0	
Storage Cap Reductn	0	0	0		0	0		0	0	0	0	
Reduced v/c Ratio	0.02	0.38	0.02		0.14	0.36		0.12	0.12	0.15	0.03	

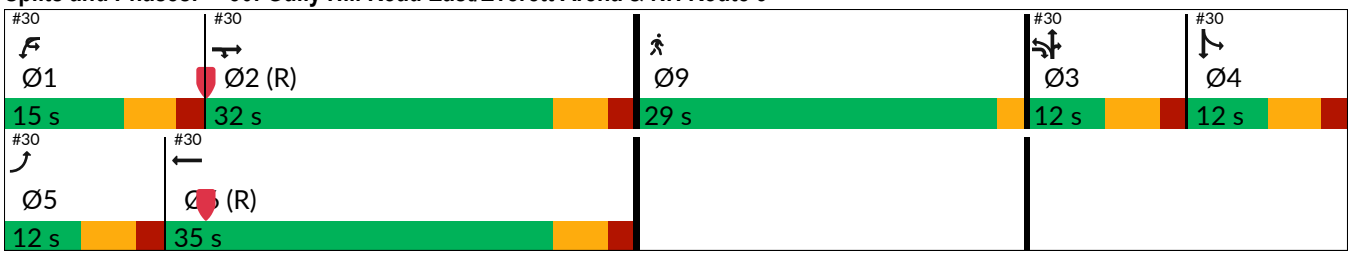
Intersection Summary
Cycle Length: 100

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	0	
Future Volume (vph)	0	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	0	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		29%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100
Offset: 50 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9



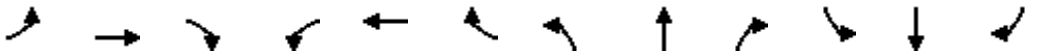
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Future Volume (vph)	3	1240	18	1	46	917	1	32	0	42	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00		0.97	0.95		0.95	0.95	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95	
Satd. Flow (prot)	1728	4964	1546		3351	3455		1618	1618	1524	1865	
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95	
Satd. Flow (perm)	1728	4964	1546		3351	3455		1618	1618	1524	1865	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.25	0.25
Adj. Flow (vph)	3	1378	20	1	51	1019	1	34	0	45	4	0
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	42	0	0
Lane Group Flow (vph)	3	1378	15	0	52	1020	0	17	17	3	4	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	6%	6%	6%	0%	0%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Actuated Green, G (s)	1.3	63.2	74.8		5.9	67.8		5.6	5.6	5.6	1.3	
Effective Green, g (s)	3.3	65.2	76.8		7.9	69.8		7.6	7.6	7.6	3.3	
Actuated g/C Ratio	0.03	0.65	0.77		0.08	0.70		0.08	0.08	0.08	0.03	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	57	3236	1187		264	2411		122	122	115	61	
v/s Ratio Prot	0.00	0.28	0.01		c0.02	c0.30		c0.01	0.01	0.00	c0.00	
v/s Ratio Perm												
v/c Ratio	0.05	0.43	0.01		0.20	0.42		0.14	0.14	0.03	0.07	
Uniform Delay, d1	46.8	8.4	2.7		43.1	6.5		43.1	43.1	42.8	46.9	
Progression Factor	1.15	0.46	1.00		1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.3	0.0		0.4	0.5		0.5	0.5	0.1	0.5	
Delay (s)	54.3	4.2	2.7		43.4	7.0		43.7	43.7	42.9	47.3	
Level of Service	D	A	A		D	A		D	D	D	D	
Approach Delay (s/veh)		4.2				8.8			43.2			47.3
Approach LOS		A				A			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.25
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

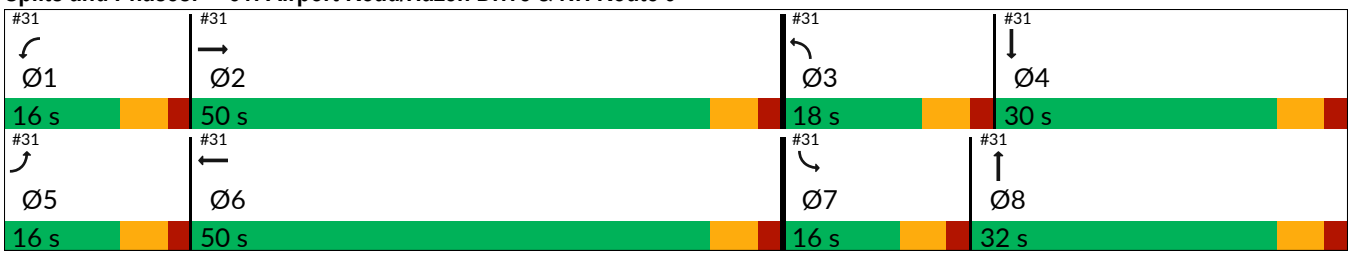


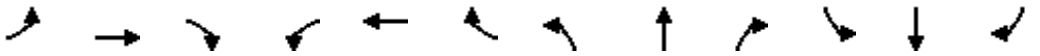
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Future Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Satd. Flow (RTOR)			263			201			201			201
Adj. Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
Lane Group Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	16.0	50.0		16.0	50.0		18.0	32.0		16.0	30.0	
Total Split (%)	14.0%	43.9%		14.0%	43.9%		15.8%	28.1%		14.0%	26.3%	
Maximum Green (s)	10.0	44.0		10.0	44.0		12.0	26.0		10.0	24.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.65	0.60	0.16	0.38	0.68	0.09	0.30	0.29	0.08	0.15	0.48	0.06
Control Delay (s/veh)	43.8	24.5	0.2	38.9	26.6	0.1	38.0	29.0	0.1	40.8	38.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.8	24.5	0.2	38.9	26.6	0.1	38.0	29.0	0.1	40.8	38.7	0.1
Queue Length 50th (ft)	85	168	0	43	189	0	32	57	0	13	73	0
Queue Length 95th (ft)	#187	265	0	93	294	0	72	153	0	45	155	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	507	1937	1599	507	1937	1652	560	614	1568	245	559	1501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.39	0.16	0.35	0.43	0.09	0.23	0.25	0.08	0.11	0.27	0.06

Intersection Summary
Cycle Length: 114

Actuated Cycle Length: 84.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9

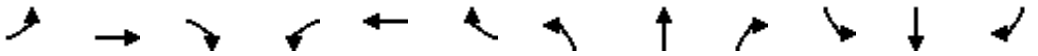




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Future Volume (vph)	298	681	237	164	768	141	117	139	114	24	134	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3286	1783	1568	1678	1766	1501
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	331	757	263	176	826	152	130	154	127	27	149	89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	10.3	28.8	87.6	9.1	27.6	87.6	8.9	22.8	87.6	2.9	16.8	87.6
Effective Green, g (s)	12.3	30.8	87.6	11.1	29.6	87.6	10.9	24.8	87.6	4.9	18.8	87.6
Actuated g/C Ratio	0.14	0.35	1.00	0.13	0.34	1.00	0.12	0.28	1.00	0.06	0.21	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	486	1214	1599	439	1167	1652	408	504	1568	93	379	1501
v/s Ratio Prot	c0.10	0.22		0.05	c0.24		c0.04	0.09		0.02	c0.08	
v/s Ratio Perm			c0.16			0.09			0.08			0.06
v/c Ratio	0.68	0.62	0.16	0.40	0.71	0.09	0.32	0.31	0.08	0.29	0.39	0.06
Uniform Delay, d1	35.8	23.6	0.0	35.2	25.2	0.0	35.0	24.6	0.0	39.7	29.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	1.0	0.2	0.6	2.0	0.1	0.5	0.3	0.1	1.7	0.7	0.1
Delay (s)	39.7	24.6	0.2	35.8	27.2	0.1	35.4	25.0	0.1	41.4	30.2	0.1
Level of Service	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay (s/veh)		23.5			25.0			20.6			21.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Future Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.994				0.850			0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3316	0	1652	3421	1531	1652	1739	1478	3236	1772	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3316	0	1652	3421	1531	1652	1739	1478	3236	1772	0
Satd. Flow (RTOR)		3				154			84		19	
Adj. Flow (vph)	57	624	26	12	709	232	104	122	13	223	231	146
Lane Group Flow (vph)	57	650	0	12	709	232	104	122	13	223	377	0
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6	6 4	8	8	8 1	4	4	
Permitted Phases												
Detector Phase	5	2		1	6	6 4	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	21.0	38.0		21.0	38.0		26.0	26.0		26.0	26.0	
Total Split (%)	14.7%	26.6%		14.7%	26.6%		18.2%	18.2%		18.2%	18.2%	
Maximum Green (s)	15.0	32.0		15.0	32.0		20.0	20.0		20.0	20.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.27	0.49		0.08	0.64	0.23	0.40	0.45	0.03	0.27	0.81	
Control Delay (s/veh)	43.2	22.4		43.6	29.9	4.1	41.9	42.6	0.1	31.5	49.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	43.2	22.4		43.6	29.9	4.1	41.9	42.6	0.1	31.5	49.0	
Queue Length 50th (ft)	32	124		7	187	18	57	68	0	56	208	
Queue Length 95th (ft)	75	236		26	280	58	115	131	0	101	#436	
Internal Link Dist (ft)		3396			4357			1198			1872	
Turn Bay Length (ft)	210			125		125	130		130	350		
Base Capacity (vph)	350	1476		324	1341	1008	419	441	638	820	463	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.44		0.04	0.53	0.23	0.25	0.28	0.02	0.27	0.81	

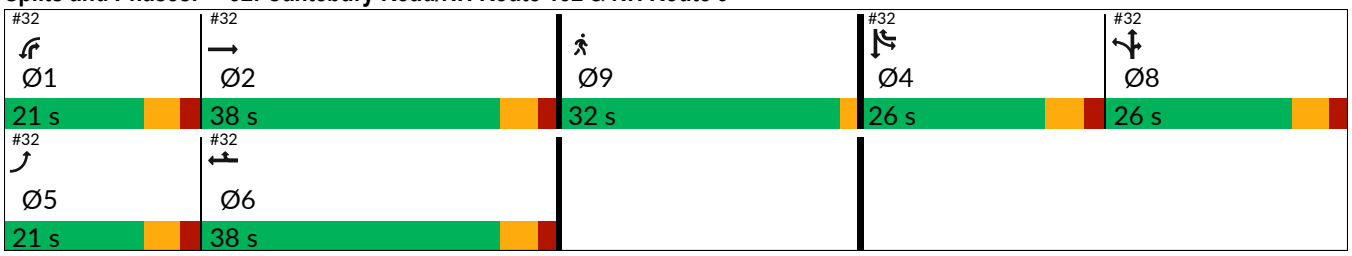
Intersection Summary
Cycle Length: 143

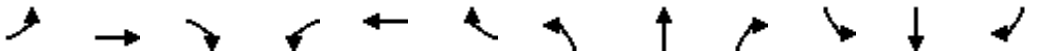
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	32.0
Total Split (s)	32.0
Total Split (%)	22%
Maximum Green (s)	30.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	25.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 89.5
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9

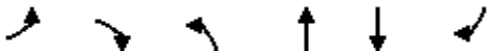




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Future Volume (vph)	51	562	23	11	652	213	94	110	12	201	208	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	10	11	11	10	10	10	10	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3316		1652	3421	1531	1652	1739	1478	3236	1772	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3316		1652	3421	1531	1652	1739	1478	3236	1772	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	624	26	12	709	232	104	122	13	223	231	146
RTOR Reduction (vph)	0	2	0	0	0	58	0	0	10	0	14	0
Lane Group Flow (vph)	57	648	0	12	709	174	104	122	3	223	363	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6	6 4	8	8	8 1	4	4	
Permitted Phases												
Actuated Green, G (s)	6.9	33.7		2.5	29.3	55.9	12.0	12.0	20.5	20.6	20.6	
Effective Green, g (s)	8.9	35.7		4.5	31.3	57.9	14.0	14.0	22.5	22.6	22.6	
Actuated g/C Ratio	0.10	0.38		0.05	0.34	0.62	0.15	0.15	0.24	0.24	0.24	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	171	1275		80	1153	955	249	262	358	788	431	
v/s Ratio Prot	c0.03	c0.20		0.01	c0.21	0.11	0.06	c0.07	0.00	0.07	c0.20	
v/s Ratio Perm												
v/c Ratio	0.33	0.51		0.15	0.61	0.18	0.42	0.47	0.01	0.28	0.84	
Uniform Delay, d1	39.2	21.8		42.3	25.7	7.4	35.7	36.0	26.7	28.5	33.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.3		0.9	1.0	0.1	1.1	1.3	0.0	0.2	13.8	
Delay (s)	40.3	22.2		43.2	26.7	7.5	36.8	37.3	26.7	28.7	47.2	
Level of Service	D	C		D	C	A	D	D	C	C	D	
Approach Delay (s/veh)		23.6			22.2			36.5			40.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

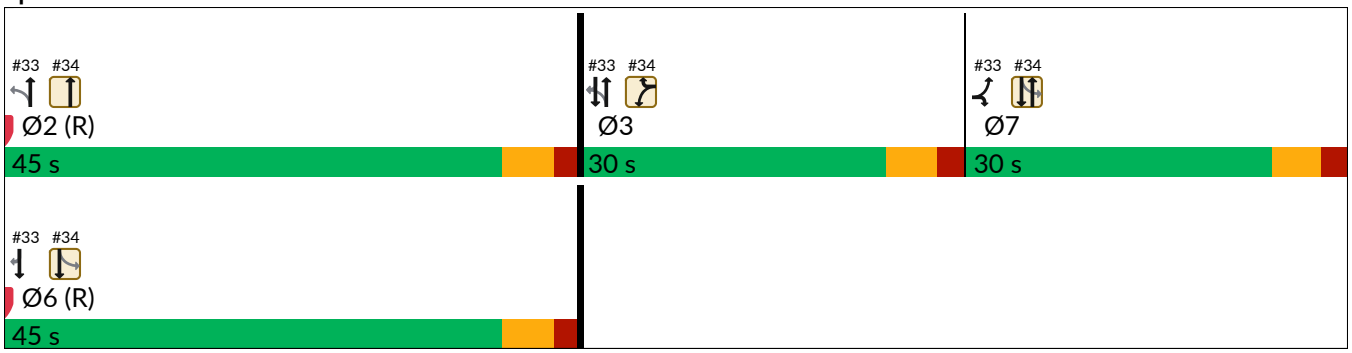


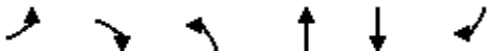
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	116	13	31	337	488	582			
Future Volume (vph)	116	13	31	337	488	582			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.996					
Satd. Flow (prot)	3335	1538	0	1776	1881	1546			
Flt Permitted	0.950			0.933					
Satd. Flow (perm)	3335	1538	0	1664	1881	1546			
Satd. Flow (RTOR)		14				647			
Adj. Flow (vph)	129	14	34	374	542	647			
Lane Group Flow (vph)	129	14	0	408	542	647			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					45.0	30.0	45.0
Total Split (%)	28.6%	28.6%					43%	29%	43%
Maximum Green (s)	24.0	24.0					39.0	24.0	39.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.15	0.03		0.37	0.43	0.52			
Control Delay (s/veh)	31.2	14.5		8.8	9.4	2.8			
Queue Delay	0.0	0.0		0.0	1.9	0.8			
Total Delay (s/veh)	31.2	14.5		8.8	11.2	3.6			
Queue Length 50th (ft)	36	0		108	182	45			
Queue Length 95th (ft)	62	17		160	243	43			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	864	409		1097	1239	1239			
Starvation Cap Reductn	0	0		0	516	300			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.15	0.03		0.37	0.75	0.69			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 33: NH Route 132 & Hazen Drive

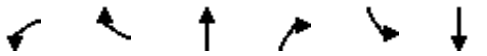




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	116	13	31	337	488	582
Future Volume (vph)	116	13	31	337	488	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3335	1538		1776	1881	1546
Flt Permitted	0.95	1.00		0.93	1.00	1.00
Satd. Flow (perm)	3335	1538		1663	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	14	34	374	542	647
RTOR Reduction (vph)	0	10	0	0	0	217
Lane Group Flow (vph)	129	4	0	408	542	430
Heavy Vehicles (%)	5%	5%	3%	3%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	25.2	25.2		67.8	67.8	67.8
Effective Green, g (s)	27.2	27.2		69.8	69.8	69.8
Actuated g/C Ratio	0.26	0.26		0.66	0.66	0.66
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	863	398		1105	1250	1027
v/s Ratio Prot	c0.04	0.00			c0.29	
v/s Ratio Perm				0.25		0.28
v/c Ratio	0.15	0.01		0.37	0.43	0.42
Uniform Delay, d1	30.0	28.9		7.8	8.3	8.2
Progression Factor	1.00	1.00		1.00	1.04	3.12
Incremental Delay, d2	0.1	0.0		0.2	0.2	0.2
Delay (s)	30.1	28.9		8.0	8.8	25.7
Level of Service	C	C		A	A	C
Approach Delay (s/veh)	30.0			8.0	18.0	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



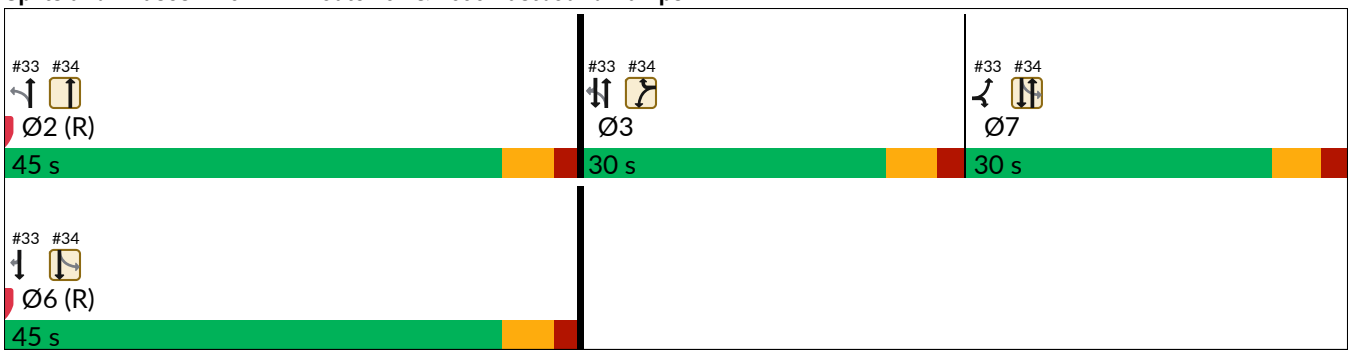
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	305	153	418	54	37	781			
Future Volume (vph)	305	153	418	54	37	781			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.983						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1770	1583	3267	0	1728	1818			
Flt Permitted	0.950				0.443				
Satd. Flow (perm)	1770	1583	3267	0	806	1818			
Satd. Flow (RTOR)		146	29						
Adj. Flow (vph)	339	170	464	60	41	868			
Lane Group Flow (vph)	339	170	524	0	41	868			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	30.0	30.0					45.0	45.0	30.0
Total Split (%)	28.6%	28.6%					43%	43%	29%
Maximum Green (s)	24.0	24.0					39.0	39.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.76	0.33	0.24		0.08	0.71			
Control Delay (s/veh)	48.8	9.6	4.8		6.3	14.9			
Queue Delay	0.0	0.0	0.2		0.0	0.0			
Total Delay (s/veh)	48.8	9.6	5.0		6.3	14.9			
Queue Length 50th (ft)	216	13	44		9	326			
Queue Length 95th (ft)	#349	67	59		21	474			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	447	509	2256		554	1250			
Starvation Cap Reductn	0	0	971		0	0			
Spillback Cap Reductn	0	0	0		0	5			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.76	0.33	0.41		0.07	0.70			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	305	153	418	54	37	781
Future Volume (vph)	305	153	418	54	37	781
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3266		1728	1818
Flt Permitted	0.95	1.00	1.00		0.44	1.00
Satd. Flow (perm)	1770	1583	3266		806	1818
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	339	170	464	60	41	868
RTOR Reduction (vph)	0	109	10	0	0	0
Lane Group Flow (vph)	339	61	514	0	41	868
Heavy Vehicles (%)	2%	2%	5%	5%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	24.6	24.6	68.4		68.4	68.4
Effective Green, g (s)	26.6	26.6	70.4		70.4	70.4
Actuated g/C Ratio	0.25	0.25	0.67		0.67	0.67
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	448	401	2189		540	1218
v/s Ratio Prot	c0.19	0.04	0.16			c0.48
v/s Ratio Perm					0.05	
v/c Ratio	0.76	0.15	0.24		0.08	0.71
Uniform Delay, d1	36.2	30.4	6.8		6.0	10.9
Progression Factor	1.00	1.00	0.71		1.00	1.00
Incremental Delay, d2	7.2	0.2	0.1		0.1	2.0
Delay (s)	43.4	30.6	4.9		6.1	12.9
Level of Service	D	C	A		A	B
Approach Delay (s/veh)	39.1		4.9			12.6
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

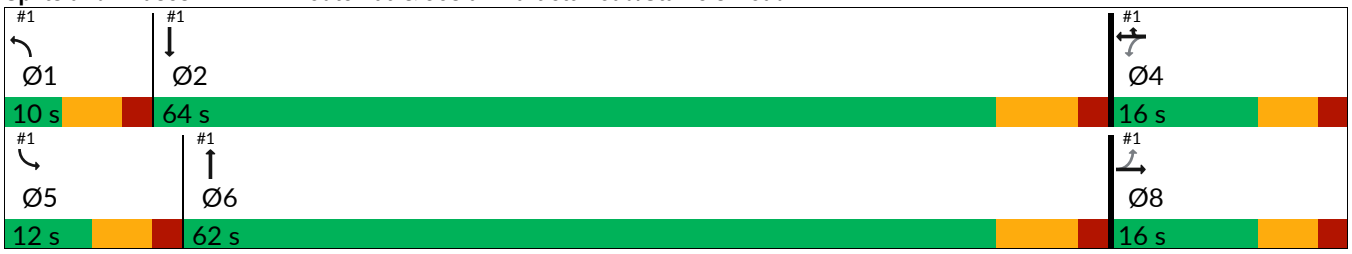
c Critical Lane Group

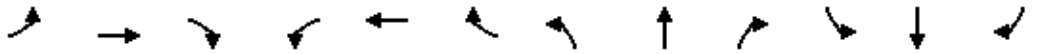
2037 Mitigated Build Weekday Evening Peak-Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	5	76	1	69	1	1292	144	34	709	7
Future Volume (vph)	0	2	5	76	1	69	1	1292	144	34	709	7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.899				0.850		0.985			0.998	
Flt Protected					0.953		0.950			0.950		
Satd. Flow (prot)	0	1642	0	0	1811	1583	1787	3521	0	1770	3532	0
Flt Permitted					0.723		0.950			0.950		
Satd. Flow (perm)	0	1642	0	0	1374	1583	1787	3521	0	1770	3532	0
Satd. Flow (RTOR)		6				127		25			2	
Adj. Flow (vph)	0	2	6	84	1	77	1	1374	153	37	762	8
Lane Group Flow (vph)	0	8	0	0	85	77	1	1527	0	37	770	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	16.0	16.0		16.0	16.0	16.0	10.0	62.0		12.0	64.0	
Total Split (%)	17.8%	17.8%		17.8%	17.8%	17.8%	11.1%	68.9%		13.3%	71.1%	
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	4.0	54.5		6.0	56.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.03			0.40	0.22	0.01	0.61		0.24	0.29	
Control Delay (s/veh)		23.3			40.2	3.4	41.0	10.2		42.5	4.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.3			40.2	3.4	41.0	10.2		42.5	4.5	
Queue Length 50th (ft)		1			41	0	1	268		19	56	
Queue Length 95th (ft)		14			92	12	6	343		52	123	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		303			250	392	108	2745		161	2921	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.03			0.34	0.20	0.01	0.56		0.23	0.26	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 72.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

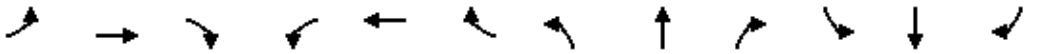
Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	5	76	1	69	1	1292	144	34	709	7
Future Volume (vph)	0	2	5	76	1	69	1	1292	144	34	709	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.90			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1642			1811	1583	1787	3521		1770	3534	
Flt Permitted		1.00			0.72	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1374	1583	1787	3521		1770	3534	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.93	0.93	0.93
Adj. Flow (vph)	0	2	6	84	1	77	1	1374	153	37	762	8
RTOR Reduction (vph)	0	5	0	0	0	68	0	9	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	85	9	1	1518	0	37	769	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	2%	1%	1%	1%	2%	2%	2%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		6.9			6.9	6.9	0.6	48.9		3.0	51.3	
Effective Green, g (s)		8.9			8.9	8.9	0.6	50.9		3.0	53.3	
Actuated g/C Ratio		0.11			0.11	0.11	0.01	0.65		0.04	0.68	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		186			156	179	13	2288		67	2405	
v/s Ratio Prot		0.00				0.01	0.00	c0.43		c0.02	0.22	
v/s Ratio Perm					c0.06							
v/c Ratio		0.01			0.54	0.05	0.08	0.66		0.55	0.32	
Uniform Delay, d1		30.8			32.8	30.9	38.6	8.4		37.0	5.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			3.9	0.1	2.5	0.7		9.5	0.1	
Delay (s)		30.8			36.6	31.0	41.1	9.2		46.5	5.2	
Level of Service		C			D	C	D	A		D	A	
Approach Delay (s/veh)		30.8			34.0			9.2			7.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	15.5
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

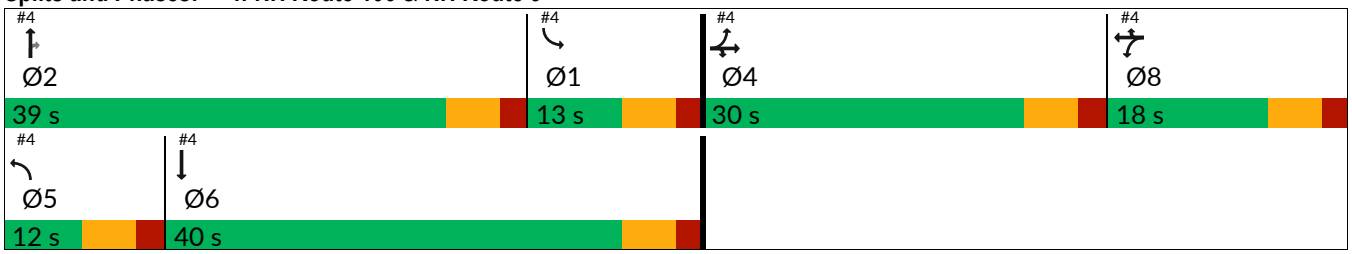


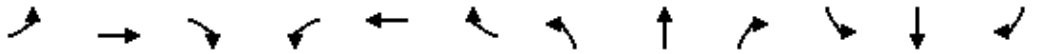
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Future Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			229			229			420			669
Adj. Flow (vph)	787	403	64	356	317	54	64	1013	602	108	859	764
Lane Group Flow (vph)	787	403	64	356	317	54	64	1013	602	108	859	764
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	30.0	30.0	30.0	18.0	18.0	18.0	12.0	39.0	39.0	13.0	40.0	
Total Split (%)	30.0%	30.0%	30.0%	18.0%	18.0%	18.0%	12.0%	39.0%	39.0%	13.0%	40.0%	
Maximum Green (s)	24.0	24.0	24.0	12.0	12.0	12.0	6.0	33.0	33.0	7.0	34.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.90	0.85	0.11	0.77	0.66	0.13	0.47	0.84	0.74	0.70	0.65	0.42
Control Delay (s/veh)	50.9	53.8	0.4	53.6	48.2	0.7	55.8	37.5	14.6	68.2	28.8	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (s/veh)	50.9	53.8	0.4	53.6	48.2	0.7	55.8	37.5	14.6	68.2	29.0	0.7
Queue Length 50th (ft)	252	246	0	115	103	0	40	311	94	69	244	0
Queue Length 95th (ft)	#361	#410	0	#178	151	0	84	396	242	#151	314	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	872	472	571	464	478	411	138	1210	814	155	1325	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	50	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.85	0.11	0.77	0.66	0.13	0.46	0.84	0.74	0.70	0.67	0.42

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 99.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Future Volume (vph)	716	367	58	320	285	49	58	922	548	98	782	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	3319	3421	1531	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	787	403	64	356	317	54	64	1013	602	108	859	764
RTOR Reduction (vph)	0	0	48	0	0	47	0	0	275	0	0	0
Lane Group Flow (vph)	787	403	16	356	317	7	64	1013	327	108	859	764
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	24.0	24.0	24.0	12.0	12.0	12.0	4.8	32.9	32.9	8.2	36.3	101.1
Effective Green, g (s)	26.0	26.0	26.0	14.0	14.0	14.0	6.8	34.9	34.9	10.2	38.3	101.1
Actuated g/C Ratio	0.26	0.26	0.26	0.14	0.14	0.14	0.07	0.35	0.35	0.10	0.38	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	861	467	397	459	473	212	116	1192	533	174	1308	1812
v/s Ratio Prot	c0.23	0.22	0.01	c0.11	0.09	0.00	0.04	c0.29		0.06	c0.25	
v/s Ratio Perm									0.21			0.42
v/c Ratio	0.91	0.86	0.04	0.78	0.67	0.04	0.55	0.85	0.61	0.62	0.66	0.42
Uniform Delay, d1	36.5	35.8	28.2	42.0	41.4	37.7	45.7	30.7	27.5	43.6	26.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	15.1	0.0	8.0	3.7	0.1	5.6	5.9	2.1	6.7	1.2	0.7
Delay (s)	50.4	51.0	28.2	50.0	45.1	37.8	51.2	36.5	29.6	50.3	27.2	0.7
Level of Service	D	D	C	D	D	D	D	D	C	D	C	A
Approach Delay (s/veh)		49.5			47.0			34.6			16.9	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	101.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

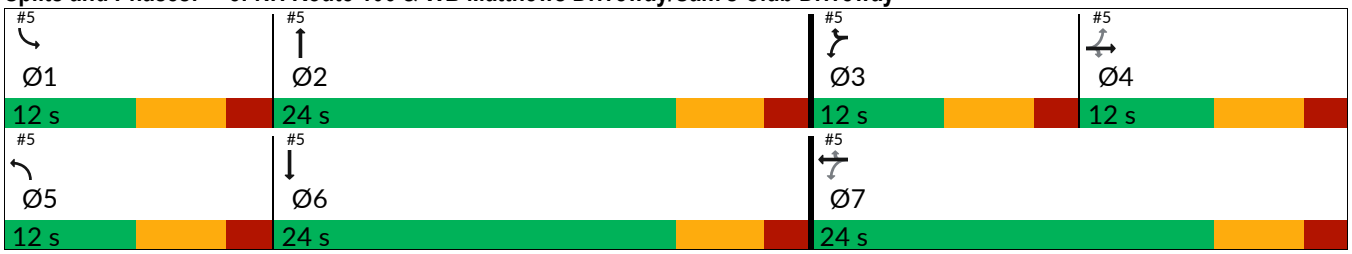
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	15	73	1	159	11	1017	20	98	942	5
Future Volume (vph)	4	1	15	73	1	159	11	1017	20	98	942	5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.997			0.999	
Flt Protected		0.961			0.953		0.950			0.950		
Satd. Flow (prot)	0	1826	1615	0	1811	1669	1728	3445	0	1752	3501	0
Flt Permitted		0.707			0.432		0.950			0.950		
Satd. Flow (perm)	0	1343	1615	0	821	1669	1728	3445	0	1752	3501	0
Satd. Flow (RTOR)			273			187		3			1	
Adj. Flow (vph)	13	3	47	86	1	187	12	1130	22	100	961	5
Lane Group Flow (vph)	0	16	47	0	87	187	12	1152	0	100	966	0
Turn Type	Perm	NA	Perm	pm+pt	NA	custom	Prot	NA		Prot	NA	
Protected Phases		4		3	7	3	5	2		1	6	
Permitted Phases	4		4	7		7						
Detector Phase	4	4	4	3	7	3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	10.0		6.0	10.0	
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	16.0		12.0	16.0	
Total Split (s)	12.0	12.0	12.0	12.0	24.0	12.0	12.0	24.0		12.0	24.0	
Total Split (%)	20.0%	20.0%	20.0%	20.0%	40.0%	20.0%	20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	6.0	6.0	6.0	6.0	18.0	6.0	6.0	18.0		6.0	18.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		0.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		6.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	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	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min		None	Min	
v/c Ratio		0.08	0.10		0.29	0.31	0.05	0.70		0.37	0.46	
Control Delay (s/veh)		24.0	0.4		18.7	4.4	23.3	22.0		28.1	11.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.0	0.4		18.7	4.4	23.3	22.0		28.1	11.8	
Queue Length 50th (ft)		5	0		23	0	4	~216		35	110	
Queue Length 95th (ft)		7	0		48	31	17	#354		76	#270	
Internal Link Dist (ft)		210			308			1555			2106	
Turn Bay Length (ft)			50			125	400			600		
Base Capacity (vph)		205	477		375	607	263	1651		267	2121	
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		0.08	0.10		0.23	0.31	0.05	0.70		0.37	0.46	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 54
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

~ 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: 5: NH Route 106 & WB Matthews Driveway/Sam's Club Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	15	73	1	159	11	1017	20	98	942	5
Future Volume (vph)	4	1	15	73	1	159	11	1017	20	98	942	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	13	11	11	11	12	12	12
Total Lost time (s)		4.0	4.0		6.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.96	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1826	1615		1811	1669	1728	3445		1752	3502	
Flt Permitted		0.71	1.00		0.43	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1344	1615		821	1669	1728	3445		1752	3502	
Peak-hour factor, PHF	0.32	0.32	0.32	0.85	0.85	0.85	0.90	0.90	0.90	0.98	0.98	0.98
Adj. Flow (vph)	12	3	47	86	1	187	12	1130	22	100	961	5
RTOR Reduction (vph)	0	0	43	0	0	139	0	2	0	0	0	0
Lane Group Flow (vph)	0	16	4	0	87	48	12	1150	0	100	966	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	pm+pt	NA	custom	Prot	NA		Prot	NA	
Protected Phases		4		3	7	3	5	2		1	6	
Permitted Phases	4		4	7		7						
Actuated Green, G (s)		3.2	3.2		14.3	14.3	1.1	26.1		4.5	29.5	
Effective Green, g (s)		5.2	5.2		14.3	16.3	3.1	28.1		6.5	31.5	
Actuated g/C Ratio		0.08	0.08		0.23	0.26	0.05	0.45		0.10	0.50	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		111	133		266	432	85	1539		181	1753	
v/s Ratio Prot					c0.03	0.01	0.01	c0.33		c0.06	c0.28	
v/s Ratio Perm		0.01	0.00		c0.05	0.02						
v/c Ratio		0.14	0.03		0.33	0.11	0.14	0.75		0.55	0.55	
Uniform Delay, d1		26.8	26.5		20.3	17.8	28.6	14.5		26.8	10.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6	0.1		0.7	0.1	0.8	2.0		3.6	0.4	
Delay (s)		27.4	26.6		21.0	17.9	29.4	16.5		30.4	11.2	
Level of Service		C	C		C	B	C	B		C	B	
Approach Delay (s/veh)		26.8			18.9			16.6			13.0	
Approach LOS		C			B			B			B	

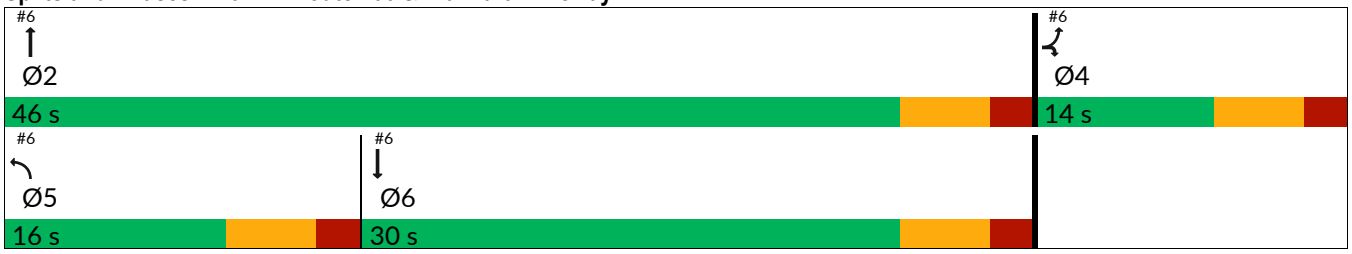
Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	144	148	1296	895	135
Future Volume (vph)	37	144	148	1296	895	135
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.980	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1847	1599	1668	3574	3435	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1847	1599	1668	3574	3435	0
Satd. Flow (RTOR)		150			35	
Adj. Flow (vph)	39	150	164	1440	942	142
Lane Group Flow (vph)	39	150	164	1440	1084	0
Turn Type	Prot	Prot	Prot	NA	NA	
Protected Phases	4	4	5	2	6	
Permitted Phases						
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	
Minimum Split (s)	12.0	12.0	12.0	16.0	16.0	
Total Split (s)	14.0	14.0	16.0	46.0	30.0	
Total Split (%)	23.3%	23.3%	26.7%	76.7%	50.0%	
Maximum Green (s)	8.0	8.0	10.0	40.0	24.0	
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)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
v/c Ratio	0.13	0.38	0.47	0.53	0.57	
Control Delay (s/veh)	22.6	8.1	26.1	4.6	13.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	22.6	8.1	26.1	4.6	13.2	
Queue Length 50th (ft)	12	0	52	94	151	
Queue Length 95th (ft)	35	42	105	148	226	
Internal Link Dist (ft)	488			959	1555	
Turn Bay Length (ft)		100	400			
Base Capacity (vph)	357	430	386	2771	1926	
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	0.11	0.35	0.42	0.52	0.56	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 53.8
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: NH Route 106 & Walmart Driveway



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	144	148	1296	895	135
Future Volume (vph)	37	144	148	1296	895	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1847	1599	1668	3574	3436	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1847	1599	1668	3574	3436	
Peak-hour factor, PHF	0.96	0.96	0.90	0.90	0.95	0.95
Adj. Flow (vph)	39	150	164	1440	942	142
RTOR Reduction (vph)	0	131	0	0	17	0
Lane Group Flow (vph)	39	19	164	1440	1067	0
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Turn Type	Prot	Prot	Prot	NA	NA	
Protected Phases	4	4	5	2	6	
Permitted Phases						
Actuated Green, G (s)	5.1	5.1	7.2	39.6	26.4	
Effective Green, g (s)	7.1	7.1	9.2	41.6	28.4	
Actuated g/C Ratio	0.13	0.13	0.16	0.73	0.50	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	231	200	270	2622	1721	
v/s Ratio Prot	c0.02	0.01	0.10	c0.40	c0.31	
v/s Ratio Perm						
v/c Ratio	0.17	0.09	0.61	0.55	0.62	
Uniform Delay, d1	22.2	22.0	22.1	3.4	10.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.2	3.8	0.2	0.7	
Delay (s)	22.5	22.2	25.9	3.6	10.9	
Level of Service	C	C	C	A	B	
Approach Delay (s/veh)	22.2			5.9	10.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

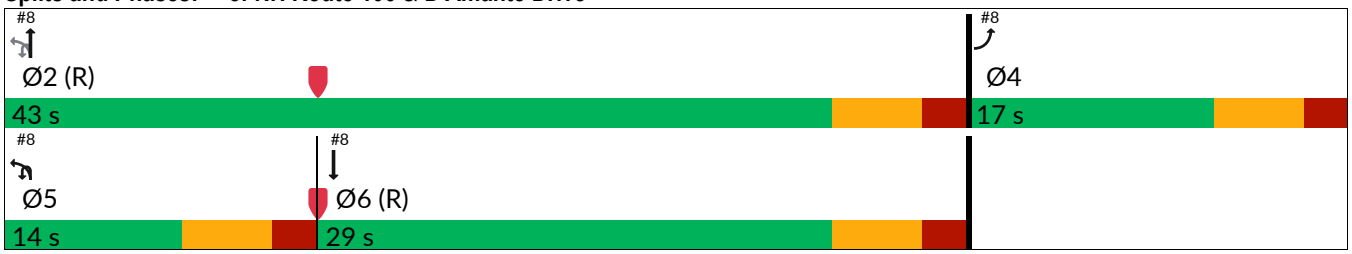
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	414	140	1	208	1010	700	312
Future Volume (vph)	414	140	1	208	1010	700	312
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	0.95
Frt	0.962					0.954	
Flt Protected	0.964			0.950			
Satd. Flow (prot)	3304	0	0	1711	3539	3232	0
Flt Permitted	0.964			0.135			
Satd. Flow (perm)	3304	0	0	243	3539	3232	0
Satd. Flow (RTOR)	73					145	
Adj. Flow (vph)	418	141	1	231	1122	761	339
Lane Group Flow (vph)	559	0	0	232	1122	1100	0
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Detector Phase	4		5	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	11.0	
Total Split (s)	17.0		14.0	14.0	43.0	29.0	
Total Split (%)	28.3%		23.3%	23.3%	71.7%	48.3%	
Maximum Green (s)	11.0		8.0	8.0	37.0	23.0	
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)	-2.0			-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0	
Lead/Lag			Lead	Lead		Lag	
Lead-Lag Optimize?			Yes	Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	Min		None	None	C-Min	C-Min	
v/c Ratio	0.73			0.59	0.49	0.75	
Control Delay (s/veh)	25.7			14.1	6.2	27.5	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay (s/veh)	25.7			14.1	6.2	27.5	
Queue Length 50th (ft)	84			28	91	221	
Queue Length 95th (ft)	#132			89	128	285	
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			
Base Capacity (vph)	773			403	2312	1460	
Starvation Cap Reductn	0			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.72			0.58	0.49	0.75	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	414	140	1	208	1010	700	312
Future Volume (vph)	414	140	1	208	1010	700	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0			4.0	4.0	4.0	
Lane Util. Factor	0.97			1.00	0.95	0.95	
Frt	0.96			1.00	1.00	0.95	
Flt Protected	0.96			0.95	1.00	1.00	
Satd. Flow (prot)	3305			1711	3539	3231	
Flt Permitted	0.96			0.14	1.00	1.00	
Satd. Flow (perm)	3305			243	3539	3231	
Peak-hour factor, PHF	0.99	0.99	0.90	0.90	0.90	0.92	0.92
Adj. Flow (vph)	418	141	1	231	1122	761	339
RTOR Reduction (vph)	57	0	0	0	0	83	0
Lane Group Flow (vph)	502	0	0	232	1122	1017	0
Heavy Vehicles (%)	0%	0%	2%	2%	2%	3%	3%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Actuated Green, G (s)	10.8			37.2	37.2	23.6	
Effective Green, g (s)	12.8			39.2	39.2	25.6	
Actuated g/C Ratio	0.21			0.65	0.65	0.43	
Clearance Time (s)	6.0			6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	3.0	
Lane Grp Cap (vph)	705			393	2312	1378	
v/s Ratio Prot	c0.15			c0.09	0.32	c0.31	
v/s Ratio Perm				0.29			
v/c Ratio	0.71			0.59	0.49	0.74	
Uniform Delay, d1	21.9			8.0	5.3	14.4	
Progression Factor	1.00			1.00	1.00	1.86	
Incremental Delay, d2	3.4			2.4	0.7	3.2	
Delay (s)	25.3			10.4	6.0	29.9	
Level of Service	C			B	A	C	
Approach Delay (s/veh)	25.3				6.8	29.9	
Approach LOS	C				A	C	

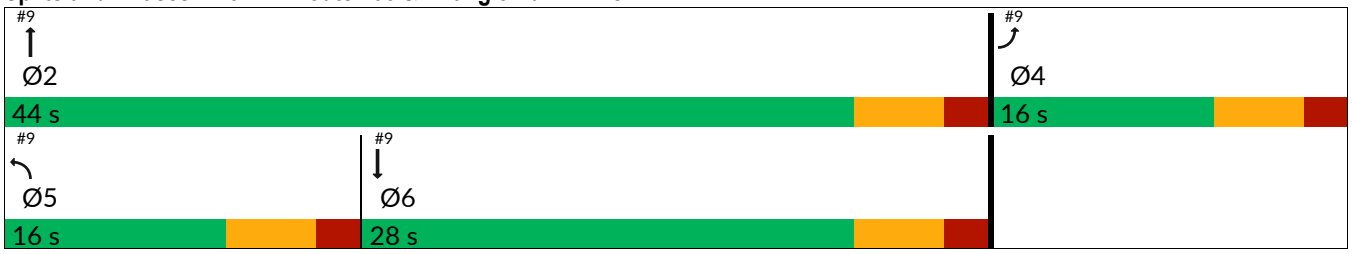
Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	17	205	195	1200	904	37
Future Volume (vph)	17	205	195	1200	904	37
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.875				0.994	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1858	0	1906	3574	3553	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1858	0	1906	3574	3553	0
Satd. Flow (RTOR)	228				8	
Adj. Flow (vph)	19	228	214	1319	983	40
Lane Group Flow (vph)	247	0	214	1319	1023	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	16.0		16.0	44.0	28.0	
Total Split (%)	26.7%		26.7%	73.3%	46.7%	
Maximum Green (s)	10.0		10.0	38.0	22.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.49		0.55	0.54	0.71	
Control Delay (s/veh)	8.3		26.4	5.4	17.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	8.3		26.4	5.4	17.0	
Queue Length 50th (ft)	6		64	77	136	
Queue Length 95th (ft)	57		130	150	221	
Internal Link Dist (ft)	1073			1451	1013	
Turn Bay Length (ft)			150			
Base Capacity (vph)	585		418	2614	1563	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.42		0.51	0.50	0.65	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 55.1
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

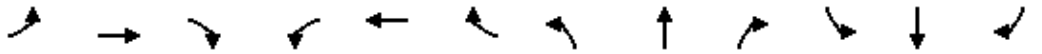
Splits and Phases: 9: NH Route 106 & Triangle Park Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	17	205	195	1200	904	37
Future Volume (vph)	17	205	195	1200	904	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.88		1.00	1.00	0.99	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1859		1906	3574	3553	
Flt Permitted	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	1859		1906	3574	3553	
Peak-hour factor, PHF	0.90	0.90	0.91	0.91	0.92	0.92
Adj. Flow (vph)	19	228	214	1319	983	40
RTOR Reduction (vph)	190	0	0	0	5	0
Lane Group Flow (vph)	57	0	214	1319	1018	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	7.2		9.3	35.8	20.5	
Effective Green, g (s)	9.2		11.3	37.8	22.5	
Actuated g/C Ratio	0.17		0.21	0.69	0.41	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	310		391	2456	1453	
v/s Ratio Prot	c0.03		0.11	c0.37	c0.29	
v/s Ratio Perm						
v/c Ratio	0.18		0.55	0.54	0.70	
Uniform Delay, d1	19.7		19.6	4.3	13.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.3		1.6	0.2	1.5	
Delay (s)	20.0		21.1	4.5	15.0	
Level of Service	B		C	A	B	
Approach Delay (s/veh)	20.0			6.8	15.0	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

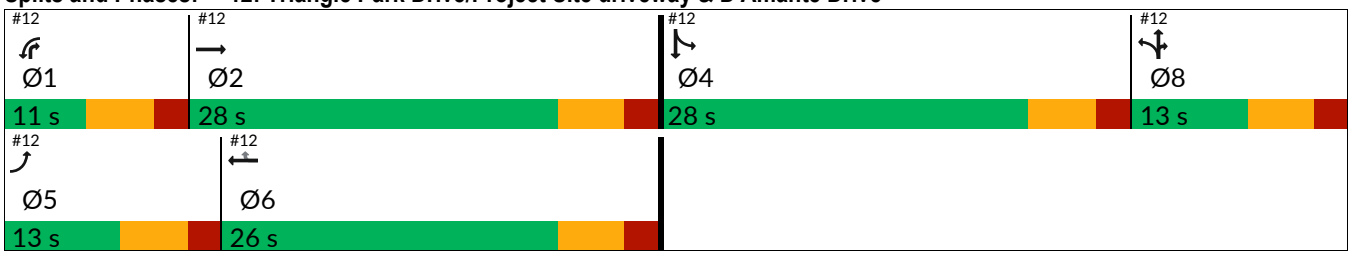


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Future Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.956				0.850			0.850		0.885	
Flt Protected	0.950			0.950				0.959		0.950	0.994	
Satd. Flow (prot)	1787	3303	0	1728	1881	1599	0	1804	1599	1681	1557	0
Flt Permitted	0.950			0.950				0.959		0.950	0.994	
Satd. Flow (perm)	1787	3303	0	1728	1881	1599	0	1804	1599	1681	1557	0
Satd. Flow (RTOR)		83				205			123		130	
Adj. Flow (vph)	139	340	143	60	372	121	121	19	76	199	19	130
Lane Group Flow (vph)	139	483	0	60	372	121	0	140	76	179	169	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0	11.0	11.0	11.0		28.0	28.0	
Total Split (s)	13.0	28.0		11.0	26.0	26.0	13.0	13.0		28.0	28.0	
Total Split (%)	16.3%	35.0%		13.8%	32.5%	32.5%	16.3%	16.3%		35.0%	35.0%	
Maximum Green (s)	7.0	22.0		5.0	20.0	20.0	7.0	7.0		22.0	22.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.58	0.40		0.34	0.70	0.20		0.58	0.14	0.50	0.39	
Control Delay (s/veh)	42.0	16.3		36.8	30.7	1.2		41.9	2.2	29.0	10.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	42.0	16.3		36.8	30.7	1.2		41.9	2.2	29.0	10.3	
Queue Length 50th (ft)	59	68		25	139	0		59	0	73	14	
Queue Length 95th (ft)	#144	122		64	255	5		#145	13	133	63	
Internal Link Dist (ft)		981			380			958			344	
Turn Bay Length (ft)	250			250		100			170	250		
Base Capacity (vph)	238	1255		179	612	658		240	559	596	636	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.58	0.38		0.34	0.61	0.18		0.58	0.14	0.30	0.27	

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 68.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Future Volume (vph)	125	306	129	54	335	109	109	17	68	179	17	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	0.96		1.00	1.00	0.85		1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (prot)	1787	3302		1728	1881	1599		1803	1599	1681	1556	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (perm)	1787	3302		1728	1881	1599		1803	1599	1681	1556	
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)	139	340	143	60	372	121	121	19	76	199	19	130
RTOR Reduction (vph)	0	54	0	0	0	85	0	0	55	0	103	0
Lane Group Flow (vph)	139	429	0	60	372	36	0	140	21	179	66	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Actuated Green, G (s)	7.1	21.9		3.9	18.7	18.7		7.1	17.0	12.7	12.7	
Effective Green, g (s)	9.1	23.9		5.9	20.7	20.7		9.1	19.0	14.7	14.7	
Actuated g/C Ratio	0.13	0.34		0.08	0.30	0.30		0.13	0.27	0.21	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	233	1133		146	559	475		235	436	355	328	
v/s Ratio Prot	c0.08	c0.13		0.03	c0.20			c0.08	0.01	c0.11	0.04	
v/s Ratio Perm						0.02						
v/c Ratio	0.60	0.38		0.41	0.67	0.08		0.60	0.05	0.50	0.20	
Uniform Delay, d1	28.5	17.2		30.2	21.4	17.6		28.5	18.6	24.2	22.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.1	0.2		1.9	3.0	0.1		4.0	0.0	1.1	0.3	
Delay (s)	32.6	17.5		32.1	24.4	17.6		32.5	18.7	25.4	22.9	
Level of Service	C	B		C	C	B		C	B	C	C	
Approach Delay (s/veh)		20.8			23.8			27.7			24.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

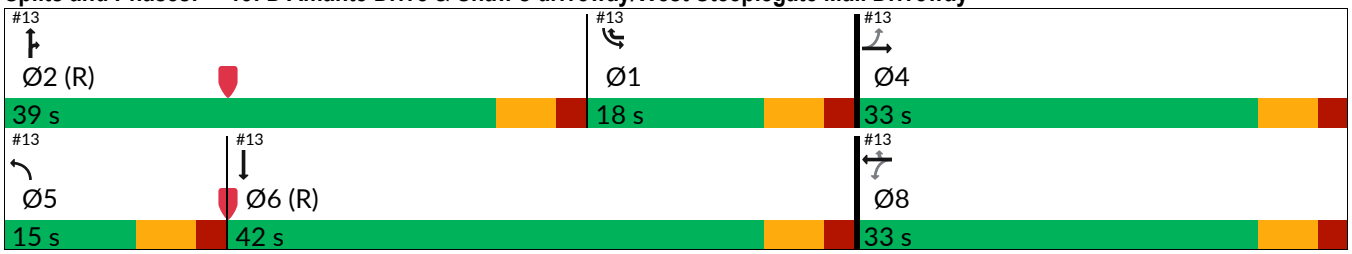
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Future Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.954				0.850			0.850		0.986	
Flt Protected		0.966			0.950		0.950			0.950		
Satd. Flow (prot)	0	3327	0	0	1829	1636	1787	3455	1546	3351	3407	0
Flt Permitted		0.681			0.660		0.950			0.950		
Satd. Flow (perm)	0	2345	0	0	1270	1636	1787	3455	1546	3351	3407	0
Satd. Flow (RTOR)		182				123			109		15	
Adj. Flow (vph)	101	0	44	140	0	123	46	528	88	156	527	53
Lane Group Flow (vph)	0	145	0	0	140	123	46	528	88	156	580	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	33.0	33.0		33.0	33.0	18.0	15.0	39.0	39.0	18.0	42.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%	20.0%	16.7%	43.3%	43.3%	20.0%	46.7%	
Maximum Green (s)	27.0	27.0		27.0	27.0	12.0	9.0	33.0	33.0	12.0	36.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.24			0.58	0.18	0.24	0.28	0.10	0.36	0.27	
Control Delay (s/veh)		3.8			41.6	3.6	39.0	12.6	2.3	31.6	7.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		3.8			41.6	3.6	39.0	12.6	2.3	31.6	7.7	
Queue Length 50th (ft)		0			74	0	25	79	0	38	61	
Queue Length 95th (ft)		m12			124	29	56	139	19	64	102	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		878			409	660	224	1886	893	522	2117	
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		0.17			0.34	0.19	0.21	0.28	0.10	0.30	0.27	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 87 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

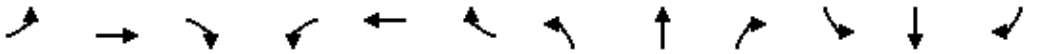
Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Future Volume (vph)	94	0	41	126	0	111	43	496	83	140	474	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3330			1829	1636	1787	3455	1546	3351	3408	
Flt Permitted		0.68			0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2347			1270	1636	1787	3455	1546	3351	3408	
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	101	0	44	140	0	123	46	528	88	156	527	53
RTOR Reduction (vph)	0	117	0	0	0	80	0	0	42	0	6	0
Lane Group Flow (vph)	0	28	0	0	140	43	46	528	46	156	574	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Prot	Prot	NA	
Protected Phases		4			8	1	5	2	2	1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		15.2			15.2	27.3	5.4	44.7	44.7	12.1	51.4	
Effective Green, g (s)		17.2			17.2	31.3	7.4	46.7	46.7	14.1	53.4	
Actuated g/C Ratio		0.19			0.19	0.35	0.08	0.52	0.52	0.16	0.59	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		448			242	641	146	1792	802	524	2022	
v/s Ratio Prot						0.01	0.03	c0.15	0.03	0.05	c0.17	
v/s Ratio Perm		0.01			c0.11	0.02						
v/c Ratio		0.06			0.58	0.07	0.32	0.29	0.06	0.30	0.28	
Uniform Delay, d1		29.8			33.1	19.6	38.9	12.3	10.7	33.6	8.9	
Progression Factor		1.28			1.00	1.00	1.00	1.00	1.00	0.83	0.74	
Incremental Delay, d2		0.1			3.3	0.0	1.2	0.4	0.1	0.3	0.3	
Delay (s)		38.2			36.4	19.6	40.2	12.7	10.9	28.2	6.9	
Level of Service		D			D	B	D	B	B	C	A	
Approach Delay (s/veh)		38.2			28.6			14.4			11.4	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

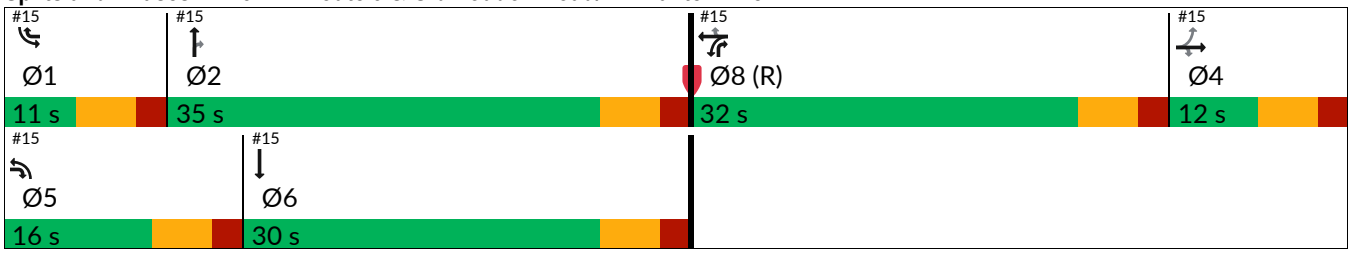


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Future Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.987		0.950	0.965		0.950			0.950		
Satd. Flow (prot)	0	1813	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Flt Permitted		0.795		0.950	0.965		0.950			0.950		
Satd. Flow (perm)	0	1460	1561	1641	1725	1492	1787	3455	1599	3467	3445	0
Satd. Flow (RTOR)			109			147			385		2	
Adj. Flow (vph)	16	43	98	542	90	147	121	719	563	119	724	16
Lane Group Flow (vph)	0	59	98	314	318	147	121	719	563	119	740	0
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	12.0	12.0	16.0	32.0	32.0	11.0	16.0	35.0	32.0	11.0	30.0	
Total Split (%)	13.3%	13.3%	17.8%	35.6%	35.6%	12.2%	17.8%	38.9%	35.6%	12.2%	33.3%	
Maximum Green (s)	6.0	6.0	10.0	26.0	26.0	5.0	10.0	29.0	26.0	5.0	24.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Min	C-Min	None	None	None	C-Min	None	None	
v/c Ratio		0.45	0.22	0.54	0.52	0.20	0.54	0.65	0.45	0.41	0.77	
Control Delay (s/veh)		50.2	5.8	32.3	31.6	3.3	46.2	29.2	2.9	50.3	29.8	
Queue Delay		0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		50.2	5.8	32.4	31.8	3.3	46.2	29.2	2.9	50.3	29.8	
Queue Length 50th (ft)		32	0	101	102	0	65	177	30	27	211	
Queue Length 95th (ft)		72	32	287	290	67	121	236	64	67	123	
Internal Link Dist (ft)		534			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		134	462	581	611	748	238	1190	1255	293	996	
Starvation Cap Reductn		0	0	18	34	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.44	0.21	0.56	0.55	0.20	0.51	0.60	0.45	0.41	0.74	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 35 (39%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 15: NH Route 9 & Old Loudon Road/D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Future Volume (vph)	14	39	88	488	81	132	109	647	507	111	673	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1812	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Flt Permitted		0.80	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1461	1561	1641	1725	1492	1787	3455	1599	3467	3444	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	16	43	98	542	90	147	121	719	563	119	724	16
RTOR Reduction (vph)	0	0	78	0	0	85	0	0	131	0	1	0
Lane Group Flow (vph)	0	59	20	314	318	62	121	719	432	119	739	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases		4	5	8	8	1	5	2	8	1	6	
Permitted Phases	4		4			8			2			
Actuated Green, G (s)		5.1	14.4	28.6	28.6	34.2	9.3	26.7	55.3	5.6	23.0	
Effective Green, g (s)		7.1	18.4	30.6	30.6	38.2	11.3	28.7	59.3	7.6	25.0	
Actuated g/C Ratio		0.08	0.20	0.34	0.34	0.42	0.13	0.32	0.66	0.08	0.28	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		115	388	557	586	633	224	1101	1124	292	956	
v/s Ratio Prot			0.01	c0.19	0.18	0.01	c0.07	c0.21	0.13	0.03	c0.21	
v/s Ratio Perm		c0.04	0.01			0.03			0.14			
v/c Ratio		0.51	0.05	0.56	0.54	0.10	0.54	0.65	0.38	0.41	0.77	
Uniform Delay, d1		39.8	28.8	24.2	24.0	15.6	36.9	26.4	7.0	39.1	29.9	
Progression Factor		1.00	1.00	1.11	1.11	1.37	1.00	1.00	1.00	1.17	0.80	
Incremental Delay, d2		3.8	0.1	4.0	3.5	0.1	2.6	1.4	0.2	0.9	3.8	
Delay (s)		43.6	28.8	31.0	30.3	21.4	39.6	27.8	7.2	46.5	27.8	
Level of Service		D	C	C	C	C	D	C	A	D	C	
Approach Delay (s/veh)		34.4			28.9			20.5			30.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Future Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.977			0.986	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3376	0	3467	3407	0
Flt Permitted		0.585			0.686		0.950			0.950		
Satd. Flow (perm)	0	1112	1615	0	1320	1636	1847	3376	0	3467	3407	0
Satd. Flow (RTOR)			84			136		27			17	
Adj. Flow (vph)	97	0	84	137	0	291	80	649	116	297	673	72
Lane Group Flow (vph)	0	97	84	0	137	291	80	765	0	297	745	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	28.0	28.0	15.0	28.0	28.0	21.0	15.0	41.0		21.0	47.0	
Total Split (%)	31.1%	31.1%	16.7%	31.1%	31.1%	23.3%	16.7%	45.6%		23.3%	52.2%	
Maximum Green (s)	22.0	22.0	9.0	22.0	22.0	15.0	9.0	35.0		15.0	41.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.48	0.14		0.57	0.40	0.35	0.44		0.51	0.37	
Control Delay (s/veh)		39.7	4.1		42.0	10.4	38.0	17.5		44.8	10.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.2	
Total Delay (s/veh)		39.7	4.1		42.0	10.4	38.0	17.5		44.8	10.5	
Queue Length 50th (ft)		50	0		73	59	49	160		91	75	
Queue Length 95th (ft)		91	24		123	96	m86	79		121	95	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		296	636		352	767	246	1763		672	2019	
Starvation Cap Reductn		0	0		0	0	0	0		0	448	
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	0.13		0.39	0.38	0.33	0.43		0.44	0.47	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

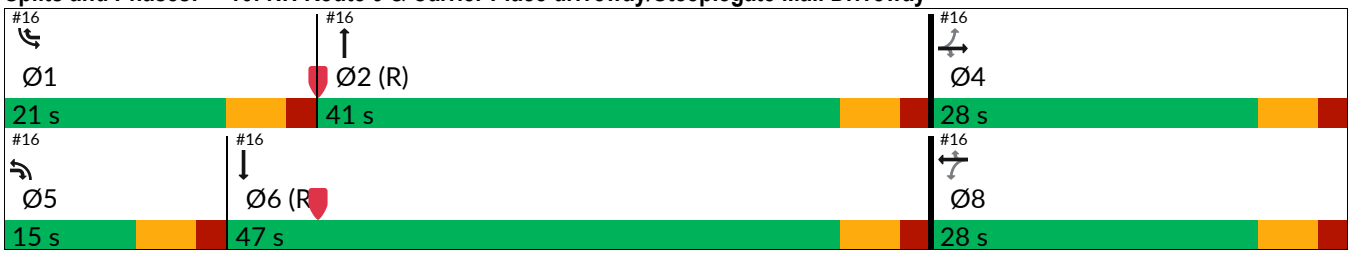
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Future Volume (vph)	87	0	76	123	0	262	75	610	109	267	606	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		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)		1805	1615		1829	1636	1847	3377		3467	3405	
Flt Permitted		0.59	1.00		0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1112	1615		1321	1636	1847	3377		3467	3405	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	97	0	84	137	0	291	80	649	116	297	673	72
RTOR Reduction (vph)	0	0	59	0	0	88	0	13	0	0	7	0
Lane Group Flow (vph)	0	97	25	0	137	203	80	752	0	297	738	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		14.4	22.4		14.4	27.5	8.0	44.5		13.1	49.6	
Effective Green, g (s)		16.4	26.4		16.4	31.5	10.0	46.5		15.1	51.6	
Actuated g/C Ratio		0.18	0.29		0.18	0.35	0.11	0.52		0.17	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		202	545		240	645	205	1744		581	1952	
v/s Ratio Prot			0.01			0.05	0.04	c0.22		c0.09	0.22	
v/s Ratio Perm		0.09	0.01		c0.10	0.07						
v/c Ratio		0.48	0.05		0.57	0.31	0.39	0.43		0.51	0.38	
Uniform Delay, d1		33.0	22.8		33.6	21.4	37.2	13.5		34.1	10.5	
Progression Factor		1.00	1.00		1.00	1.00	0.97	1.15		1.24	0.83	
Incremental Delay, d2		1.8	0.0		3.3	0.3	1.1	0.7		0.7	0.5	
Delay (s)		34.8	22.8		36.8	21.6	37.2	16.2		43.0	9.3	
Level of Service		C	C		D	C	D	B		D	A	
Approach Delay (s/veh)		29.2			26.5			18.2			18.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

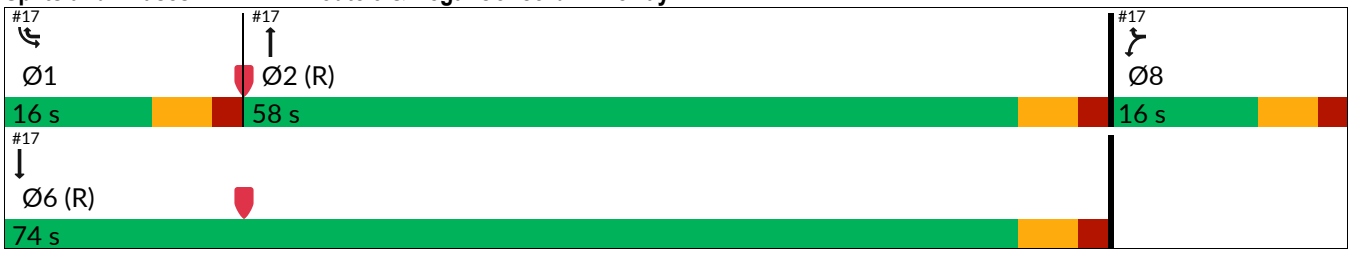
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	33	930	29	37	907
Future Volume (vph)	32	33	930	29	37	907
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.995			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	2046	1830	3438	0	1787	3455
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	2046	1830	3438	0	1787	3455
Satd. Flow (RTOR)		57	6			
Adj. Flow (vph)	55	57	959	30	41	1008
Lane Group Flow (vph)	55	57	989	0	41	1008
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Detector Phase	8	8 1	2		1	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		6.0	10.0
Minimum Split (s)	12.0		16.0		12.0	16.0
Total Split (s)	16.0		58.0		16.0	74.0
Total Split (%)	17.8%		64.4%		17.8%	82.2%
Maximum Green (s)	10.0		52.0		10.0	68.0
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.24	0.12	0.40		0.21	0.35
Control Delay (s/veh)	38.7	7.2	4.1		38.8	2.8
Queue Delay	0.0	0.0	0.1		0.0	0.0
Total Delay (s/veh)	38.7	7.2	4.2		38.8	2.8
Queue Length 50th (ft)	29	0	46		22	62
Queue Length 95th (ft)	40	9	87		52	97
Internal Link Dist (ft)	358		266			887
Turn Bay Length (ft)					360	
Base Capacity (vph)	273	499	2449		238	2891
Starvation Cap Reductn	0	0	488		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.20	0.11	0.50		0.17	0.35

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 14 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

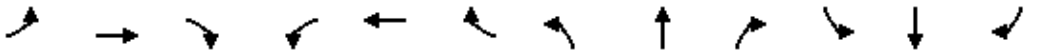
Splits and Phases: 17: NH Route 9 & Regal Concord Driveway



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	33	930	29	37	907
Future Volume (vph)	32	33	930	29	37	907
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	12	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2046	1830	3439		1787	3455
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	2046	1830	3439		1787	3455
Peak-hour factor, PHF	0.58	0.58	0.97	0.97	0.90	0.90
Adj. Flow (vph)	55	57	959	30	41	1008
RTOR Reduction (vph)	0	44	2	0	0	0
Lane Group Flow (vph)	55	13	987	0	41	1008
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Actuated Green, G (s)	6.7	19.2	58.8		6.5	71.3
Effective Green, g (s)	8.7	21.2	60.8		8.5	73.3
Actuated g/C Ratio	0.10	0.24	0.68		0.09	0.81
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	197	431	2323		168	2813
v/s Ratio Prot	c0.03	0.01	c0.29		0.02	c0.29
v/s Ratio Perm						
v/c Ratio	0.28	0.03	0.42		0.24	0.36
Uniform Delay, d1	37.7	26.5	6.6		37.8	2.2
Progression Factor	1.00	1.00	0.49		1.00	1.00
Incremental Delay, d2	0.8	0.0	0.5		0.8	0.4
Delay (s)	38.5	26.5	3.8		38.5	2.5
Level of Service	D	C	A		D	A
Approach Delay (s/veh)	32.4		3.8			4.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Future Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.993	
Flt Protected		0.958			0.955		0.950			0.950		
Satd. Flow (prot)	0	1802	1599	0	1797	1599	1805	3490	1561	1787	3431	0
Flt Permitted		0.637			0.688		0.950			0.950		
Satd. Flow (perm)	0	1198	1599	0	1294	1599	1805	3490	1561	1787	3431	0
Satd. Flow (RTOR)			205			205			123		9	
Adj. Flow (vph)	62	8	93	109	7	31	74	861	47	18	879	42
Lane Group Flow (vph)	0	70	93	0	116	31	74	861	47	18	921	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0	14.0	47.0	47.0	11.0	44.0	
Total Split (%)	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%	17.5%	58.8%	58.8%	13.8%	55.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0	8.0	41.0	41.0	5.0	38.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.34	0.21		0.51	0.07	0.33	0.34	0.04	0.09	0.43	
Control Delay (s/veh)		31.8	1.1		36.6	0.3	36.1	7.1	0.1	38.1	13.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		31.8	1.1		36.6	0.3	36.1	7.1	0.1	38.1	13.3	
Queue Length 50th (ft)		31	0		53	0	34	68	0	8	112	
Queue Length 95th (ft)		60	0		69	0	74	201	0	m16	199	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		272	522		294	522	236	2581	1186	191	2144	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.26	0.18		0.39	0.06	0.31	0.33	0.04	0.09	0.43	

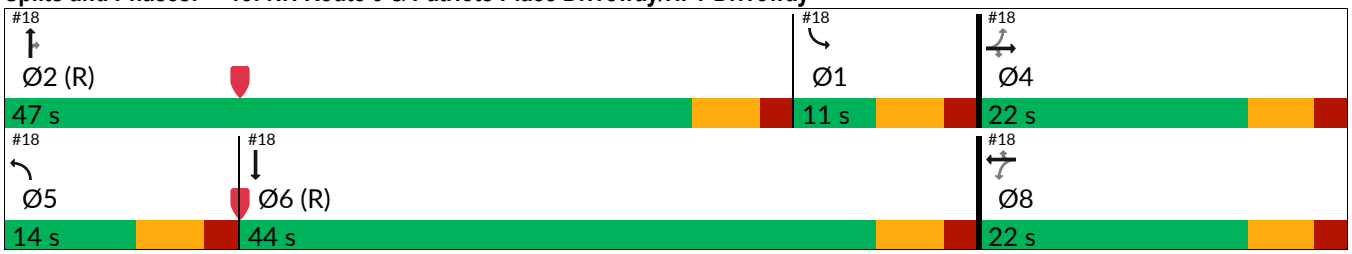
Intersection Summary

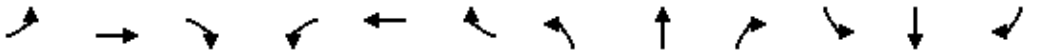
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 30 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

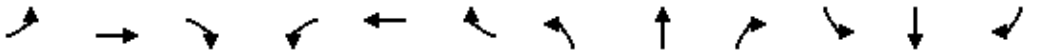




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Future Volume (vph)	53	7	79	73	5	21	73	844	46	16	791	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801	1599		1797	1599	1805	3490	1561	1787	3431	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1199	1599		1295	1599	1805	3490	1561	1787	3431	
Peak-hour factor, PHF	0.85	0.85	0.85	0.67	0.67	0.67	0.98	0.98	0.98	0.90	0.90	0.90
Adj. Flow (vph)	62	8	93	109	7	31	74	861	47	18	879	42
RTOR Reduction (vph)	0	0	78	0	0	26	0	0	17	0	4	0
Lane Group Flow (vph)	0	70	15	0	116	5	74	861	30	18	917	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		10.8	10.8		10.8	10.8	6.8	49.4	49.4	1.8	44.4	
Effective Green, g (s)		12.8	12.8		12.8	12.8	8.8	51.4	51.4	3.8	46.4	
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.11	0.64	0.64	0.05	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		191	255		207	255	198	2242	1002	84	1989	
v/s Ratio Prot							0.04	c0.25		0.01	c0.27	
v/s Ratio Perm		0.06	0.01		c0.09	0.00			0.02			
v/c Ratio		0.37	0.06		0.56	0.02	0.37	0.38	0.03	0.21	0.46	
Uniform Delay, d1		30.0	28.5		31.0	28.3	33.0	6.8	5.2	36.7	9.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.18	1.13	
Incremental Delay, d2		1.2	0.1		3.4	0.0	1.2	0.5	0.1	1.2	0.7	
Delay (s)		31.2	28.6		34.4	28.3	34.2	7.3	5.3	44.4	11.6	
Level of Service		C	C		C	C	C	A	A	D	B	
Approach Delay (s/veh)		29.7			33.2			9.2			12.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



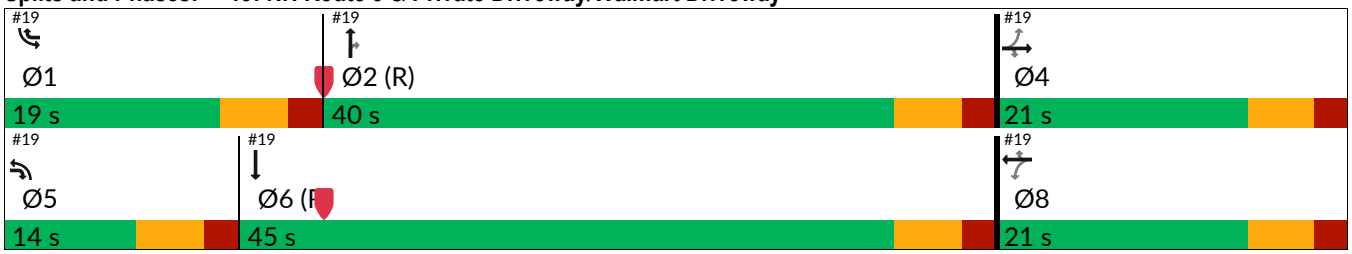
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Future Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.991	
Flt Protected		0.960			0.963		0.950			0.950		
Satd. Flow (prot)	0	1824	1615	0	1751	1546	1787	3455	1599	1685	3458	0
Flt Permitted		0.652			0.652		0.950			0.950		
Satd. Flow (perm)	0	1239	1615	0	1186	1546	1787	3455	1599	1685	3458	0
Satd. Flow (RTOR)			42			93			123		12	
Adj. Flow (vph)	100	20	42	89	26	213	64	833	22	136	816	54
Lane Group Flow (vph)	0	120	42	0	115	213	64	833	22	136	870	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	21.0	21.0	14.0	21.0	21.0	19.0	14.0	40.0	40.0	19.0	45.0	
Total Split (%)	26.3%	26.3%	17.5%	26.3%	26.3%	23.8%	17.5%	50.0%	50.0%	23.8%	56.3%	
Maximum Green (s)	15.0	15.0	8.0	15.0	15.0	13.0	8.0	34.0	34.0	13.0	39.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.55	0.08		0.56	0.35	0.30	0.44	0.02	0.50	0.40	
Control Delay (s/veh)		39.3	5.6		39.9	9.9	50.8	9.6	0.2	36.5	11.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		39.3	5.6		39.9	9.9	50.8	9.6	0.2	36.5	11.1	
Queue Length 50th (ft)		55	0		53	38	35	147	0	62	129	
Queue Length 95th (ft)		98	17		93	69	76	154	m0	114	187	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		264	549		252	648	230	1885	928	317	2180	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.45	0.08		0.46	0.33	0.28	0.44	0.02	0.43	0.40	

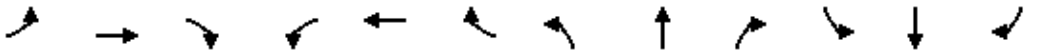
Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 42 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45

Control Type: Actuated-Coordinated

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

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Future Volume (vph)	86	17	36	75	22	179	58	750	20	122	734	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1824	1615		1751	1546	1787	3455	1599	1685	3457	
Flt Permitted		0.65	1.00		0.65	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1239	1615		1187	1546	1787	3455	1599	1685	3457	
Peak-hour factor, PHF	0.86	0.86	0.86	0.84	0.84	0.84	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	20	42	89	26	213	64	833	22	136	816	54
RTOR Reduction (vph)	0	0	31	0	0	63	0	0	10	0	5	0
Lane Group Flow (vph)	0	120	11	0	115	150	64	833	12	136	865	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		10.7	17.2		10.7	21.7	6.5	40.3	40.3	11.0	44.8	
Effective Green, g (s)		12.7	21.2		12.7	25.7	8.5	42.3	42.3	13.0	46.8	
Actuated g/C Ratio		0.16	0.27		0.16	0.32	0.11	0.53	0.53	0.16	0.59	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		196	508		188	573	189	1826	845	273	2022	
v/s Ratio Prot			0.00			0.04	0.04	c0.24		c0.08	0.25	
v/s Ratio Perm		0.10	0.00		c0.10	0.05			0.01			
v/c Ratio		0.61	0.02		0.61	0.26	0.34	0.46	0.01	0.50	0.43	
Uniform Delay, d1		31.4	21.7		31.4	20.1	33.1	11.7	8.9	30.5	9.2	
Progression Factor		1.00	1.00		1.00	1.00	1.48	0.67	1.00	1.00	1.00	
Incremental Delay, d2		5.6	0.0		5.8	0.2	1.0	0.8	0.0	1.4	0.7	
Delay (s)		36.9	21.8		37.1	20.4	50.0	8.6	9.0	32.0	9.9	
Level of Service		D	C		D	C	D	A	A	C	A	
Approach Delay (s/veh)		33.0			26.2			11.5			12.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

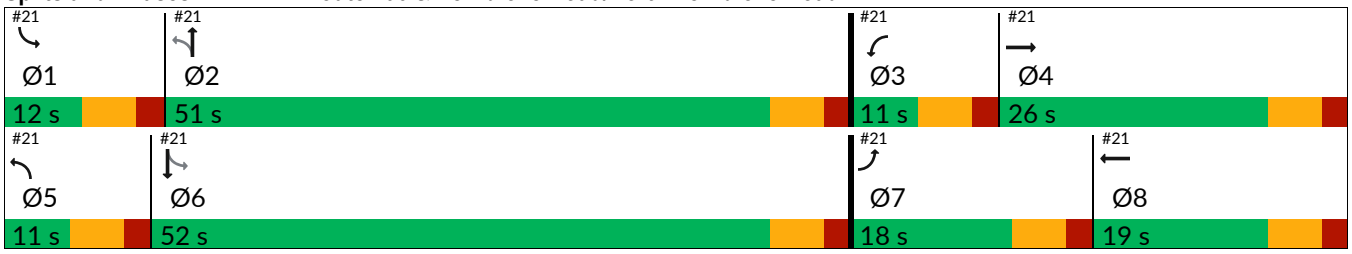
c Critical Lane Group

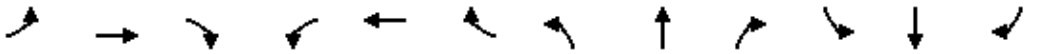
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Future Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.915			0.912			0.992			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	1721	0	1736	1500	0	1811	3477	0	1829	3454	0
Flt Permitted	0.950			0.950			0.157			0.098		
Satd. Flow (perm)	3467	1721	0	1736	1500	0	299	3477	0	189	3454	0
Satd. Flow (RTOR)		60			60			8			30	
Adj. Flow (vph)	273	86	111	32	48	68	86	1190	67	101	915	175
Lane Group Flow (vph)	273	197	0	32	116	0	86	1257	0	101	1090	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	18.0	26.0		11.0	19.0		11.0	51.0		12.0	52.0	
Total Split (%)	18.0%	26.0%		11.0%	19.0%		11.0%	51.0%		12.0%	52.0%	
Maximum Green (s)	12.0	20.0		5.0	13.0		5.0	45.0		6.0	46.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
v/c Ratio	0.48	0.44		0.20	0.45		0.28	0.73		0.36	0.62	
Control Delay (s/veh)	39.9	26.5		46.1	27.5		10.9	22.0		12.4	18.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	39.9	26.5		46.1	27.5		10.9	22.0		12.4	18.4	
Queue Length 50th (ft)	79	74		19	32		20	315		23	241	
Queue Length 95th (ft)	127	145		52	89		44	432		50	335	
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200			250		
Base Capacity (vph)	638	554		159	344		304	2092		280	2117	
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	0.36		0.20	0.34		0.28	0.60		0.36	0.51	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 84
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road

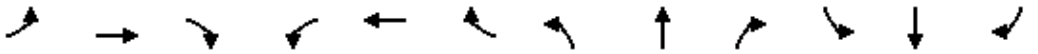




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Future Volume (vph)	246	77	100	29	43	61	77	1071	60	94	851	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.92		1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3467	1722		1736	1500		1811	3477		1829	3454	
Flt Permitted	0.95	1.00		0.95	1.00		0.16	1.00		0.10	1.00	
Satd. Flow (perm)	3467	1722		1736	1500		299	3477		188	3454	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93
Adj. Flow (vph)	273	86	111	32	48	68	86	1190	67	101	915	175
RTOR Reduction (vph)	0	47	0	0	53	0	0	4	0	0	16	0
Lane Group Flow (vph)	273	150	0	32	63	0	86	1253	0	101	1074	0
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	11.5	17.2		2.6	8.3		42.9	39.3		44.3	40.0	
Effective Green, g (s)	13.5	19.2		4.6	10.3		46.9	41.3		48.3	42.0	
Actuated g/C Ratio	0.15	0.22		0.05	0.12		0.54	0.47		0.55	0.48	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	535	378		91	176		257	1643		222	1659	
v/s Ratio Prot	c0.08	c0.09		0.02	0.04		0.02	c0.36		c0.03	0.31	
v/s Ratio Perm							0.16			0.22		
v/c Ratio	0.51	0.40		0.35	0.36		0.33	0.76		0.45	0.65	
Uniform Delay, d1	33.9	29.2		40.0	35.5		11.7	19.0		13.4	17.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.7		2.3	1.3		0.8	2.2		1.5	0.9	
Delay (s)	34.7	29.8		42.3	36.8		12.5	21.2		14.9	18.0	
Level of Service	C	C		D	D		B	C		B	B	
Approach Delay (s/veh)		32.7			38.0			20.6			17.7	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Future Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.861			0.920				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1566	0	1805	1981	0	1728	1818	1599	1787	1818	1546
Flt Permitted	0.359			0.673			0.121			0.203		
Satd. Flow (perm)	675	1566	0	1279	1981	0	220	1818	1599	382	1818	1546
Satd. Flow (RTOR)		121			35				92			305
Adj. Flow (vph)	453	10	121	17	51	59	65	785	1	10	716	352
Lane Group Flow (vph)	453	131	0	17	110	0	65	785	1	10	716	352
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	30.0	44.0		14.0	14.0		11.0	66.0	66.0	55.0	55.0	55.0
Total Split (%)	23.1%	33.8%		10.8%	10.8%		8.5%	50.8%	50.8%	42.3%	42.3%	42.3%
Maximum Green (s)	24.0	38.0		8.0	8.0		5.0	60.0	60.0	49.0	49.0	49.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.87	0.20		0.15	0.53		0.30	0.78	0.00	0.06	0.83	0.39
Control Delay (s/veh)	48.5	6.0		49.5	42.9		14.5	25.2	0.0	17.4	35.2	4.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.5	6.0		49.5	42.9		14.5	25.2	0.0	17.4	35.2	4.7
Queue Length 50th (ft)	272	5		11	51		20	406	0	4	439	18
Queue Length 95th (ft)	#430	45		34	109		40	578	0	15	#667	74
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230	200		315
Base Capacity (vph)	520	662		119	216		220	1055	967	182	868	897
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.20		0.14	0.51		0.30	0.74	0.00	0.05	0.82	0.39

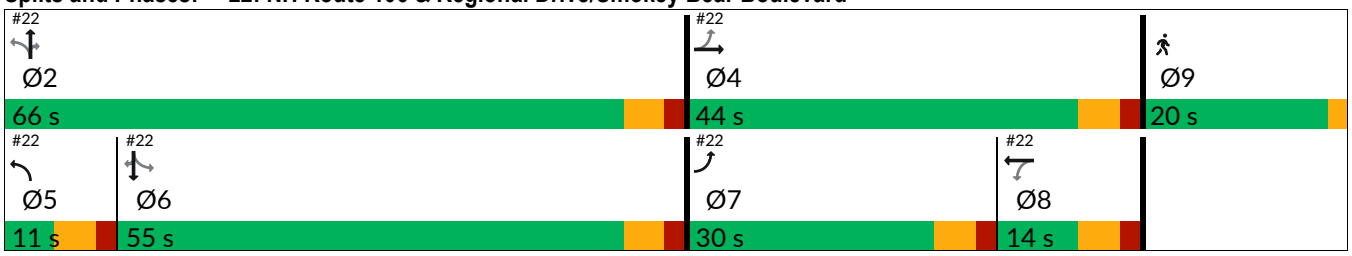
Intersection Summary
Cycle Length: 130

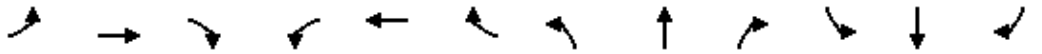
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	15%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 107.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Future Volume (vph)	408	9	109	15	46	53	60	730	1	9	652	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1567		1805	1980		1728	1818	1599	1787	1818	1546
Flt Permitted	0.36	1.00		0.67	1.00		0.12	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)	675	1567		1279	1980		220	1818	1599	381	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93	0.91	0.91	0.91
Adj. Flow (vph)	453	10	121	17	51	59	65	785	1	10	716	352
RTOR Reduction (vph)	0	77	0	0	32	0	0	0	0	0	0	162
Lane Group Flow (vph)	453	54	0	17	78	0	65	785	1	10	716	190
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	37.6	37.6		7.5	7.5		58.8	58.8	58.8	48.9	48.9	48.9
Effective Green, g (s)	39.6	39.6		9.5	9.5		60.8	60.8	60.8	50.9	50.9	50.9
Actuated g/C Ratio	0.37	0.37		0.09	0.09		0.56	0.56	0.56	0.47	0.47	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	514	572		112	173		205	1019	896	178	853	725
v/s Ratio Prot	c0.21	0.03			0.04		0.02	c0.43			c0.39	
v/s Ratio Perm	c0.11			0.01			0.16		0.00	0.03		0.12
v/c Ratio	0.88	0.09		0.15	0.45		0.32	0.77	0.00	0.06	0.84	0.26
Uniform Delay, d1	29.5	22.6		45.7	47.0		18.2	18.4	10.5	15.7	25.2	17.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.1	0.1		0.6	1.9		0.9	3.7	0.0	0.1	7.3	0.2
Delay (s)	45.7	22.7		46.4	48.8		19.1	22.1	10.5	15.8	32.5	17.6
Level of Service	D	C		D	D		B	C	B	B	C	B
Approach Delay (s/veh)		40.5			48.5			21.8			27.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	108.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Future Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.994				0.850			0.850
Flt Protected	0.950			0.950				0.976			0.953	
Satd. Flow (prot)	3467	3336	0	1668	3316	0	0	1854	1830	0	1733	1546
Flt Permitted	0.950			0.950				0.866			0.726	
Satd. Flow (perm)	3467	3336	0	1668	3316	0	0	1645	1830	0	1320	1546
Satd. Flow (RTOR)					3				155			606
Adj. Flow (vph)	484	1219	1	2	1170	49	2	2	4	103	1	1020
Lane Group Flow (vph)	484	1220	0	2	1219	0	0	4	4	0	104	1020
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	24.0	45.0		11.0	32.0		37.0	37.0	37.0	37.0	37.0	24.0
Total Split (%)	20.0%	37.5%		9.2%	26.7%		30.8%	30.8%	30.8%	30.8%	30.8%	20.0%
Maximum Green (s)	18.0	39.0		5.0	26.0		31.0	31.0	31.0	31.0	31.0	18.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.49	0.50		0.01	0.91			0.01	0.01		0.43	0.96
Control Delay (s/veh)	24.2	7.6		31.5	34.0			24.0	0.0		32.5	28.8
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	24.2	7.6		31.5	34.0			24.0	0.0		32.5	28.8
Queue Length 50th (ft)	94	105		1	275			2	0		43	183
Queue Length 95th (ft)	150	286		7	#461			5	0		87	#556
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	997	2448		168	1337			781	950		626	1059
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	0.49	0.50		0.01	0.91			0.01	0.00		0.17	0.96

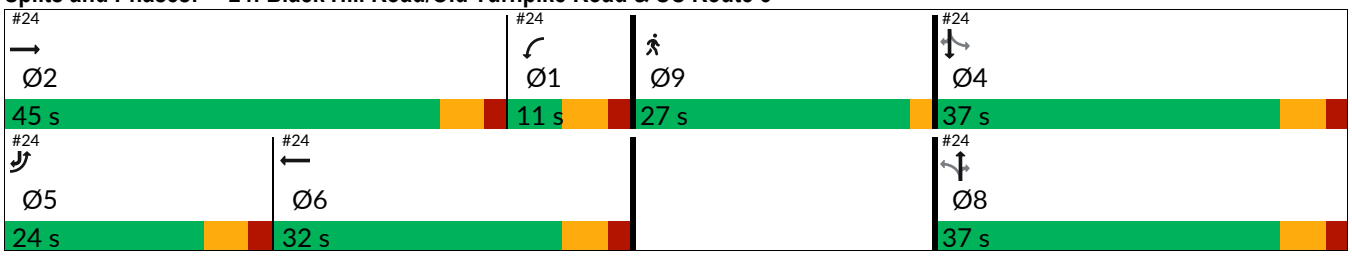
Intersection Summary
Cycle Length: 120

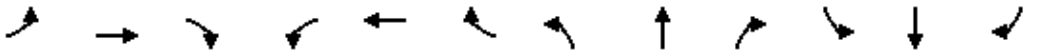
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	23%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 70.4
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Future Volume (vph)	450	1134	1	2	1053	44	1	1	2	93	1	918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.95	1.00
Satd. Flow (prot)	3467	3336		1668	3316			1854	1830		1733	1546
Flt Permitted	0.95	1.00		0.95	1.00			0.87	1.00		0.73	1.00
Satd. Flow (perm)	3467	3336		1668	3316			1646	1830		1320	1546
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	484	1219	1	2	1170	49	2	2	4	103	1	1020
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	3	0	0	359
Lane Group Flow (vph)	484	1220	0	2	1217	0	0	4	1	0	104	661
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Actuated Green, G (s)	18.2	48.7		0.9	31.4			9.1	9.1		9.1	27.3
Effective Green, g (s)	20.2	50.7		2.9	33.4			11.1	11.1		11.1	31.3
Actuated g/C Ratio	0.26	0.66		0.04	0.44			0.14	0.14		0.14	0.41
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	913	2205		63	1443			238	264		191	711
v/s Ratio Prot	0.14	0.37		0.00	c0.37							c0.24
v/s Ratio Perm								0.00	0.00		0.08	0.18
v/c Ratio	0.53	0.55		0.03	0.84			0.02	0.00		0.54	0.93
Uniform Delay, d1	24.2	6.9		35.5	19.3			28.1	28.1		30.5	21.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.3		0.2	4.7			0.0	0.0		3.2	18.7
Delay (s)	24.8	7.3		35.8	24.0			28.2	28.1		33.6	40.4
Level of Service	C	A		D	C			C	C		C	D
Approach Delay (s/veh)		12.2			24.0			28.1			39.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Future Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00
Frt				0.850						0.850		0.870
Flt Protected		0.950			0.950			0.950	0.950			
Satd. Flow (prot)	0	1728	3455	1492	1728	4964	0	1715	1715	1669	0	1763
Flt Permitted		0.950			0.950			0.950	0.950			
Satd. Flow (perm)	0	1728	3455	1492	1728	4964	0	1715	1715	1669	0	1763
Satd. Flow (RTOR)				120						185		57
Adj. Flow (vph)	2	32	1420	309	27	1601	0	375	0	86	0	2
Lane Group Flow (vph)	0	34	1420	309	27	1601	0	187	188	86	0	59
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA
Protected Phases	5	5	2	2 3	1	6		3	3	3	4	4
Permitted Phases												
Detector Phase	5	5	2	2 3	1	6		3	3	3	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0		6.0	6.0		5.0	5.0	5.0	6.0	6.0
Minimum Split (s)	12.0	12.0	12.0		12.0	12.0		11.0	11.0	11.0	12.0	12.0
Total Split (s)	12.0	12.0	24.0		12.0	24.0		19.0	19.0	19.0	12.0	12.0
Total Split (%)	12.0%	12.0%	24.0%		12.0%	24.0%		19.0%	19.0%	19.0%	12.0%	12.0%
Maximum Green (s)	6.0	6.0	18.0		6.0	18.0		13.0	13.0	13.0	6.0	6.0
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min		None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.21	0.78	0.26	0.17	0.62		0.53	0.53	0.17		0.29
Control Delay (s/veh)		44.0	28.0	3.8	37.7	27.7		39.5	39.6	0.8		16.0
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay (s/veh)		44.0	28.0	3.8	37.7	27.7		39.5	39.6	0.8		16.0
Queue Length 50th (ft)		21	420	35	17	280		112	113	0		1
Queue Length 95th (ft)		50	#741	80	m28	#482		129	129	0		12
Internal Link Dist (ft)			856			537			557			277
Turn Bay Length (ft)		105		105	150			300		300		
Base Capacity (vph)		165	1813	1185	159	2590		363	363	499		206
Starvation Cap Reductn		0	0	0	0	0		0	0	0		0
Spillback Cap Reductn		0	0	0	0	0		0	0	0		0
Storage Cap Reductn		0	0	0	0	0		0	0	0		0
Reduced v/c Ratio		0.21	0.78	0.26	0.17	0.62		0.52	0.52	0.17		0.29

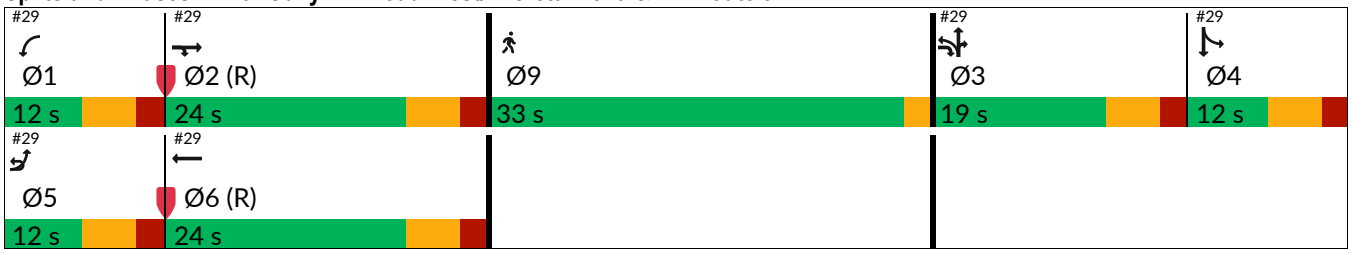
Intersection Summary
Cycle Length: 100

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	33	
Future Volume (vph)	33	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	57	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		33.0
Total Split (s)		33.0
Total Split (%)		33%
Maximum Green (s)		31.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		24.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100
Offset: 27 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
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.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



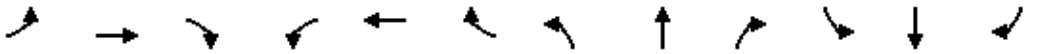
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Future Volume (vph)	2	30	1349	294	25	1505	0	274	0	63	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	11	11	12	12	12	13	12	14
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.87
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00
Satd. Flow (prot)		1728	3455	1492	1728	4964		1715	1715	1669		1762
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00
Satd. Flow (perm)		1728	3455	1492	1728	4964		1715	1715	1669		1762
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.73	0.73	0.73	0.58	0.58
Adj. Flow (vph)	2	32	1420	309	27	1601	0	375	0	86	0	2
RTOR Reduction (vph)	0	0	0	32	0	0	0	0	0	68	0	53
Lane Group Flow (vph)	0	34	1420	277	27	1601	0	187	188	18	0	6
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot		NA
Protected Phases	5	5	2	2 3	1	6		3	3	3	4	4
Permitted Phases												
Actuated Green, G (s)		5.1	46.9	71.6	4.8	46.6		18.7	18.7	18.7		5.6
Effective Green, g (s)		7.1	48.9	73.6	6.8	48.6		20.7	20.7	20.7		7.6
Actuated g/C Ratio		0.07	0.49	0.74	0.07	0.49		0.21	0.21	0.21		0.08
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		122	1689	1098	117	2412		355	355	345		133
v/s Ratio Prot		c0.02	c0.41	0.19	0.02	0.32		0.11	c0.11	0.01		c0.00
v/s Ratio Perm												
v/c Ratio		0.28	0.84	0.25	0.23	0.66		0.53	0.53	0.05		0.05
Uniform Delay, d1		44.0	22.2	4.3	44.1	19.5		35.3	35.3	31.8		42.8
Progression Factor		1.00	1.00	1.00	0.86	1.28		1.00	1.00	1.00		1.00
Incremental Delay, d2		1.2	5.2	0.1	0.8	1.2		1.4	1.4	0.1		0.1
Delay (s)		45.3	27.4	4.4	39.0	26.1		36.7	36.7	31.8		43.0
Level of Service		D	C	A	D	C		D	D	C		D
Approach Delay (s/veh)			23.7			26.3			35.8			43.0
Approach LOS			C			C			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.58
Adj. Flow (vph)	57
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Future Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850		0.850	
Flt Protected				0.950			0.950	0.953		0.950		
Satd. Flow (prot)	1818	4964	1546	3351	3448	0	1681	1686	1583	1847	1652	0
Flt Permitted				0.950			0.950	0.953		0.950		
Satd. Flow (perm)	1818	4964	1546	3351	3448	0	1681	1686	1583	1847	1652	0
Satd. Flow (RTOR)			120		1				185		564	
Adj. Flow (vph)	0	1406	96	201	1545	18	139	1	184	24	0	5
Lane Group Flow (vph)	0	1406	96	201	1563	0	69	71	184	24	5	0
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Detector Phase	5	2	2 3	1	6		3	3	3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Total Split (s)	12.0	32.0		15.0	35.0		12.0	12.0	12.0	12.0	12.0	
Total Split (%)	12.0%	32.0%		15.0%	35.0%		12.0%	12.0%	12.0%	12.0%	12.0%	
Maximum Green (s)	6.0	26.0		9.0	29.0		6.0	6.0	6.0	6.0	6.0	
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)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	6.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	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	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.52	0.09	0.45	0.63		0.34	0.35	0.56	0.15	0.01	
Control Delay (s/veh)		14.5	3.1	42.9	10.7		43.6	43.9	13.1	43.5	0.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		14.5	3.1	42.9	10.7		43.6	43.9	13.1	43.5	0.0	
Queue Length 50th (ft)		332	11	62	277		44	45	0	15	0	
Queue Length 95th (ft)		406	m23	94	445		83	84	56	18	0	
Internal Link Dist (ft)		537			2513			449			256	
Turn Bay Length (ft)			225	200			90					
Base Capacity (vph)		2702	1126	450	2472		203	204	326	165	661	
Starvation Cap Reductn		0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0	
Storage Cap Reductn		0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio		0.52	0.09	0.45	0.63		0.34	0.35	0.56	0.15	0.01	

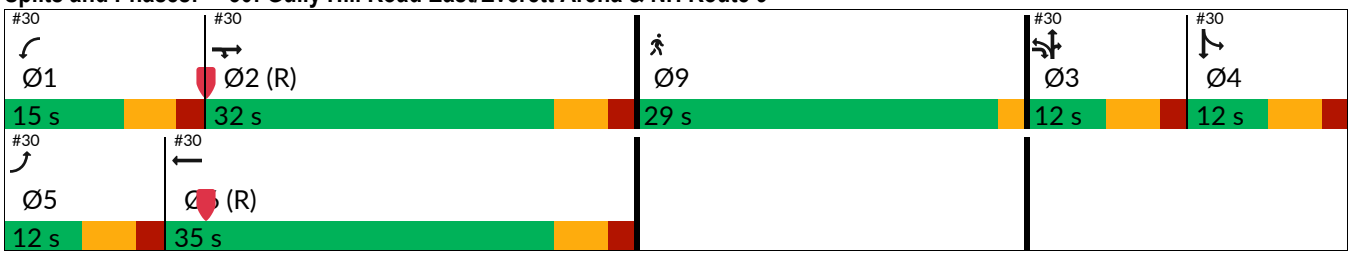
Intersection Summary
Cycle Length: 100

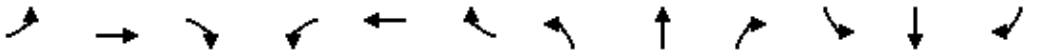
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	29%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 100
Offset: 57 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9

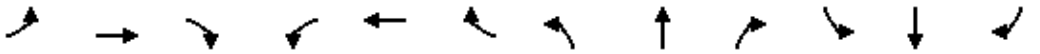




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Future Volume (vph)	0	1322	90	183	1406	16	122	1	162	10	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	13	13	12
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0	4.0	6.0	4.0	4.0	
Lane Util. Factor		0.91	1.00	0.97	0.95		0.95	0.95	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (prot)		4964	1546	3351	3449		1681	1686	1583	1847	1652	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	0.95	1.00	0.95	1.00	
Satd. Flow (perm)		4964	1546	3351	3449		1681	1686	1583	1847	1652	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88	0.42	0.42	0.42
Adj. Flow (vph)	0	1406	96	201	1545	18	139	1	184	24	0	5
RTOR Reduction (vph)	0	0	31	0	0	0	0	0	165	0	5	0
Lane Group Flow (vph)	0	1406	65	201	1563	0	69	71	19	24	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2	2 3	1	6		3	3	3	4	4	
Permitted Phases												
Actuated Green, G (s)		50.0	66.1	11.3	67.3		10.1	10.1	10.1	4.6	4.6	
Effective Green, g (s)		52.0	68.1	13.3	69.3		12.1	12.1	10.1	6.6	6.6	
Actuated g/C Ratio		0.52	0.68	0.13	0.69		0.12	0.12	0.10	0.07	0.07	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2581	1052	445	2390		203	204	159	121	109	
v/s Ratio Prot		0.28	0.04	0.06	c0.45		0.04	c0.04	0.01	c0.01	0.00	
v/s Ratio Perm												
v/c Ratio		0.54	0.06	0.45	0.65		0.34	0.35	0.12	0.20	0.00	
Uniform Delay, d1		16.1	5.3	40.0	8.6		40.3	40.3	40.9	44.2	43.6	
Progression Factor		0.83	3.22	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.0	0.7	1.4		1.0	1.0	0.3	0.8	0.0	
Delay (s)		13.8	17.1	40.7	10.0		41.3	41.4	41.2	45.0	43.6	
Level of Service		B	B	D	B		D	D	D	D	D	
Approach Delay (s/veh)		14.0			13.5			41.3			44.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

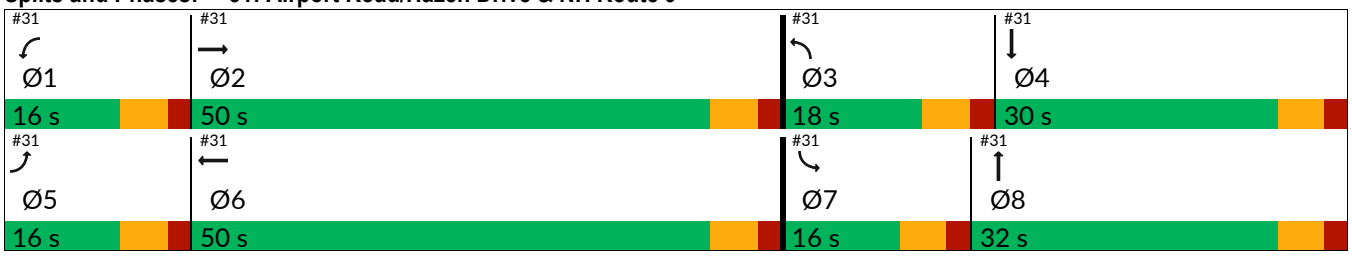


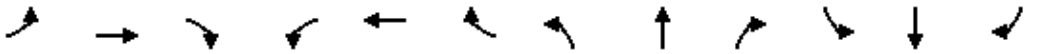
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Future Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Satd. Flow (RTOR)			229			201			279			368
Adj. Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
Lane Group Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	16.0	50.0		16.0	50.0		18.0	32.0		16.0	30.0	
Total Split (%)	14.0%	43.9%		14.0%	43.9%		15.8%	28.1%		14.0%	26.3%	
Maximum Green (s)	10.0	44.0		10.0	44.0		12.0	26.0		10.0	24.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.25	0.91	0.17	0.62	0.66	0.04	0.69	0.29	0.17	0.45	0.69	0.24
Control Delay (s/veh)	48.8	41.0	0.2	54.7	26.8	0.0	55.2	37.0	0.2	55.8	51.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.8	41.0	0.2	54.7	26.8	0.0	55.2	37.0	0.2	55.8	51.2	0.4
Queue Length 50th (ft)	26	460	0	82	313	0	103	77	0	53	160	0
Queue Length 95th (ft)	51	#652	0	129	434	0	156	133	0	106	246	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	386	1475	1599	386	1605	1652	435	483	1599	192	439	1546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.90	0.17	0.61	0.66	0.04	0.67	0.27	0.17	0.41	0.55	0.24

Intersection Summary
Cycle Length: 114

Actuated Cycle Length: 108
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Future Volume (vph)	69	1199	241	222	1011	67	263	115	251	71	217	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1728	1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	1332	268	234	1064	71	292	128	279	79	241	368
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	6.5	44.9	110.6	9.8	48.2	110.6	11.7	24.4	110.6	7.5	20.2	110.6
Effective Green, g (s)	8.5	46.9	110.6	11.8	50.2	110.6	13.7	26.4	110.6	9.5	22.2	110.6
Actuated g/C Ratio	0.08	0.42	1.00	0.11	0.45	1.00	0.12	0.24	1.00	0.09	0.20	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	266	1465	1599	369	1568	1652	415	433	1599	148	364	1546
v/s Ratio Prot	0.02	c0.39		c0.07	0.31		c0.09	0.07		0.05	c0.13	
v/s Ratio Perm			0.17			0.04			0.17			c0.24
v/c Ratio	0.29	0.91	0.17	0.63	0.68	0.04	0.70	0.30	0.17	0.53	0.66	0.24
Uniform Delay, d1	48.2	29.9	0.0	47.3	23.8	0.0	46.5	34.5	0.0	48.4	40.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	8.5	0.2	3.5	1.2	0.0	5.3	0.4	0.2	3.7	4.5	0.4
Delay (s)	48.8	38.4	0.2	50.9	25.0	0.0	51.8	34.9	0.2	52.1	45.2	0.4
Level of Service	D	D	A	D	C	A	D	C	A	D	D	A
Approach Delay (s/veh)		32.8			28.1			28.1			22.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Future Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt			0.996				0.850			0.850		0.936
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1787	3323	0	1668	3455	1546	1668	1756	1492	3236	1761
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1787	3323	0	1668	3455	1546	1668	1756	1492	3236	1761
Satd. Flow (RTOR)			2				183			86		22
Adj. Flow (vph)	8	95	1152	35	37	1050	388	142	293	69	418	147
Lane Group Flow (vph)	0	103	1187	0	37	1050	388	142	293	69	418	256
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Detector Phase	5	5	2		1	6	6 4	8	8	8 1	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	17.0	17.0	46.0		12.0	41.0		26.0	26.0		23.0	23.0
Total Split (%)	12.2%	12.2%	33.1%		8.6%	29.5%		18.7%	18.7%		16.5%	16.5%
Maximum Green (s)	11.0	11.0	40.0		6.0	35.0		20.0	20.0		17.0	17.0
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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.51	0.87		0.30	0.87	0.41	0.41	0.81	0.13	0.72	0.77
Control Delay (s/veh)		53.5	37.5		53.7	41.6	7.9	41.1	58.6	4.5	49.4	54.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		53.5	37.5		53.7	41.6	7.9	41.1	58.6	4.5	49.4	54.9
Queue Length 50th (ft)		67	401		25	355	68	86	195	0	142	156
Queue Length 95th (ft)		123	#540		59	#475	133	148	#331	23	196	#280
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125		125	130		130	350	
Base Capacity (vph)		218	1369		125	1209	955	344	363	535	578	332
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.47	0.87		0.30	0.87	0.41	0.41	0.81	0.13	0.72	0.77

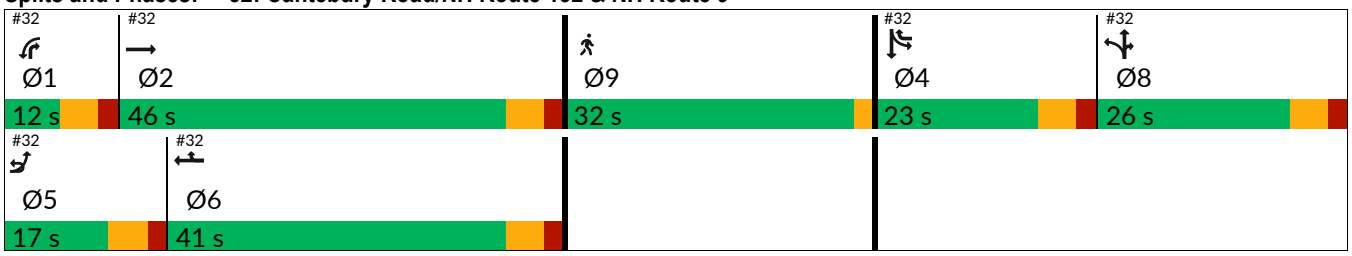
Intersection Summary
Cycle Length: 139

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	105	
Future Volume (vph)	105	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	109	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		23%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 106.3
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 32: Cantebury Road/NH Route 132 & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Future Volume (vph)	8	95	1152	35	35	987	365	128	264	62	401	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94
Flt Protected		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1787	3321		1668	3455	1546	1668	1756	1492	3236	1761
Flt Permitted		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1787	3321		1668	3455	1546	1668	1756	1492	3236	1761
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	0.94	0.94	0.94	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	8	95	1152	35	37	1050	388	142	293	69	418	147
RTOR Reduction (vph)	0	0	1	0	0	0	78	0	0	48	0	18
Lane Group Flow (vph)	0	103	1186	0	37	1050	310	142	293	21	418	238
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Actuated Green, G (s)		10.1	41.8		4.8	36.5	59.5	20.0	20.0	30.8	17.0	17.0
Effective Green, g (s)		12.1	43.8		6.8	38.5	61.5	22.0	22.0	32.8	19.0	19.0
Actuated g/C Ratio		0.11	0.41		0.06	0.36	0.57	0.20	0.20	0.30	0.18	0.18
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		200	1351		105	1236	883	341	359	454	571	310
v/s Ratio Prot		c0.06	c0.36		0.02	0.30	0.20	0.09	c0.17	0.01	0.13	c0.14
v/s Ratio Perm												
v/c Ratio		0.52	0.88		0.35	0.85	0.35	0.42	0.82	0.05	0.73	0.77
Uniform Delay, d1		45.0	29.4		48.3	31.9	12.4	37.2	40.9	26.4	41.9	42.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.2	6.7		2.0	5.6	0.2	0.8	13.3	0.0	4.8	10.8
Delay (s)		47.2	36.2		50.3	37.5	12.6	38.0	54.2	26.4	46.7	53.0
Level of Service		D	D		D	D	B	D	D	C	D	D
Approach Delay (s/veh)			37.1			31.3			45.8			49.1
Approach LOS			D			C			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	107.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	1%
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/veh)	
Approach LOS	

Intersection Summary

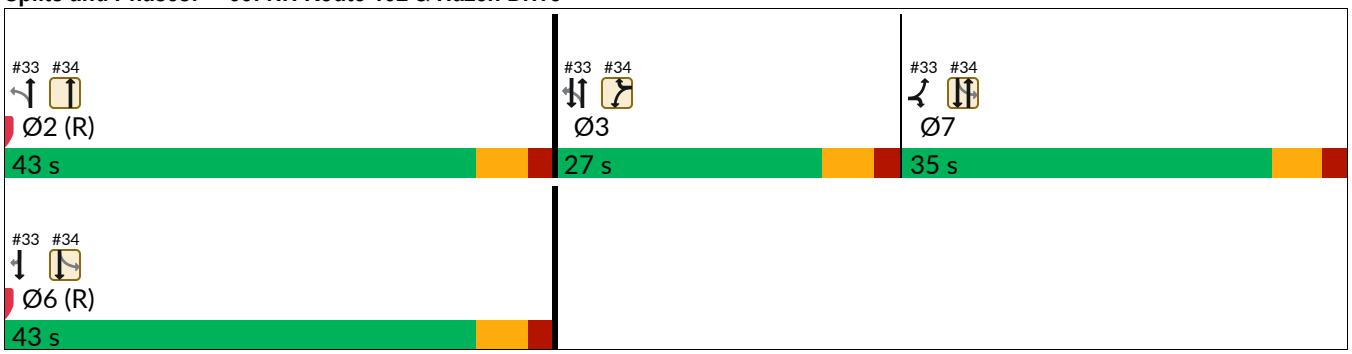
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	547	64	8	649	537	159			
Future Volume (vph)	547	64	8	649	537	159			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	3467	1599	0	1817	1881	1546			
Flt Permitted	0.950			0.993					
Satd. Flow (perm)	3467	1599	0	1806	1881	1546			
Satd. Flow (RTOR)		71				175			
Adj. Flow (vph)	608	71	9	721	590	175			
Lane Group Flow (vph)	608	71	0	730	590	175			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	35.0	35.0					43.0	27.0	43.0
Total Split (%)	33.3%	33.3%					41%	26%	41%
Maximum Green (s)	29.0	29.0					37.0	21.0	37.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.59	0.14		0.64	0.50	0.17			
Control Delay (s/veh)	34.5	7.3		15.5	15.0	4.4			
Queue Delay	0.1	0.0		0.0	1.3	0.0			
Total Delay (s/veh)	34.6	7.3		15.5	16.3	4.4			
Queue Length 50th (ft)	180	0		283	210	8			
Queue Length 95th (ft)	239	33		406	m300	m32			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	1023	522		1126	1173	1030			
Starvation Cap Reductn	0	0		0	366	0			
Spillback Cap Reductn	23	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.61	0.14		0.65	0.73	0.17			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	547	64	8	649	537	159
Future Volume (vph)	547	64	8	649	537	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3467	1599		1817	1881	1546
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	3467	1599		1805	1881	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.91	0.91
Adj. Flow (vph)	608	71	9	721	590	175
RTOR Reduction (vph)	0	50	0	0	0	65
Lane Group Flow (vph)	608	21	0	730	590	110
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	29.0	29.0		64.0	64.0	64.0
Effective Green, g (s)	31.0	31.0		66.0	66.0	66.0
Actuated g/C Ratio	0.30	0.30		0.63	0.63	0.63
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	1023	472		1134	1182	971
v/s Ratio Prot	c0.18	0.01			0.31	
v/s Ratio Perm				c0.40		0.07
v/c Ratio	0.59	0.04		0.64	0.50	0.11
Uniform Delay, d1	31.6	26.4		12.2	10.6	7.8
Progression Factor	1.00	1.00		1.00	1.26	3.35
Incremental Delay, d2	0.9	0.0		1.3	0.3	0.0
Delay (s)	32.6	26.5		13.4	13.6	26.2
Level of Service	C	C		B	B	C
Approach Delay (s/veh)	31.9			13.4	16.5	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

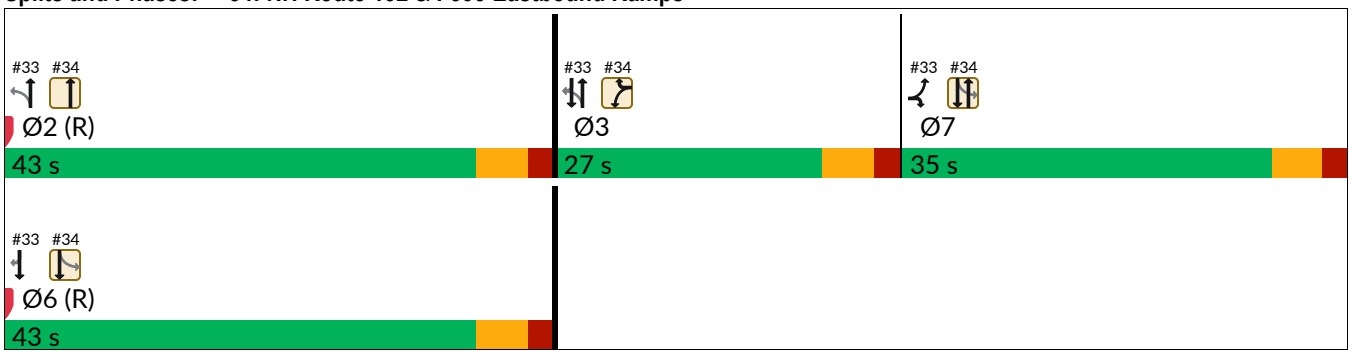
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	302	171	964	243	49	411			
Future Volume (vph)	302	171	964	243	49	411			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.970						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1787	1599	3351	0	1728	1818			
Flt Permitted	0.950				0.159				
Satd. Flow (perm)	1787	1599	3351	0	289	1818			
Satd. Flow (RTOR)		148	72						
Adj. Flow (vph)	336	190	1071	270	53	442			
Lane Group Flow (vph)	336	190	1341	0	53	442			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	27.0	27.0					43.0	43.0	35.0
Total Split (%)	25.7%	25.7%					41%	41%	33%
Maximum Green (s)	21.0	21.0					37.0	37.0	29.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.85	0.41	0.57		0.26	0.35			
Control Delay (s/veh)	60.1	12.5	4.6		9.5	7.0			
Queue Delay	0.0	0.0	0.6		0.0	0.0			
Total Delay (s/veh)	60.1	12.5	5.2		9.5	7.0			
Queue Length 50th (ft)	220	23	75		11	102			
Queue Length 95th (ft)	#377	86	134		32	149			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	396	469	2382		203	1281			
Starvation Cap Reductn	0	0	589		0	0			
Spillback Cap Reductn	0	0	0		0	30			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.85	0.41	0.75		0.26	0.35			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	302	171	964	243	49	411
Future Volume (vph)	302	171	964	243	49	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	1599	3351		1728	1818
Flt Permitted	0.95	1.00	1.00		0.16	1.00
Satd. Flow (perm)	1787	1599	3351		289	1818
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.93	0.93
Adj. Flow (vph)	336	190	1071	270	53	442
RTOR Reduction (vph)	0	115	21	0	0	0
Lane Group Flow (vph)	336	75	1320	0	53	442
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	21.3	21.3	71.7		71.7	71.7
Effective Green, g (s)	23.3	23.3	73.7		73.7	73.7
Actuated g/C Ratio	0.22	0.22	0.70		0.70	0.70
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	396	354	2352		202	1276
v/s Ratio Prot	c0.19	0.05	c0.39			0.24
v/s Ratio Perm					0.18	
v/c Ratio	0.85	0.21	0.56		0.26	0.35
Uniform Delay, d1	39.2	33.3	7.7		5.7	6.2
Progression Factor	1.00	1.00	0.52		1.00	1.00
Incremental Delay, d2	15.4	0.3	0.2		0.7	0.2
Delay (s)	54.6	33.6	4.2		6.4	6.3
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	47.0		4.2			6.3
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

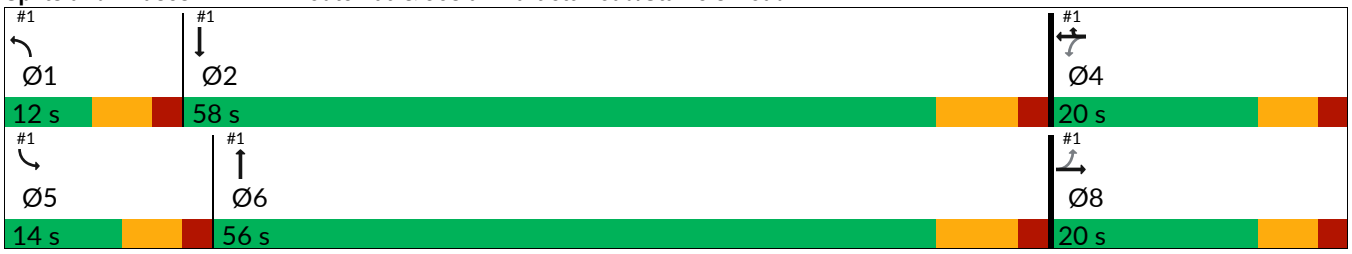
c Critical Lane Group

2037 Mitigated Build Saturday Midday Peak-Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Future Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.983				0.850		0.989			0.999	
Flt Protected					0.950		0.950			0.950		
Satd. Flow (prot)	0	1868	0	0	1805	1615	1787	3535	0	1787	3571	0
Flt Permitted					0.747		0.950			0.950		
Satd. Flow (perm)	0	1868	0	0	1419	1615	1787	3535	0	1787	3571	0
Satd. Flow (RTOR)		2				127		15			1	
Adj. Flow (vph)	0	14	2	86	0	50	7	1001	78	36	1127	8
Lane Group Flow (vph)	0	16	0	0	86	50	7	1079	0	36	1135	0
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	4.0	8.0		4.0	8.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	10.0	15.5		10.0	15.5	
Total Split (s)	20.0	20.0		20.0	20.0	20.0	12.0	56.0		14.0	58.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%	22.2%	13.3%	62.2%		15.6%	64.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0	14.0	6.0	48.5		8.0	50.5	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.5		4.0	5.5	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	0.0	-2.0		0.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
v/c Ratio		0.04			0.30	0.12	0.04	0.47		0.16	0.46	
Control Delay (s/veh)		23.4			27.5	0.6	32.5	9.8		31.5	7.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.4			27.5	0.6	32.5	9.8		31.5	7.6	
Queue Length 50th (ft)		3			21	0	2	82		10	90	
Queue Length 95th (ft)		10			67	0	16	247		46	252	
Internal Link Dist (ft)		587			576			6589			938	
Turn Bay Length (ft)							300			450		
Base Capacity (vph)		565			428	576	202	3037		269	3116	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.03			0.20	0.09	0.03	0.36		0.13	0.36	

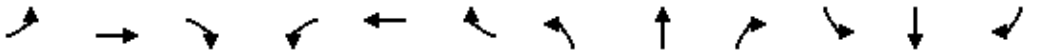
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 58.2
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: NH Route 106 & Josiah Bartlett Road/Staniels Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Future Volume (vph)	0	6	1	65	0	38	6	911	71	32	1014	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	6.0	5.5		6.0	5.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1868			1805	1615	1787	3536		1787	3570	
Flt Permitted		1.00			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1868			1419	1615	1787	3536		1787	3570	
Peak-hour factor, PHF	0.42	0.42	0.42	0.76	0.76	0.76	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	0	14	2	86	0	50	7	1001	78	36	1127	8
RTOR Reduction (vph)	0	2	0	0	0	43	0	6	0	0	0	0
Lane Group Flow (vph)	0	14	0	0	86	8	7	1073	0	36	1135	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA	Prot	Prot	NA		Prot	NA	
Protected Phases		8			4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.6			7.6	7.6	0.8	34.5		2.4	36.1	
Effective Green, g (s)		9.6			9.6	9.6	0.8	36.5		2.4	38.1	
Actuated g/C Ratio		0.15			0.15	0.15	0.01	0.57		0.04	0.60	
Clearance Time (s)		6.0			6.0	6.0	6.0	7.5		6.0	7.5	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		280			212	242	22	2016		67	2125	
v/s Ratio Prot		0.01				0.00	0.00	0.30		c0.02	c0.32	
v/s Ratio Perm					c0.06							
v/c Ratio		0.05			0.41	0.03	0.32	0.53		0.54	0.53	
Uniform Delay, d1		23.3			24.6	23.2	31.3	8.5		30.3	7.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.3	0.1	8.2	0.3		8.1	0.3	
Delay (s)		23.4			25.9	23.3	39.5	8.8		38.3	7.9	
Level of Service		C			C	C	D	A		D	A	
Approach Delay (s/veh)		23.4			24.9			9.0			8.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

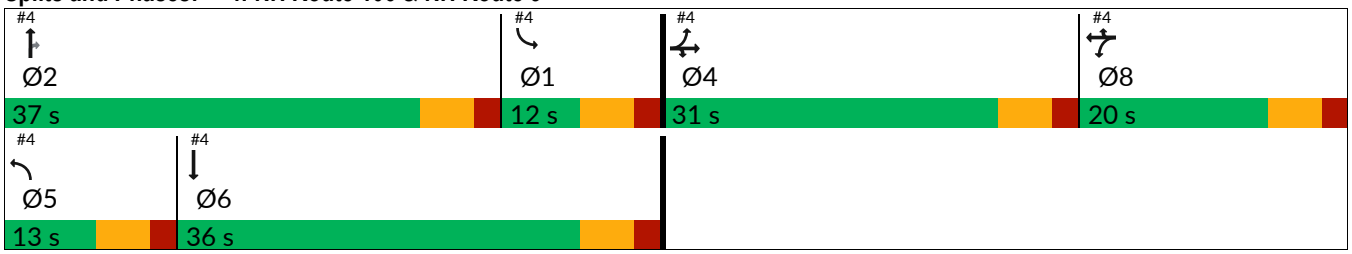


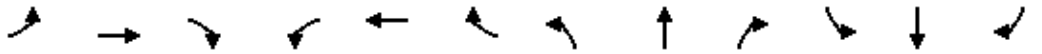
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Future Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Satd. Flow (RTOR)			229			229			444			773
Adj. Flow (vph)	840	396	76	447	431	37	79	762	444	59	927	952
Lane Group Flow (vph)	840	396	76	447	431	37	79	762	444	59	927	952
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	31.0	31.0	31.0	20.0	20.0	20.0	13.0	37.0	37.0	12.0	36.0	
Total Split (%)	31.0%	31.0%	31.0%	20.0%	20.0%	20.0%	13.0%	37.0%	37.0%	12.0%	36.0%	
Maximum Green (s)	25.0	25.0	25.0	14.0	14.0	14.0	7.0	31.0	31.0	6.0	30.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
v/c Ratio	0.89	0.77	0.13	0.80	0.74	0.08	0.50	0.68	0.56	0.39	0.84	0.53
Control Delay (s/veh)	46.9	44.7	0.4	51.3	48.1	0.4	54.8	32.3	5.4	51.7	39.1	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	44.7	0.4	51.3	48.1	0.4	54.8	32.3	5.4	51.7	39.1	1.1
Queue Length 50th (ft)	271	238	0	145	141	0	49	219	0	37	289	0
Queue Length 95th (ft)	#388	#387	0	#223	#209	0	98	286	69	79	371	0
Internal Link Dist (ft)		1472			1188			2106			411	
Turn Bay Length (ft)	1000		200	400		350	500		500			
Base Capacity (vph)	952	516	603	564	581	450	163	1201	826	153	1164	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.77	0.13	0.79	0.74	0.08	0.48	0.63	0.54	0.39	0.80	0.53

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 95.8
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 4: NH Route 106 & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Future Volume (vph)	806	380	73	402	388	33	74	716	417	54	853	876
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	16
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3351	1818	1546	3351	3455	1546	1728	3455	1546	1728	3455	1812
Peak-hour factor, PHF	0.96	0.96	0.96	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	840	396	76	447	431	37	79	762	444	59	927	952
RTOR Reduction (vph)	0	0	55	0	0	31	0	0	303	0	0	0
Lane Group Flow (vph)	840	396	21	447	431	6	79	762	141	59	927	952
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4	4	8	8	8	5	2		1	6	
Permitted Phases									2			Free
Actuated Green, G (s)	25.1	25.1	25.1	14.1	14.1	14.1	5.4	28.9	28.9	5.1	28.6	97.2
Effective Green, g (s)	27.1	27.1	27.1	16.1	16.1	16.1	7.4	30.9	30.9	7.1	30.6	97.2
Actuated g/C Ratio	0.28	0.28	0.28	0.17	0.17	0.17	0.08	0.32	0.32	0.07	0.31	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	934	506	431	555	572	256	131	1098	491	126	1087	1812
v/s Ratio Prot	c0.25	0.22	0.01	c0.13	0.12	0.00	0.05	c0.22		0.03	c0.27	
v/s Ratio Perm									0.09			0.53
v/c Ratio	0.90	0.78	0.05	0.81	0.75	0.02	0.60	0.69	0.29	0.47	0.85	0.53
Uniform Delay, d1	33.7	32.3	25.6	39.0	38.7	34.0	43.5	29.0	24.9	43.2	31.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	7.7	0.0	8.3	5.6	0.0	7.6	1.9	0.3	2.7	6.6	1.1
Delay (s)	45.1	40.1	25.7	47.4	44.2	34.0	51.1	30.9	25.2	46.0	37.8	1.1
Level of Service	D	D	C	D	D	C	D	C	C	D	D	A
Approach Delay (s/veh)		42.4			45.4			30.2			20.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	187	0	301	7	998	27	279	1213	9
Future Volume (vph)	5	0	10	187	0	301	7	998	27	279	1213	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.996			0.999	
Flt Protected		0.950		0.950			0.950			0.950		
Satd. Flow (prot)	0	1805	1615	1745	0	1669	1728	3441	0	1787	3571	0
Flt Permitted		0.950		0.435			0.950			0.950		
Satd. Flow (perm)	0	1805	1615	799	0	1669	1728	3441	0	1787	3571	0
Satd. Flow (RTOR)			229			338		3			1	
Adj. Flow (vph)	10	0	20	237	0	381	7	1062	29	303	1318	10
Lane Group Flow (vph)	0	10	20	237	0	381	7	1091	0	303	1328	0
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Detector Phase	4	4	4	3		3	5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0	6.0	10.0		6.0	10.0	
Minimum Split (s)	12.0	12.0	12.0	12.0		12.0	12.0	16.0		12.0	16.0	
Total Split (s)	12.0	12.0	12.0	19.0		19.0	12.0	42.0		27.0	57.0	
Total Split (%)	12.0%	12.0%	12.0%	19.0%		19.0%	12.0%	42.0%		27.0%	57.0%	
Maximum Green (s)	6.0	6.0	6.0	13.0		13.0	6.0	36.0		21.0	51.0	
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)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead		Lead	Lead	Lag		Lead	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	3.0		3.0	3.0	
Recall Mode	None	None	None	None		None	None	Min		None	Min	
v/c Ratio		0.06	0.06	0.69		0.59	0.04	0.81		0.73	0.58	
Control Delay (s/veh)		43.6	0.3	42.0		9.3	43.3	30.9		45.1	11.7	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		43.6	0.3	42.0		9.3	43.3	30.9		45.1	11.7	
Queue Length 50th (ft)		6	0	128		21	4	328		181	226	
Queue Length 95th (ft)		13	0	173		58	18	417		#299	398	
Internal Link Dist (ft)		210			308			1555			2106	
Turn Bay Length (ft)			50			125	400			600		
Base Capacity (vph)		169	358	364		668	162	1535		482	2419	
Starvation Cap Reductn		0	0	0		0	0	0		0	0	
Spillback Cap Reductn		0	0	0		0	0	0		0	0	
Storage Cap Reductn		0	0	0		0	0	0		0	0	
Reduced v/c Ratio		0.06	0.06	0.65		0.57	0.04	0.71		0.63	0.55	

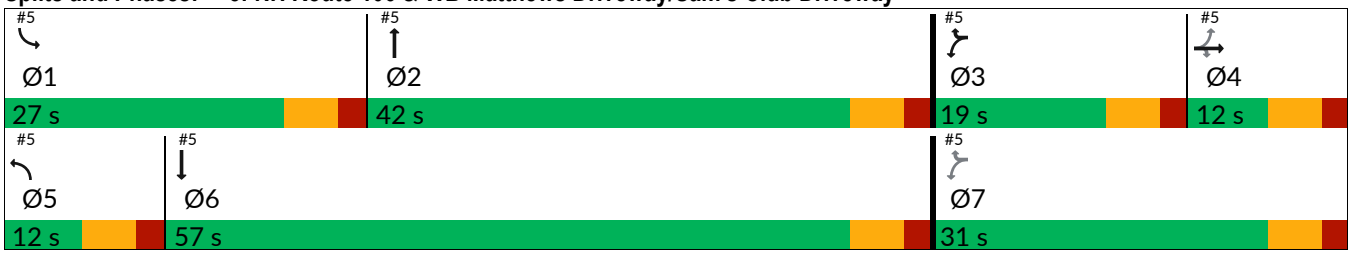
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 88.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	12.0
Total Split (s)	31.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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

Splits and Phases: 5: NH Route 106 & WB Matthews Driveway/Sam's Club Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	187	0	301	7	998	27	279	1213	9
Future Volume (vph)	5	0	10	187	0	301	7	998	27	279	1213	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	13	11	11	11	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00		1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00		0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00	0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615	1745		1669	1728	3441		1787	3570	
Flt Permitted		0.95	1.00	0.43		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1805	1615	799		1669	1728	3441		1787	3570	
Peak-hour factor, PHF	0.50	0.50	0.50	0.79	0.79	0.79	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	10	0	20	237	0	381	7	1062	29	303	1318	10
RTOR Reduction (vph)	0	0	19	0	0	255	0	2	0	0	0	0
Lane Group Flow (vph)	0	10	1	237	0	126	7	1089	0	303	1328	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm	pm+pt		custom	Prot	NA		Prot	NA	
Protected Phases		4		3		3	5	2		1	6	
Permitted Phases	4		4	7		7						
Actuated Green, G (s)		3.2	3.2	21.6		21.6	1.1	37.7		18.4	55.0	
Effective Green, g (s)		5.2	5.2	23.6		23.6	3.1	39.7		20.4	57.0	
Actuated g/C Ratio		0.05	0.05	0.25		0.25	0.03	0.41		0.21	0.60	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		98	87	339		411	55	1427		380	2126	
v/s Ratio Prot				c0.11		0.05	0.00	c0.32		c0.17	0.37	
v/s Ratio Perm		0.01	0.00	c0.07		0.03						
v/c Ratio		0.10	0.01	0.70		0.31	0.13	0.76		0.80	0.62	
Uniform Delay, d1		43.0	42.8	31.5		29.4	45.0	24.0		35.7	12.5	
Progression Factor		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1	6.2		0.4	1.0	2.5		11.1	0.6	
Delay (s)		43.5	42.9	37.7		29.8	46.0	26.5		46.8	13.0	
Level of Service		D	D	D		C	D	C		D	B	
Approach Delay (s/veh)		43.1			32.8			26.6			19.3	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

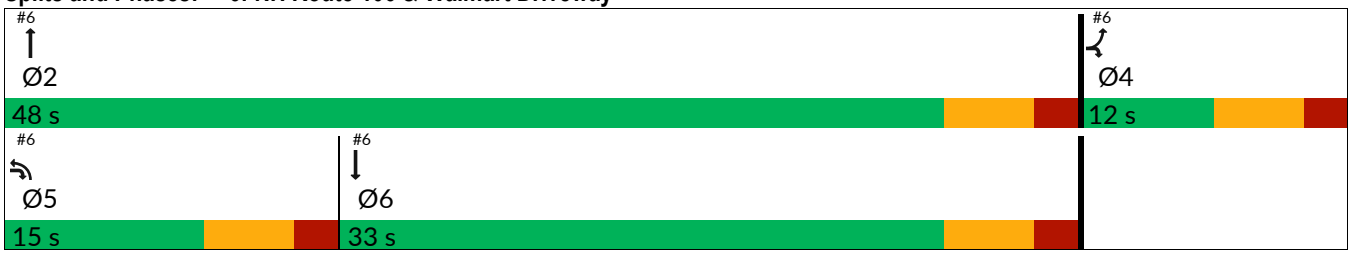
c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	223	215	1184	1240	197
Future Volume (vph)	82	223	215	1184	1240	197
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.979	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1865	1615	1668	3574	3499	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1865	1615	1668	3574	3499	0
Satd. Flow (RTOR)		28			41	
Adj. Flow (vph)	85	232	224	1233	1305	207
Lane Group Flow (vph)	85	232	224	1233	1512	0
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Detector Phase	4	4 5	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	12.0		15.0	48.0	33.0	
Total Split (%)	20.0%		25.0%	80.0%	55.0%	
Maximum Green (s)	6.0		9.0	42.0	27.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.34	0.37	0.74	0.47	0.88	
Control Delay (s/veh)	27.9	13.6	40.6	4.0	21.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.9	13.6	40.6	4.0	21.7	
Queue Length 50th (ft)	28	50	78	70	237	
Queue Length 95th (ft)	65	99	#174	96	#388	
Internal Link Dist (ft)	488			959	1555	
Turn Bay Length (ft)		100	400			
Base Capacity (vph)	248	637	305	2624	1714	
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	0.34	0.36	0.73	0.47	0.88	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 59.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

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

Splits and Phases: 6: NH Route 106 & Walmart Driveway



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	223	215	1184	1240	197
Future Volume (vph)	82	223	215	1184	1240	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	10	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1865	1615	1668	3574	3501	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1865	1615	1668	3574	3501	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.95	0.95
Adj. Flow (vph)	85	232	224	1233	1305	207
RTOR Reduction (vph)	0	17	0	0	21	0
Lane Group Flow (vph)	85	215	224	1233	1491	0
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	pt+ov	Prot	NA	NA	
Protected Phases	4	4 5	5	2	6	
Permitted Phases						
Actuated Green, G (s)	6.0	20.9	8.9	41.9	27.0	
Effective Green, g (s)	8.0	22.9	10.9	43.9	29.0	
Actuated g/C Ratio	0.13	0.38	0.18	0.73	0.48	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	249	617	303	2619	1694	
v/s Ratio Prot	0.05	c0.13	c0.13	0.34	c0.43	
v/s Ratio Perm						
v/c Ratio	0.34	0.35	0.74	0.47	0.88	
Uniform Delay, d1	23.6	13.2	23.2	3.3	13.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.3	9.1	0.1	5.7	
Delay (s)	24.4	13.5	32.3	3.4	19.6	
Level of Service	C	B	C	A	B	
Approach Delay (s/veh)	16.4			7.8	19.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	513	219	2	248	842	818	601
Future Volume (vph)	513	219	2	248	842	818	601
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	0.95
Frt	0.955					0.936	
Flt Protected	0.966			0.950			
Satd. Flow (prot)	3287	0	0	1745	3610	3266	0
Flt Permitted	0.966			0.154			
Satd. Flow (perm)	3287	0	0	283	3610	3266	0
Satd. Flow (RTOR)	121					349	
Adj. Flow (vph)	570	243	2	276	936	852	626
Lane Group Flow (vph)	813	0	0	278	936	1478	0
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Detector Phase	4		5	5	2	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	11.0	
Total Split (s)	23.0		11.0	11.0	37.0	26.0	
Total Split (%)	38.3%		18.3%	18.3%	61.7%	43.3%	
Maximum Green (s)	17.0		5.0	5.0	31.0	20.0	
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)	-2.0			-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0	
Lead/Lag			Lead	Lead		Lag	
Lead-Lag Optimize?			Yes	Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		None	None	C-Min	C-Min	
v/c Ratio	0.76			0.79	0.46	1.04	
Control Delay (s/veh)	21.3			29.4	8.7	39.6	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay (s/veh)	21.3			29.4	8.7	39.6	
Queue Length 50th (ft)	111			48	96	0	
Queue Length 95th (ft)	169			#168	137	m#360	
Internal Link Dist (ft)	493				1013	617	
Turn Bay Length (ft)				450			
Base Capacity (vph)	1123			354	2048	1422	
Starvation Cap Reductn	0			0	0	0	
Spillback Cap Reductn	0			0	0	0	
Storage Cap Reductn	0			0	0	0	
Reduced v/c Ratio	0.72			0.79	0.46	1.04	

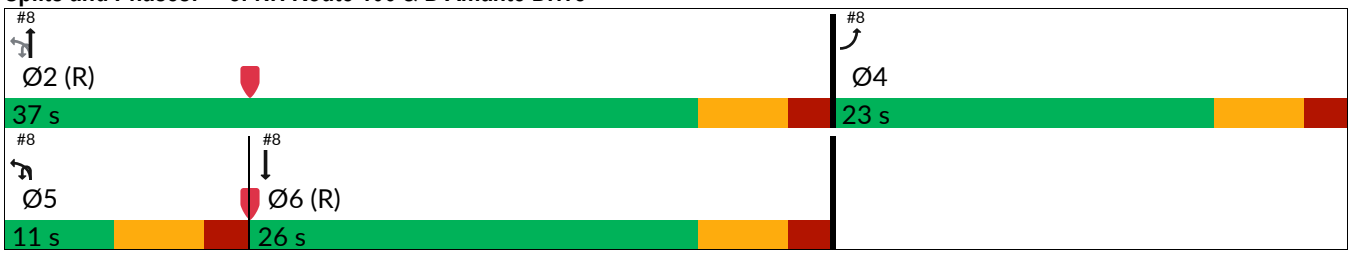
Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 29 (48%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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.

Splits and Phases: 8: NH Route 106 & D'Amante Drive



Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	513	219	2	248	842	818	601
Future Volume (vph)	513	219	2	248	842	818	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	12	11	12
Total Lost time (s)	4.0			4.0	4.0	4.0	
Lane Util. Factor	0.97			1.00	0.95	0.95	
Frt	0.96			1.00	1.00	0.94	
Flt Protected	0.97			0.95	1.00	1.00	
Satd. Flow (prot)	3288			1745	3610	3268	
Flt Permitted	0.97			0.15	1.00	1.00	
Satd. Flow (perm)	3288			283	3610	3268	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.96	0.96
Adj. Flow (vph)	570	243	2	276	936	852	626
RTOR Reduction (vph)	85	0	0	0	0	221	0
Lane Group Flow (vph)	728	0	0	278	936	1257	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot		pm+pt	pm+pt	NA	NA	
Protected Phases	4		5	5	2	6	
Permitted Phases			2	2			
Actuated Green, G (s)	16.0			32.0	32.0	20.0	
Effective Green, g (s)	18.0			34.0	34.0	22.0	
Actuated g/C Ratio	0.30			0.57	0.57	0.37	
Clearance Time (s)	6.0			6.0	6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	3.0	
Lane Grp Cap (vph)	986			355	2045	1198	
v/s Ratio Prot	c0.22			c0.10	0.26	c0.38	
v/s Ratio Perm				0.34			
v/c Ratio	0.74			0.78	0.46	1.05	
Uniform Delay, d1	18.9			11.5	7.6	19.0	
Progression Factor	1.00			1.00	1.00	0.37	
Incremental Delay, d2	2.9			10.8	0.7	34.4	
Delay (s)	21.8			22.2	8.3	41.5	
Level of Service	C			C	A	D	
Approach Delay (s/veh)	21.8				11.5	41.5	
Approach LOS	C				B	D	

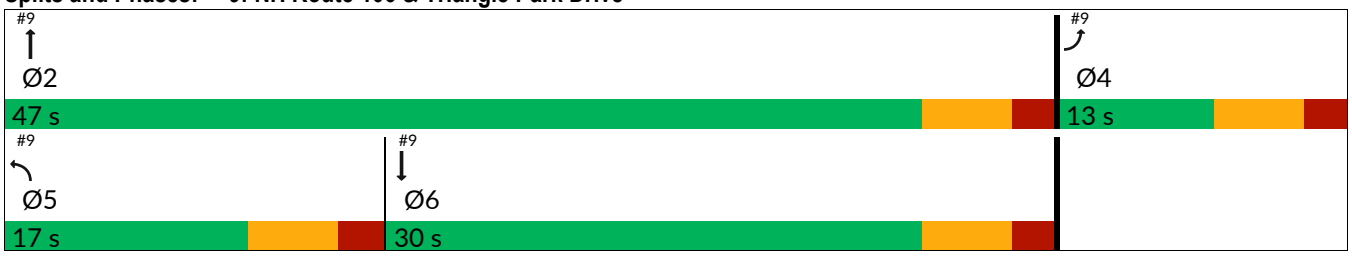
Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	170	218	1069	932	18
Future Volume (vph)	23	170	218	1069	932	18
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.881				0.997	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1886	0	1925	3610	3564	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1886	0	1925	3610	3564	0
Satd. Flow (RTOR)	189				4	
Adj. Flow (vph)	26	189	222	1091	1013	20
Lane Group Flow (vph)	215	0	222	1091	1033	0
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	10.0	10.0	
Minimum Split (s)	12.0		12.0	16.0	16.0	
Total Split (s)	13.0		17.0	47.0	30.0	
Total Split (%)	21.7%		28.3%	78.3%	50.0%	
Maximum Green (s)	7.0		11.0	41.0	24.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.48		0.54	0.43	0.69	
Control Delay (s/veh)	10.1		26.1	4.0	16.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	10.1		26.1	4.0	16.1	
Queue Length 50th (ft)	8		70	59	145	
Queue Length 95th (ft)	60		131	87	210	
Internal Link Dist (ft)	1073			1451	1013	
Turn Bay Length (ft)			150			
Base Capacity (vph)	462		447	2774	1658	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.47		0.50	0.39	0.62	

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 56.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

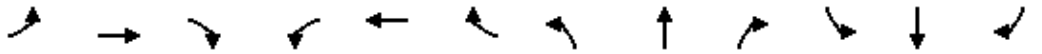
Splits and Phases: 9: NH Route 106 & Triangle Park Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	170	218	1069	932	18
Future Volume (vph)	23	170	218	1069	932	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.88		1.00	1.00	1.00	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1886		1925	3610	3564	
Flt Permitted	0.99		0.95	1.00	1.00	
Satd. Flow (perm)	1886		1925	3610	3564	
Peak-hour factor, PHF	0.90	0.90	0.98	0.98	0.92	0.92
Adj. Flow (vph)	26	189	222	1091	1013	20
RTOR Reduction (vph)	160	0	0	0	2	0
Lane Group Flow (vph)	55	0	222	1091	1031	0
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Turn Type	Prot		Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases						
Actuated Green, G (s)	6.5		10.0	37.8	21.8	
Effective Green, g (s)	8.5		12.0	39.8	23.8	
Actuated g/C Ratio	0.15		0.21	0.71	0.42	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	284		410	2552	1506	
v/s Ratio Prot	c0.03		c0.12	0.30	c0.29	
v/s Ratio Perm						
v/c Ratio	0.19		0.54	0.43	0.68	
Uniform Delay, d1	20.9		19.7	3.5	13.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.3		1.5	0.1	1.3	
Delay (s)	21.2		21.2	3.6	14.5	
Level of Service	C		C	A	B	
Approach Delay (s/veh)	21.2			6.6	14.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

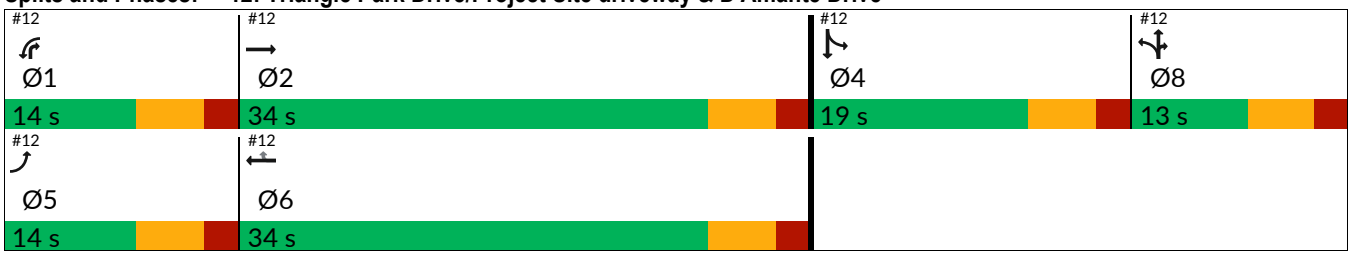


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Future Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.955				0.850			0.850		0.885	
Flt Protected	0.950			0.950				0.960		0.950	0.994	
Satd. Flow (prot)	1805	3333	0	1728	1881	1599	0	1824	1615	1681	1557	0
Flt Permitted	0.950			0.950				0.960		0.950	0.994	
Satd. Flow (perm)	1805	3333	0	1728	1881	1599	0	1824	1615	1681	1557	0
Satd. Flow (RTOR)		96				205			123		181	
Adj. Flow (vph)	189	459	198	102	579	174	137	28	62	282	29	186
Lane Group Flow (vph)	189	657	0	102	579	174	0	165	62	254	243	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Detector Phase	5	2		1	6	6	8	8	8 1	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	28.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Total Split (s)	14.0	34.0		14.0	34.0	34.0	13.0	13.0		19.0	19.0	
Total Split (%)	17.5%	42.5%		17.5%	42.5%	42.5%	16.3%	16.3%		23.8%	23.8%	
Maximum Green (s)	8.0	28.0		8.0	28.0	28.0	7.0	7.0		13.0	13.0	
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)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0		-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		4.0										
Flash Don't Walk (s)		18.0										
Pedestrian Calls (#/hr)		0										
v/c Ratio	0.81	0.47		0.48	0.85	0.25		0.78	0.11	0.80	0.55	
Control Delay (s/veh)	62.4	16.8		40.7	37.1	2.7		61.1	0.9	51.7	14.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	62.4	16.8		40.7	37.1	2.7		61.1	0.9	51.7	14.3	
Queue Length 50th (ft)	94	110		49	258	0		82	0	131	28	
Queue Length 95th (ft)	#205	158		97	#435	27		#183	4	#258	101	
Internal Link Dist (ft)		981			380			958			623	
Turn Bay Length (ft)	50			250					170	300		
Base Capacity (vph)	232	1400		222	727	743		211	565	325	447	
Starvation Cap Reductn	0	0		0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0	0	0	
Storage Cap Reductn	0	0		0	0	0		0	0	0	0	
Reduced v/c Ratio	0.81	0.47		0.46	0.80	0.23		0.78	0.11	0.78	0.54	

Intersection Summary
Cycle Length: 80

Actuated Cycle Length: 77.8
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Triangle Park Drive/Project Site driveway & D'Amante Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Future Volume (vph)	172	418	180	94	533	160	126	26	57	254	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	0.95	0.95	
Frt	1.00	0.95		1.00	1.00	0.85		1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (prot)	1805	3332		1728	1881	1599		1824	1615	1681	1557	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	0.99	
Satd. Flow (perm)	1805	3332		1728	1881	1599		1824	1615	1681	1557	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	189	459	198	102	579	174	137	28	62	282	29	186
RTOR Reduction (vph)	0	58	0	0	0	109	0	0	45	0	147	0
Lane Group Flow (vph)	189	599	0	102	579	65	0	165	17	254	96	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pt+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases						6						
Actuated Green, G (s)	8.0	29.1		6.2	27.3	27.3		7.0	19.2	12.7	12.7	
Effective Green, g (s)	10.0	31.1		8.2	29.3	29.3		9.0	21.2	14.7	14.7	
Actuated g/C Ratio	0.13	0.39		0.10	0.37	0.37		0.11	0.27	0.19	0.19	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	228	1311		179	697	593		207	433	312	289	
v/s Ratio Prot	c0.10	0.18		0.06	c0.31			c0.09	0.01	c0.15	0.06	
v/s Ratio Perm						0.04						
v/c Ratio	0.83	0.46		0.57	0.83	0.11		0.80	0.04	0.81	0.33	
Uniform Delay, d1	33.7	17.7		33.7	22.6	16.3		34.1	21.4	30.8	27.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.3	0.3		4.1	8.3	0.1		18.9	0.0	14.9	0.7	
Delay (s)	55.0	18.0		37.8	30.9	16.4		53.0	21.4	45.8	28.6	
Level of Service	D	B		D	C	B		D	C	D	C	
Approach Delay (s/veh)		26.2			28.8			44.3			37.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

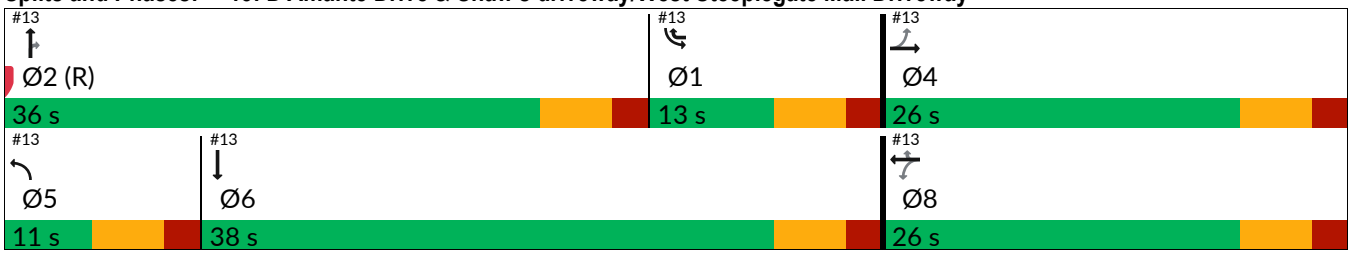
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Future Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt		0.947				0.850			0.850		0.989	
Flt Protected		0.969			0.950		0.950			0.950		
Satd. Flow (prot)	0	3313	0	0	1829	1636	1805	3490	1561	3385	3451	0
Flt Permitted		0.673			0.636		0.950			0.950		
Satd. Flow (perm)	0	2301	0	0	1224	1636	1805	3490	1561	3385	3451	0
Satd. Flow (RTOR)		218				131			131		14	
Adj. Flow (vph)	118	0	65	179	0	180	51	870	131	219	736	58
Lane Group Flow (vph)	0	183	0	0	179	180	51	870	131	219	794	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8			2			
Detector Phase	4	4		8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	26.0	26.0		26.0	26.0	13.0	11.0	36.0	36.0	13.0	38.0	
Total Split (%)	34.7%	34.7%		34.7%	34.7%	17.3%	14.7%	48.0%	48.0%	17.3%	50.7%	
Maximum Green (s)	20.0	20.0		20.0	20.0	7.0	5.0	30.0	30.0	7.0	32.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	Min	
v/c Ratio		0.26			0.63	0.23	0.26	0.53	0.16	0.48	0.41	
Control Delay (s/veh)		3.4			35.3	4.9	34.7	16.2	3.3	39.0	15.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		3.4			35.3	4.9	34.7	16.3	3.3	39.0	15.9	
Queue Length 50th (ft)		0			75	12	22	153	0	52	157	
Queue Length 95th (ft)		m7			131	45	55	212	29	m80	223	
Internal Link Dist (ft)		330			171			981			304	
Turn Bay Length (ft)						45	130			150		
Base Capacity (vph)		829			359	766	194	1645	805	460	1949	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		1			0	1	0	29	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.22			0.50	0.24	0.26	0.54	0.16	0.48	0.41	

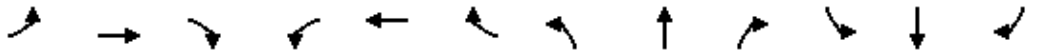
Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 1 (1%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 13: D'Amante Drive & Shaw's driveway/West Steeplegate Mall Driveway

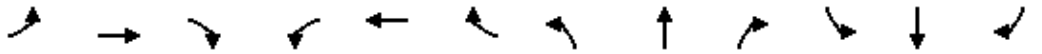




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Future Volume (vph)	97	0	53	161	0	162	46	783	118	208	699	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	12	11	11	11	11	11
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3311			1829	1636	1805	3490	1561	3385	3451	
Flt Permitted		0.67			0.64	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		2299			1225	1636	1805	3490	1561	3385	3451	
Peak-hour factor, PHF	0.82	0.82	0.82	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.95	0.95
Adj. Flow (vph)	118	0	65	179	0	180	51	870	131	219	736	58
RTOR Reduction (vph)	0	141	0	0	0	79	0	0	73	0	7	0
Lane Group Flow (vph)	0	42	0	0	179	101	51	870	58	219	787	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)		15.4			15.4	25.9	3.7	31.1	31.1	10.5	37.9	
Effective Green, g (s)		17.4			17.4	29.9	5.7	33.1	33.1	12.5	39.9	
Actuated g/C Ratio		0.23			0.23	0.40	0.08	0.44	0.44	0.17	0.53	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		533			284	739	137	1540	688	564	1835	
v/s Ratio Prot						0.02	0.03	c0.25		0.06	c0.23	
v/s Ratio Perm		0.02			c0.15	0.04			0.04			
v/c Ratio		0.08			0.63	0.14	0.37	0.56	0.08	0.39	0.43	
Uniform Delay, d1		22.5			25.9	14.3	32.9	15.6	12.2	27.8	10.6	
Progression Factor		1.19			1.00	1.00	1.00	1.00	1.00	1.20	1.37	
Incremental Delay, d2		0.1			4.5	0.1	1.7	1.5	0.2	0.3	0.1	
Delay (s)		26.9			30.4	14.4	34.7	17.1	12.4	33.6	14.7	
Level of Service		C			C	B	C	B	B	C	B	
Approach Delay (s/veh)		26.9			22.4			17.4			18.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Future Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.993	
Flt Protected		0.991		0.950	0.961		0.950			0.950		
Satd. Flow (prot)	0	1820	1561	1658	1735	1507	1787	3455	1599	3502	3465	0
Flt Permitted		0.991		0.950	0.961		0.950			0.950		
Satd. Flow (perm)	0	1820	1561	1658	1735	1507	1787	3455	1599	3502	3465	0
Satd. Flow (RTOR)			131			187			236		6	
Adj. Flow (vph)	16	69	117	855	84	187	96	932	798	210	1011	48
Lane Group Flow (vph)	0	85	117	470	469	187	96	932	798	210	1059	0
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4	5	8	8	1	5	2	8	1	6	
Permitted Phases			4			8			2			
Detector Phase	4	4	5	8	8	1	5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	11.0	11.0	11.0	28.0	28.0	11.0	11.0	25.0	28.0	11.0	25.0	
Total Split (%)	14.7%	14.7%	14.7%	37.3%	37.3%	14.7%	14.7%	33.3%	37.3%	14.7%	33.3%	
Maximum Green (s)	5.0	5.0	5.0	22.0	22.0	5.0	5.0	19.0	22.0	5.0	19.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Min	C-Min	None	None	None	C-Min	None	None	
v/c Ratio		0.50	0.27	0.85	0.81	0.24	0.56	0.93	0.69	0.61	0.94	
Control Delay (s/veh)		43.3	5.7	32.7	28.5	1.8	46.8	43.7	9.2	31.3	40.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		43.3	5.7	32.7	28.5	1.8	46.8	43.7	9.2	31.3	40.0	
Queue Length 50th (ft)		38	0	84	83	0	44	225	138	50	~307	
Queue Length 95th (ft)		#82	32	#371	#357	28	#103	#350	267	#78	#423	
Internal Link Dist (ft)		532			304			448			652	
Turn Bay Length (ft)			300				175			280		
Base Capacity (vph)		169	436	552	578	771	171	1003	1158	347	1132	
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.50	0.27	0.85	0.81	0.24	0.56	0.93	0.69	0.61	0.94	

Intersection Summary

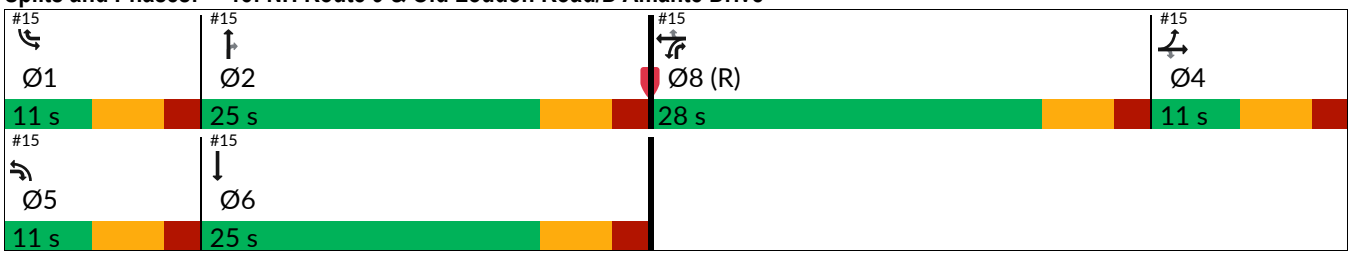
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 90

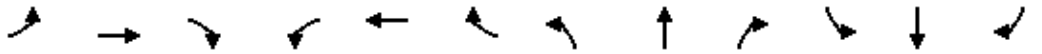
Control Type: Actuated-Coordinated

~ 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: 15: NH Route 9 & Old Loudon Road/D'Amante Drive

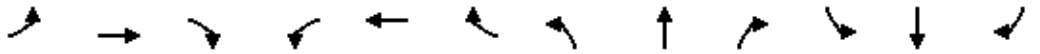




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Future Volume (vph)	14	62	105	795	78	174	89	867	742	189	910	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	10	12	11	12	12	11	12
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1820	1561	1658	1734	1507	1787	3455	1599	3502	3466	
Flt Permitted		0.99	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1820	1561	1658	1734	1507	1787	3455	1599	3502	3466	
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	16	69	117	855	84	187	96	932	798	210	1011	48
RTOR Reduction (vph)	0	0	98	0	0	112	0	0	93	0	4	0
Lane Group Flow (vph)	0	85	19	470	469	75	96	932	705	210	1055	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4	5	8	8	1	5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		4.0	8.0	20.6	20.6	26.0	4.0	21.0	41.6	5.4	22.4	
Effective Green, g (s)		6.0	12.0	22.6	22.6	30.0	6.0	23.0	45.6	7.4	24.4	
Actuated g/C Ratio		0.08	0.16	0.30	0.30	0.40	0.08	0.31	0.61	0.10	0.33	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		145	333	499	522	602	142	1059	1057	345	1127	
v/s Ratio Prot		c0.05	0.00	c0.28	0.27	0.01	0.05	0.27	0.20	c0.06	c0.30	
v/s Ratio Perm			0.01			0.04			0.24			
v/c Ratio		0.59	0.06	0.94	0.90	0.12	0.68	0.88	0.67	0.61	0.94	
Uniform Delay, d1		33.3	26.7	25.6	25.1	14.2	33.6	24.7	9.7	32.4	24.5	
Progression Factor		1.00	1.00	0.67	0.67	0.78	1.00	1.00	1.00	0.74	0.91	
Incremental Delay, d2		5.9	0.1	26.4	19.4	0.1	12.0	8.7	1.6	2.5	12.2	
Delay (s)		39.2	26.8	43.4	36.2	11.2	45.6	33.4	11.3	26.6	34.5	
Level of Service		D	C	D	D	B	D	C	B	C	C	
Approach Delay (s/veh)		32.0			35.1			24.4			33.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Future Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.97	0.95	0.95
Frt			0.850			0.850		0.974			0.987	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1829	1636	1847	3365	0	3467	3410	0
Flt Permitted		0.514			0.691		0.950			0.950		
Satd. Flow (perm)	0	977	1615	0	1330	1636	1847	3365	0	3467	3410	0
Satd. Flow (RTOR)			131			44		35			17	
Adj. Flow (vph)	102	0	121	199	0	378	105	875	180	393	946	87
Lane Group Flow (vph)	0	102	121	0	199	378	105	1055	0	393	1033	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	5	8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0	11.0	24.0	24.0	11.0	11.0	24.0		11.0	24.0	
Total Split (s)	24.0	24.0	13.0	24.0	24.0	22.0	13.0	29.0		22.0	38.0	
Total Split (%)	32.0%	32.0%	17.3%	32.0%	32.0%	29.3%	17.3%	38.7%		29.3%	50.7%	
Maximum Green (s)	18.0	18.0	7.0	18.0	18.0	16.0	7.0	23.0		16.0	32.0	
Yellow Time (s)	4.0	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	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
v/c Ratio		0.46	0.17		0.66	0.46	0.46	0.77		0.54	0.62	
Control Delay (s/veh)		31.2	2.9		36.8	12.0	42.3	21.8		27.2	14.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.2	
Total Delay (s/veh)		31.2	2.9		36.8	12.0	42.3	21.8		27.2	14.4	
Queue Length 50th (ft)		40	0		84	90	38	260		58	192	
Queue Length 95th (ft)		83	24		148	139	m48	m#314		103	90	
Internal Link Dist (ft)		173			172			652			266	
Turn Bay Length (ft)			50			130	180			140		
Base Capacity (vph)		260	736		354	873	235	1376		832	1671	
Starvation Cap Reductn		0	0		0	0	0	0		0	136	
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		0.39	0.16		0.56	0.43	0.45	0.77		0.47	0.67	

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 12 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Green

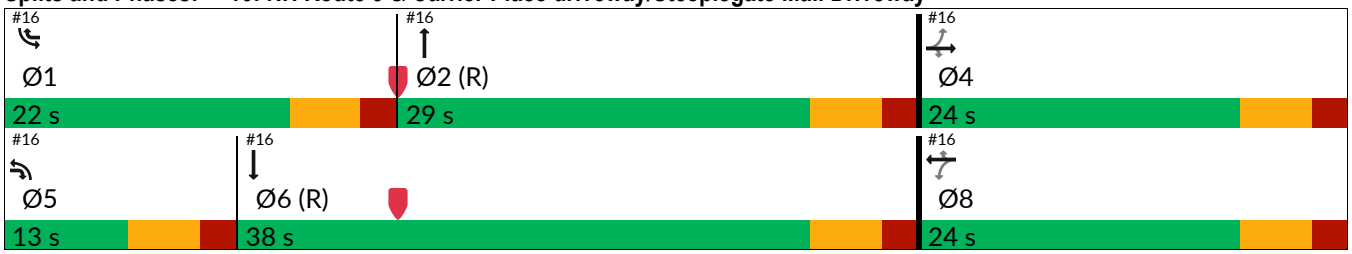
Natural Cycle: 60

Control Type: Actuated-Coordinated

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.

Splits and Phases: 16: NH Route 9 & Carrier Place driveway/Steeplegate Mall Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Future Volume (vph)	92	0	109	179	0	340	96	796	164	354	851	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	13	13	13	13	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		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)		1805	1615		1829	1636	1847	3367		3467	3411	
Flt Permitted		0.51	1.00		0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		977	1615		1330	1636	1847	3367		3467	3411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	102	0	121	199	0	378	105	875	180	393	946	87
RTOR Reduction (vph)	0	0	78	0	0	25	0	21	0	0	9	0
Lane Group Flow (vph)	0	102	43	0	199	353	105	1034	0	393	1024	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		15.1	22.5		15.1	28.8	7.4	28.2		13.7	34.5	
Effective Green, g (s)		17.1	26.5		17.1	32.8	9.4	30.2		15.7	36.5	
Actuated g/C Ratio		0.23	0.35		0.23	0.44	0.13	0.40		0.21	0.49	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		222	656		303	802	231	1355		725	1660	
v/s Ratio Prot			0.01			0.09	0.06	c0.31		c0.11	0.30	
v/s Ratio Perm		0.10	0.02		c0.15	0.12						
v/c Ratio		0.46	0.07		0.66	0.44	0.45	0.76		0.54	0.62	
Uniform Delay, d1		25.0	16.1		26.3	14.7	30.4	19.3		26.4	14.1	
Progression Factor		1.00	1.00		1.00	1.00	1.24	0.89		0.94	0.85	
Incremental Delay, d2		1.5	0.0		5.1	0.4	0.8	2.4		0.7	1.6	
Delay (s)		26.5	16.1		31.3	15.1	38.6	19.6		25.7	13.6	
Level of Service		C	B		C	B	D	B		C	B	
Approach Delay (s/veh)		20.8			20.7			21.4			16.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

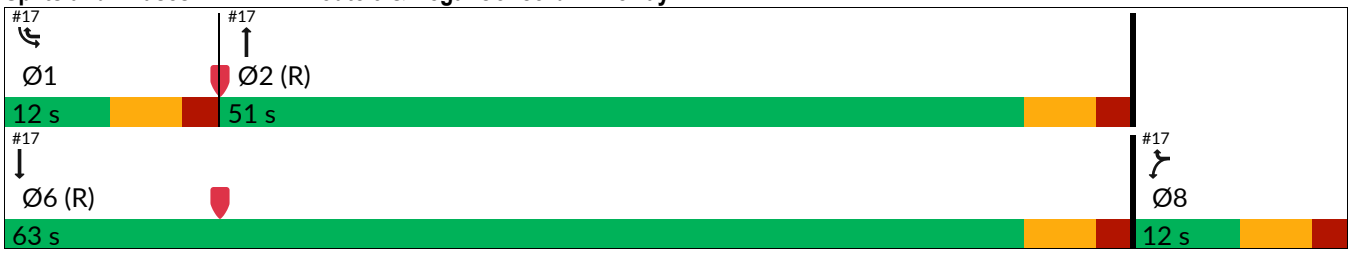
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	45	1187	30	50	1240
Future Volume (vph)	43	45	1187	30	50	1240
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	2006	1794	3441	0	1805	3490
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	2006	1794	3441	0	1805	3490
Satd. Flow (RTOR)		50	6			
Adj. Flow (vph)	48	50	1276	32	56	1378
Lane Group Flow (vph)	48	50	1308	0	56	1378
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Detector Phase	8	8 1	2		1	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		6.0	10.0
Minimum Split (s)	12.0		16.0		12.0	16.0
Total Split (s)	12.0		51.0		12.0	63.0
Total Split (%)	16.0%		68.0%		16.0%	84.0%
Maximum Green (s)	6.0		45.0		6.0	57.0
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0		-2.0	-2.0
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Min		None	C-Min
v/c Ratio	0.21	0.10	0.55		0.28	0.48
Control Delay (s/veh)	32.6	7.3	6.0		34.5	3.4
Queue Delay	0.0	0.0	0.1		0.0	0.0
Total Delay (s/veh)	32.6	7.3	6.2		34.5	3.4
Queue Length 50th (ft)	21	0	132		24	93
Queue Length 95th (ft)	52	24	133		58	111
Internal Link Dist (ft)	358		266			887
Turn Bay Length (ft)					360	
Base Capacity (vph)	230	484	2415		203	2894
Starvation Cap Reductn	0	0	286		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.21	0.10	0.61		0.28	0.48

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

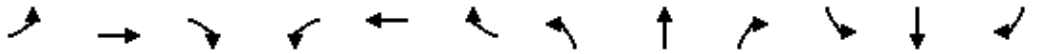
Splits and Phases: 17: NH Route 9 & Regal Concord Driveway



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	45	1187	30	50	1240
Future Volume (vph)	43	45	1187	30	50	1240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	12	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2006	1794	3442		1805	3490
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	2006	1794	3442		1805	3490
Peak-hour factor, PHF	0.90	0.90	0.93	0.93	0.90	0.90
Adj. Flow (vph)	48	50	1276	32	56	1378
RTOR Reduction (vph)	0	38	2	0	0	0
Lane Group Flow (vph)	48	12	1306	0	56	1378
Heavy Vehicles (%)	2%	2%	1%	1%	0%	0%
Turn Type	Prot	pt+ov	NA		Prot	NA
Protected Phases	8	8 1	2		1	6
Permitted Phases						
Actuated Green, G (s)	5.4	16.7	46.3		5.3	57.6
Effective Green, g (s)	7.4	18.7	48.3		7.3	59.6
Actuated g/C Ratio	0.10	0.25	0.64		0.10	0.79
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	197	447	2216		175	2773
v/s Ratio Prot	c0.02	0.01	c0.38		0.03	c0.39
v/s Ratio Perm						
v/c Ratio	0.24	0.03	0.59		0.32	0.50
Uniform Delay, d1	31.2	21.3	7.7		31.5	2.6
Progression Factor	1.00	1.00	0.65		1.00	1.00
Incremental Delay, d2	0.6	0.0	0.9		1.1	0.6
Delay (s)	31.9	21.3	5.9		32.6	3.3
Level of Service	C	C	A		C	A
Approach Delay (s/veh)	26.5		5.9			4.4
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



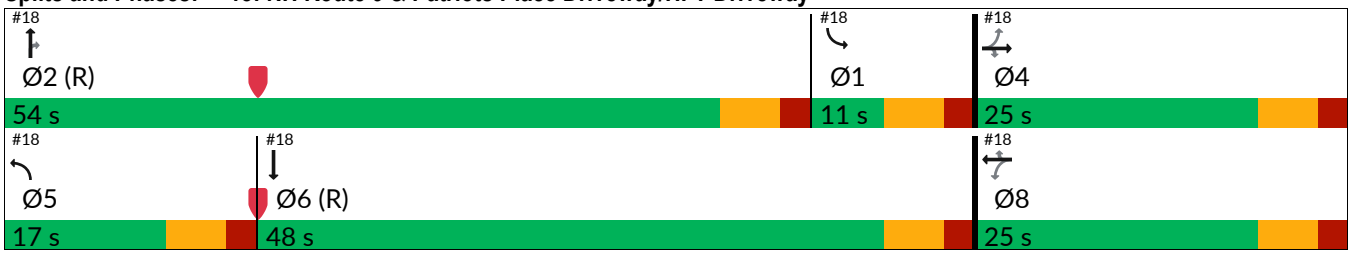
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Future Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.994	
Flt Protected		0.963			0.956		0.950			0.950		
Satd. Flow (prot)	0	1830	1615	0	1816	1615	1805	3490	1561	1787	3434	0
Flt Permitted		0.642			0.692		0.950			0.950		
Satd. Flow (perm)	0	1220	1615	0	1315	1615	1805	3490	1561	1787	3434	0
Satd. Flow (RTOR)			182			182			109		6	
Adj. Flow (vph)	57	17	150	131	13	27	100	1206	66	22	1189	47
Lane Group Flow (vph)	0	74	150	0	144	27	100	1206	66	22	1236	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	17.0	54.0	54.0	11.0	48.0	
Total Split (%)	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	18.9%	60.0%	60.0%	12.2%	53.3%	
Maximum Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	11.0	48.0	48.0	5.0	42.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.33	0.34		0.60	0.06	0.43	0.51	0.06	0.14	0.62	
Control Delay (s/veh)		34.6	4.8		43.5	0.3	41.5	10.2	0.7	30.1	10.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		34.6	4.8		43.5	0.3	41.5	10.2	0.7	30.1	10.3	
Queue Length 50th (ft)		37	0		75	0	53	127	0	8	112	
Queue Length 95th (ft)		68	23		98	0	101	294	7	m18	184	
Internal Link Dist (ft)		290			230			887			814	
Turn Bay Length (ft)						55	360		150	360		
Base Capacity (vph)		284	516		306	516	264	2357	1089	161	1997	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.26	0.29		0.47	0.05	0.38	0.51	0.06	0.14	0.62	

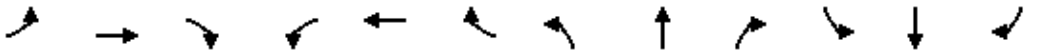
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60

Control Type: Actuated-Coordinated

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

Splits and Phases: 18: NH Route 9 & Patriots Place Driveway/HFT Driveway

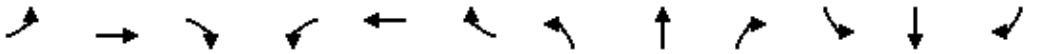




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Future Volume (vph)	48	14	126	93	9	19	90	1085	59	20	1070	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	12	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1830	1615		1817	1615	1805	3490	1561	1787	3435	
Flt Permitted		0.64	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1219	1615		1316	1615	1805	3490	1561	1787	3435	
Peak-hour factor, PHF	0.84	0.84	0.84	0.71	0.71	0.71	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	17	150	131	13	27	100	1206	66	22	1189	47
RTOR Reduction (vph)	0	0	123	0	0	22	0	0	24	0	3	0
Lane Group Flow (vph)	0	74	28	0	144	5	100	1206	42	22	1233	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		14.5	14.5		14.5	14.5	8.4	54.9	54.9	2.6	49.1	
Effective Green, g (s)		16.5	16.5		16.5	16.5	10.4	56.9	56.9	4.6	51.1	
Actuated g/C Ratio		0.18	0.18		0.18	0.18	0.12	0.63	0.63	0.05	0.57	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		223	296		241	296	208	2206	986	91	1950	
v/s Ratio Prot							0.06	c0.35		0.01	c0.36	
v/s Ratio Perm		0.06	0.02		c0.11	0.00			0.03			
v/c Ratio		0.33	0.09		0.60	0.02	0.48	0.55	0.04	0.24	0.63	
Uniform Delay, d1		32.0	30.5		33.7	30.1	37.3	9.3	6.3	41.0	13.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.75	0.62	
Incremental Delay, d2		0.9	0.1		3.9	0.0	1.7	1.0	0.1	1.2	1.3	
Delay (s)		32.8	30.7		37.7	30.1	39.0	10.3	6.3	32.0	9.4	
Level of Service		C	C		D	C	D	B	A	C	A	
Approach Delay (s/veh)		31.4			36.5			12.2			9.8	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



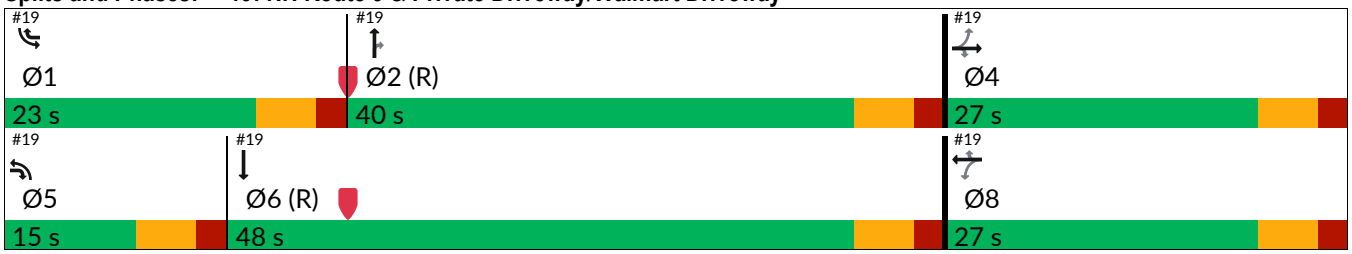
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Future Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.992	
Flt Protected		0.959			0.965		0.950			0.950		
Satd. Flow (prot)	0	1822	1615	0	1772	1546	1805	3455	1615	1685	3462	0
Flt Permitted		0.551			0.694		0.950			0.950		
Satd. Flow (perm)	0	1047	1615	0	1275	1546	1805	3455	1615	1685	3462	0
Satd. Flow (RTOR)			109			51			182		9	
Adj. Flow (vph)	91	16	108	112	42	185	84	912	24	160	1056	58
Lane Group Flow (vph)	0	107	108	0	154	185	84	912	24	160	1114	0
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Detector Phase	4	4	5	8	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Total Split (s)	27.0	27.0	15.0	27.0	27.0	23.0	15.0	40.0	40.0	23.0	48.0	
Total Split (%)	30.0%	30.0%	16.7%	30.0%	30.0%	25.6%	16.7%	44.4%	44.4%	25.6%	53.3%	
Maximum Green (s)	21.0	21.0	9.0	21.0	21.0	17.0	9.0	34.0	34.0	17.0	42.0	
Yellow Time (s)	4.0	4.0	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	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead			Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
v/c Ratio		0.53	0.17		0.62	0.28	0.39	0.53	0.03	0.56	0.58	
Control Delay (s/veh)		41.1	4.0		43.8	12.1	51.8	9.7	0.0	41.4	15.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)		41.1	4.0		43.8	12.1	51.8	9.7	0.0	41.4	15.7	
Queue Length 50th (ft)		55	0		81	48	50	95	0	84	210	
Queue Length 95th (ft)		86	21		124	70	99	116	m0	141	307	
Internal Link Dist (ft)		149			331			814			1735	
Turn Bay Length (ft)						100	175			360		
Base Capacity (vph)		267	660		325	723	230	1736	902	355	1922	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.40	0.16		0.47	0.26	0.37	0.53	0.03	0.45	0.58	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 23 (26%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55

Control Type: Actuated-Coordinated

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

Splits and Phases: 19: NH Route 9 & Private Driveway/Walmart Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Future Volume (vph)	72	13	85	94	35	155	78	848	22	144	950	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	11	11	12	11	12	10	11	11
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1823	1615		1772	1546	1805	3455	1615	1685	3462	
Flt Permitted		0.55	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1047	1615		1274	1546	1805	3455	1615	1685	3462	
Peak-hour factor, PHF	0.79	0.79	0.79	0.84	0.84	0.84	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	91	16	108	112	42	185	84	912	24	160	1056	58
RTOR Reduction (vph)	0	0	74	0	0	32	0	0	12	0	4	0
Lane Group Flow (vph)	0	107	34	0	154	153	84	912	12	160	1110	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases		4	5		8	1	5	2		1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)		15.5	24.2		15.5	28.8	8.7	43.2	43.2	13.3	47.8	
Effective Green, g (s)		17.5	28.2		17.5	32.8	10.7	45.2	45.2	15.3	49.8	
Actuated g/C Ratio		0.19	0.31		0.19	0.36	0.12	0.50	0.50	0.17	0.55	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		203	577		247	632	214	1735	811	286	1915	
v/s Ratio Prot			0.01			0.04	0.05	0.26		c0.09	c0.32	
v/s Ratio Perm		0.10	0.01		c0.12	0.06			0.01			
v/c Ratio		0.53	0.06		0.62	0.24	0.39	0.53	0.01	0.56	0.58	
Uniform Delay, d1		32.5	21.6		33.2	19.9	36.6	15.1	11.2	34.3	13.2	
Progression Factor		1.00	1.00		1.00	1.00	1.29	0.51	1.00	1.00	1.00	
Incremental Delay, d2		2.5	0.0		4.8	0.2	1.1	1.0	0.0	2.4	1.3	
Delay (s)		35.0	21.7		38.1	20.1	48.2	8.8	11.3	36.6	14.5	
Level of Service		C	C		D	C	D	A	B	D	B	
Approach Delay (s/veh)		28.3			28.3			12.1			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

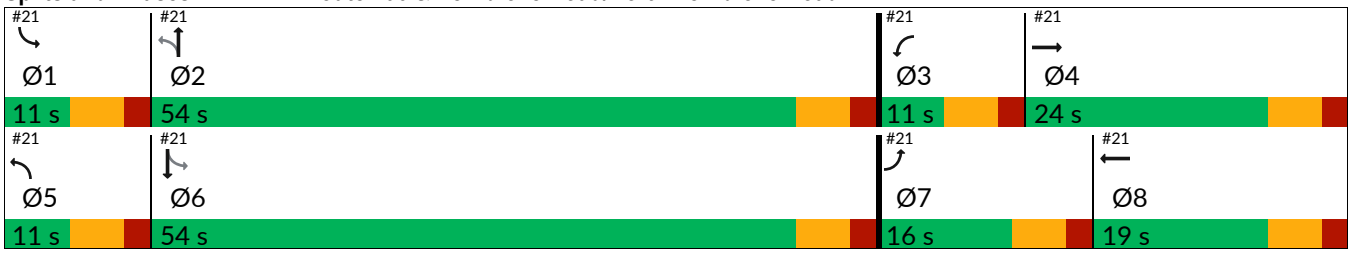
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Future Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.894			0.888			0.997			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1699	0	1770	1489	0	1847	3564	0	1847	3492	0
Flt Permitted	0.950			0.950			0.150			0.170		
Satd. Flow (perm)	3502	1699	0	1770	1489	0	292	3564	0	330	3492	0
Satd. Flow (RTOR)		67			90			3			30	
Adj. Flow (vph)	189	28	67	10	31	90	53	973	18	74	928	170
Lane Group Flow (vph)	189	95	0	10	121	0	53	991	0	74	1098	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	16.0		11.0	16.0	
Total Split (s)	16.0	24.0		11.0	19.0		11.0	54.0		11.0	54.0	
Total Split (%)	16.0%	24.0%		11.0%	19.0%		11.0%	54.0%		11.0%	54.0%	
Maximum Green (s)	10.0	18.0		5.0	13.0		5.0	48.0		5.0	48.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
v/c Ratio	0.34	0.18		0.05	0.42		0.17	0.59		0.22	0.61	
Control Delay (s/veh)	35.9	12.7		40.8	18.5		8.8	17.4		9.2	16.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	35.9	12.7		40.8	18.5		8.8	17.4		9.2	16.5	
Queue Length 50th (ft)	43	10		5	14		10	191		15	216	
Queue Length 95th (ft)	93	58		23	71		28	282		36	320	
Internal Link Dist (ft)		1376			1175			1848			1451	
Turn Bay Length (ft)	300			75			200			250		
Base Capacity (vph)	627	612		184	403		321	2462		341	2420	
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	0.30	0.16		0.05	0.30		0.17	0.40		0.22	0.45	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 74.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

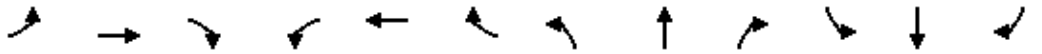
Splits and Phases: 21: NH Route 106 & Pembroke Road/North Pembroke Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Future Volume (vph)	170	25	60	9	28	81	48	876	16	67	835	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	13	12	12	13	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89		1.00	0.89		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3502	1699		1770	1489		1847	3565		1847	3491	
Flt Permitted	0.95	1.00		0.95	1.00		0.15	1.00		0.17	1.00	
Satd. Flow (perm)	3502	1699		1770	1489		292	3565		331	3491	
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)	189	28	67	10	31	90	53	973	18	74	928	170
RTOR Reduction (vph)	0	50	0	0	77	0	0	2	0	0	16	0
Lane Group Flow (vph)	189	45	0	10	44	0	53	989	0	74	1082	0
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2			6		
Actuated Green, G (s)	9.4	18.3		0.7	9.6		36.9	34.4		39.3	35.6	
Effective Green, g (s)	11.4	20.3		2.7	11.6		40.9	36.4		43.3	37.6	
Actuated g/C Ratio	0.14	0.25		0.03	0.14		0.50	0.45		0.53	0.46	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	492	425		58	212		233	1600		283	1618	
v/s Ratio Prot	c0.05	0.03		0.01	c0.03		0.01	0.28		c0.02	c0.31	
v/s Ratio Perm							0.10			0.12		
v/c Ratio	0.38	0.11		0.17	0.21		0.23	0.62		0.26	0.67	
Uniform Delay, d1	31.7	23.4		38.1	30.7		11.9	17.1		10.9	16.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.4	0.5		0.5	0.7		0.5	1.1	
Delay (s)	32.2	23.5		39.5	31.2		12.4	17.8		11.4	18.0	
Level of Service	C	C		D	C		B	B		B	B	
Approach Delay (s/veh)		29.3			31.8			17.5			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Future Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.867			0.962				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	1592	0	1805	2072	0	1745	1837	1615	1881	1818	1546
Flt Permitted	0.588						0.188					
Satd. Flow (perm)	1117	1592	0	1900	2072	0	345	1837	1615	1881	1818	1546
Satd. Flow (RTOR)		48			2				120			329
Adj. Flow (vph)	364	6	48	2	6	2	31	658	1	0	673	329
Lane Group Flow (vph)	364	54	0	2	8	0	31	658	1	0	673	329
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		8	8		5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	18.0	29.0		11.0	11.0		11.0	51.0	51.0	40.0	40.0	40.0
Total Split (%)	18.0%	29.0%		11.0%	11.0%		11.0%	51.0%	51.0%	40.0%	40.0%	40.0%
Maximum Green (s)	12.0	23.0		5.0	5.0		5.0	45.0	45.0	34.0	34.0	34.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min	Min	Min	Min	Min
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.85	0.13		0.01	0.03		0.08	0.57	0.00		0.65	0.32
Control Delay (s/veh)	44.7	8.6		31.0	27.8		5.8	10.0	0.0		16.3	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	44.7	8.6		31.0	27.8		5.8	10.0	0.0		16.3	2.5
Queue Length 50th (ft)	120	2		1	2		4	114	0		120	0
Queue Length 95th (ft)	#282	26		4	9		16	295	0		#483	43
Internal Link Dist (ft)		876			999			5865			1848	
Turn Bay Length (ft)	365			50			315		230			315
Base Capacity (vph)	428	655		209	230		370	1359	1226		1030	1018
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.85	0.08		0.01	0.03		0.08	0.48	0.00		0.65	0.32

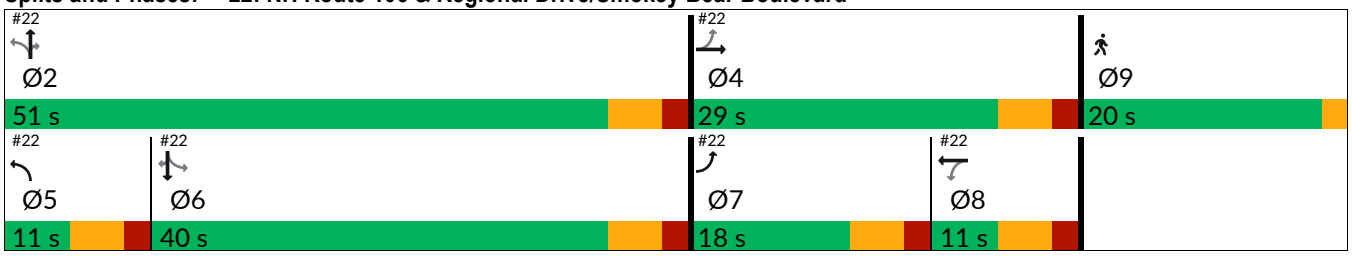
Intersection Summary
Cycle Length: 100

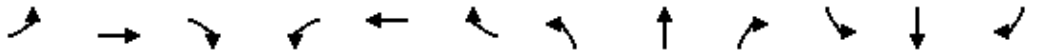
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	20%
Maximum Green (s)	18.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	13.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 64.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: NH Route 106 & Regional Drive/Smokey Bear Boulevard

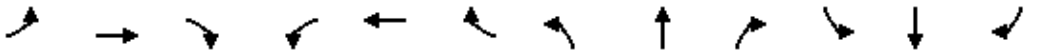




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Future Volume (vph)	328	5	43	1	3	1	28	599	1	0	606	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	16	16	11	11	12	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.87		1.00	0.96		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805	1592		1805	2073		1745	1837	1615		1818	1546
Flt Permitted	0.59	1.00		1.00	1.00		0.19	1.00	1.00		1.00	1.00
Satd. Flow (perm)	1118	1592		1900	2073		346	1837	1615		1818	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.50	0.50	0.50	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	364	6	48	2	6	2	31	658	1	0	673	329
RTOR Reduction (vph)	0	34	0	0	2	0	0	0	0	0	0	165
Lane Group Flow (vph)	364	20	0	2	6	0	31	658	1	0	673	164
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	19.0	19.0		0.8	0.8		42.3	42.3	42.3		34.6	34.6
Effective Green, g (s)	21.0	21.0		2.8	2.8		44.3	44.3	44.3		36.6	36.6
Actuated g/C Ratio	0.29	0.29		0.04	0.04		0.60	0.60	0.60		0.50	0.50
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	453	456		72	79		279	1110	976		907	771
v/s Ratio Prot	c0.16	0.01			0.00		0.01	c0.36			c0.37	
v/s Ratio Perm	c0.07			0.00			0.06		0.00			0.11
v/c Ratio	0.80	0.04		0.03	0.08		0.11	0.59	0.00		0.74	0.21
Uniform Delay, d1	23.4	18.9		33.9	34.0		9.3	8.9	5.7		14.6	10.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.9	0.0		0.2	0.4		0.2	0.9	0.0		3.3	0.1
Delay (s)	33.4	18.9		34.1	34.4		9.4	9.8	5.7		17.9	10.4
Level of Service	C	B		C	C		A	A	A		B	B
Approach Delay (s/veh)		31.5			34.4			9.8			15.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Future Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.988				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	3467	3336	0	1668	3296	0	0	1805	1830	0	1711	1531
Flt Permitted	0.950			0.950				0.720			0.751	
Satd. Flow (perm)	3467	3336	0	1668	3296	0	0	1368	1830	0	1352	1531
Satd. Flow (RTOR)					10				185			539
Adj. Flow (vph)	472	948	3	1	949	86	10	0	2	56	0	583
Lane Group Flow (vph)	472	951	0	1	1035	0	0	10	2	0	56	583
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	21.0	49.0		11.0	39.0		13.0	13.0	13.0	13.0	13.0	21.0
Total Split (%)	21.0%	49.0%		11.0%	39.0%		13.0%	13.0%	13.0%	13.0%	13.0%	21.0%
Maximum Green (s)	15.0	43.0		5.0	33.0		7.0	7.0	7.0	7.0	7.0	15.0
Yellow Time (s)	4.0	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead		Lag	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.52	0.36		0.00	0.63			0.05	0.00		0.29	0.64
Control Delay (s/veh)	24.4	6.3		23.0	14.7			29.0	0.0		32.8	6.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	24.4	6.3		23.0	14.7			29.0	0.0		32.8	6.0
Queue Length 50th (ft)	95	54		0	176			4	0		23	11
Queue Length 95th (ft)	144	232		4	240			10	0		58	79
Internal Link Dist (ft)		901			6873			814			942	
Turn Bay Length (ft)	500			250								105
Base Capacity (vph)	993	2765		254	1948			207	434		204	929
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	0.48	0.34		0.00	0.53			0.05	0.00		0.27	0.63

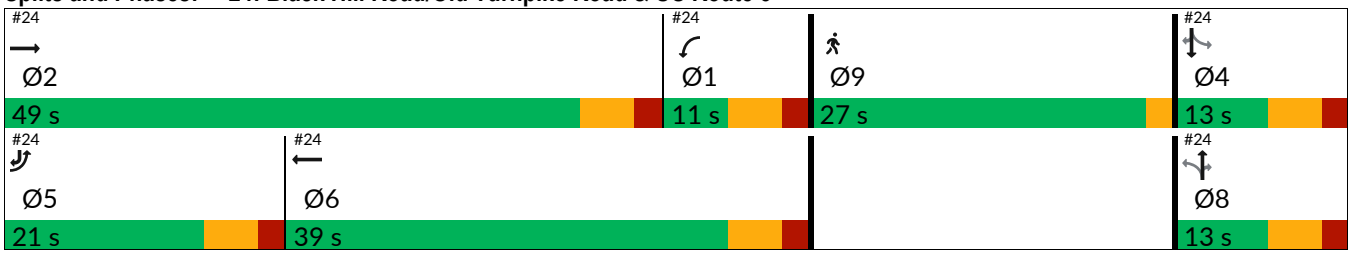
Intersection Summary
Cycle Length: 100

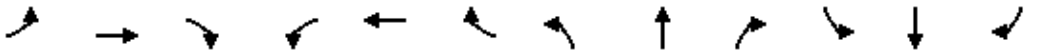
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Adj. Flow (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	27.0
Total Split (s)	27.0
Total Split (%)	27%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Don't Walk (s)	20.0
Pedestrian Calls (#/hr)	0
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Actuated Cycle Length: 62.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 24: Black Hill Road/Old Turnpike Road & US Route 3





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Future Volume (vph)	425	853	3	1	873	79	5	0	1	50	0	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	12	10	10	10	12	12	16	12	11	11
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	3467	3334		1668	3294			1805	1830		1711	1531
Flt Permitted	0.95	1.00		0.95	1.00			0.72	1.00		0.75	1.00
Satd. Flow (perm)	3467	3334		1668	3294			1369	1830		1352	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.50	0.50	0.50	0.90	0.90	0.90
Adj. Flow (vph)	472	948	3	1	949	86	10	0	2	56	0	583
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	2	0	0	370
Lane Group Flow (vph)	472	951	0	1	1030	0	0	10	0	0	56	213
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Actuated Green, G (s)	14.3	45.4		3.0	34.1			3.6	3.6		3.6	17.9
Effective Green, g (s)	16.3	47.4		5.0	36.1			5.6	5.6		5.6	21.9
Actuated g/C Ratio	0.23	0.68		0.07	0.52			0.08	0.08		0.08	0.31
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	807	2257		119	1698			109	146		108	566
v/s Ratio Prot	c0.14	0.29		0.00	c0.31							0.09
v/s Ratio Perm								0.01	0.00		c0.04	0.05
v/c Ratio	0.58	0.42		0.01	0.61			0.09	0.00		0.52	0.38
Uniform Delay, d1	23.8	5.1		30.2	11.9			29.8	29.6		30.9	18.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.1		0.0	0.6			0.4	0.0		4.2	0.4
Delay (s)	24.9	5.2		30.2	12.6			30.2	29.6		35.1	19.1
Level of Service	C	A		C	B			C	C		D	B
Approach Delay (s/veh)		11.8			12.6			30.1			20.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Future Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.91	1.00	0.91	0.91	0.95	0.95	1.00	1.00
Frt				0.850							0.850	
Flt Protected		0.950				0.950			0.950	0.950		
Satd. Flow (prot)	0	1728	3455	1492	0	1728	4964	0	1715	1715	1669	0
Flt Permitted		0.950				0.950			0.950	0.950		
Satd. Flow (perm)	0	1728	3455	1492	0	1728	4964	0	1715	1715	1669	0
Satd. Flow (RTOR)				185							185	
Adj. Flow (vph)	1	84	1620	495	1	33	1802	3	373	0	127	22
Lane Group Flow (vph)	0	85	1620	495	0	34	1805	0	186	187	127	0
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Split	NA	Prot	Split
Protected Phases	5	5	2	2	1	1	6		3	3	3	4
Permitted Phases												
Detector Phase	5	5	2	2	1	1	6		3	3	3	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0
Total Split (s)	12.0	12.0	24.0	24.0	12.0	12.0	24.0		19.0	19.0	19.0	12.0
Total Split (%)	12.0%	12.0%	24.0%	24.0%	12.0%	12.0%	24.0%		19.0%	19.0%	19.0%	12.0%
Maximum Green (s)	6.0	6.0	18.0	18.0	6.0	6.0	18.0		13.0	13.0	13.0	6.0
Yellow Time (s)	4.0	4.0	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	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag		Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min		None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.40	0.89	0.57		0.21	0.76		0.57	0.57	0.27	
Control Delay (s/veh)		45.0	33.1	16.7		51.1	25.5		42.6	42.7	2.7	
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay (s/veh)		45.0	33.1	16.7		51.1	25.5		42.6	42.7	2.7	
Queue Length 50th (ft)		51	~546	143		18	408		113	114	0	
Queue Length 95th (ft)		95	#882	#366		m29	#660		163	164	10	
Internal Link Dist (ft)			856				537			557		
Turn Bay Length (ft)		105		105		150			300		300	
Base Capacity (vph)		214	1823	874		165	2362		336	336	476	
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		0.40	0.89	0.57		0.21	0.76		0.55	0.56	0.27	

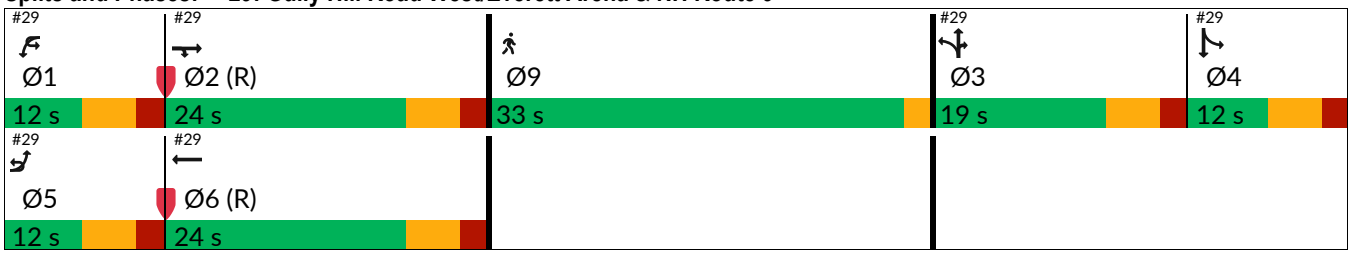
Intersection Summary
Cycle Length: 100

Lane Group	SBT	SBR	Ø9
Lane Configurations			
Traffic Volume (vph)	1	49	
Future Volume (vph)	1	49	
Lane Util. Factor	1.00	1.00	
Frt	0.897		
Flt Protected	0.989		
Satd. Flow (prot)	1729	0	
Flt Permitted	0.989		
Satd. Flow (perm)	1729	0	
Satd. Flow (RTOR)	73		
Adj. Flow (vph)	1	73	
Lane Group Flow (vph)	96	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	6.0		5.0
Minimum Split (s)	12.0		33.0
Total Split (s)	12.0		33.0
Total Split (%)	12.0%		33%
Maximum Green (s)	6.0		31.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?	Yes		
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Don't Walk (s)			24.0
Pedestrian Calls (#/hr)			0
v/c Ratio	0.41		
Control Delay (s/veh)	20.1		
Queue Delay	0.0		
Total Delay (s/veh)	20.1		
Queue Length 50th (ft)	14		
Queue Length 95th (ft)	34		
Internal Link Dist (ft)	277		
Turn Bay Length (ft)			
Base Capacity (vph)	233		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.41		

Intersection Summary

Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Gully Hill Road West/Everett Arena & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Future Volume (vph)	1	81	1571	480	1	30	1640	3	321	0	109	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	10	12	11	11	12	12	12	13	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91		0.95	0.95	1.00	
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	
Satd. Flow (prot)		1728	3455	1492		1728	4963		1715	1715	1669	
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	
Satd. Flow (perm)		1728	3455	1492		1728	4963		1715	1715	1669	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.90	0.91	0.91	0.91	0.86	0.86	0.86	0.67
Adj. Flow (vph)	1	84	1620	495	1	33	1802	3	373	0	127	22
RTOR Reduction (vph)	0	0	0	94	0	0	0	0	0	0	103	0
Lane Group Flow (vph)	0	85	1620	401	0	34	1805	0	186	187	24	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	4%
Turn Type	Prot	Prot	NA	Prot	Prot	Prot	NA		Split	NA	Prot	Split
Protected Phases	5	5	2	2	1	1	6		3	3	3	4
Permitted Phases												
Actuated Green, G (s)		9.1	47.2	47.2		5.1	43.2		17.2	17.2	17.2	
Effective Green, g (s)		11.1	49.2	49.2		7.1	45.2		19.2	19.2	19.2	
Actuated g/C Ratio		0.11	0.49	0.49		0.07	0.45		0.19	0.19	0.19	
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		191	1699	734		122	2243		329	329	320	
v/s Ratio Prot		c0.05	c0.47	0.27		0.02	0.36		0.11	c0.11	0.01	
v/s Ratio Perm												
v/c Ratio		0.45	0.95	0.55		0.28	0.80		0.57	0.57	0.08	
Uniform Delay, d1		41.6	24.3	17.6		44.0	23.6		36.6	36.6	33.1	
Progression Factor		1.00	1.00	1.00		1.19	0.87		1.00	1.00	1.00	
Incremental Delay, d2		1.7	13.3	2.9		0.9	2.4		2.2	2.3	0.1	
Delay (s)		43.2	37.6	20.6		53.2	23.0		38.8	38.9	33.2	
Level of Service		D	D	C		D	C		D	D	C	
Approach Delay (s/veh)			34.0				23.5			37.4		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	49
Future Volume (vph)	1	49
Ideal Flow (vphpl)	1900	1900
Lane Width	14	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.90	
Flt Protected	0.99	
Satd. Flow (prot)	1729	
Flt Permitted	0.99	
Satd. Flow (perm)	1729	
Peak-hour factor, PHF	0.67	0.67
Adj. Flow (vph)	1	73
RTOR Reduction (vph)	67	0
Lane Group Flow (vph)	29	0
Heavy Vehicles (%)	4%	4%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.5	
Effective Green, g (s)	8.5	
Actuated g/C Ratio	0.09	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	146	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.20	
Uniform Delay, d1	42.6	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	43.3	
Level of Service	D	
Approach Delay (s/veh)	43.3	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Future Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Lane Util. Factor	1.00	0.91	1.00	0.95	0.97	0.95	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.997				0.850		0.850
Flt Protected	0.950				0.950			0.950	0.955		0.950	
Satd. Flow (prot)	1728	4964	1546	0	3351	3445	0	1698	1707	1599	1793	1605
Flt Permitted	0.950				0.950			0.950	0.955		0.950	
Satd. Flow (perm)	1728	4964	1546	0	3351	3445	0	1698	1707	1599	1793	1605
Satd. Flow (RTOR)			120			2				263		558
Adj. Flow (vph)	6	1664	97	1	285	1581	29	199	7	263	19	0
Lane Group Flow (vph)	6	1664	97	0	286	1610	0	103	103	263	19	17
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	NA
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Detector Phase	5	2	2 3	1	1	6		3	3	3	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	16.0		12.0	12.0	16.0		12.0	12.0	12.0	12.0	12.0
Total Split (s)	12.0	32.0		15.0	15.0	35.0		12.0	12.0	12.0	12.0	12.0
Total Split (%)	12.0%	32.0%		15.0%	15.0%	35.0%		12.0%	12.0%	12.0%	12.0%	12.0%
Maximum Green (s)	6.0	26.0		9.0	9.0	29.0		6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	4.0	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		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0	0.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0			4.0	4.0		4.0	4.0	6.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag		Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min		None	None	C-Min		None	None	None	None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.04	0.69	0.09		0.54	0.71		0.40	0.40	0.60	0.12	0.03
Control Delay (s/veh)	30.8	34.7	1.7		42.1	17.0		41.6	41.5	10.8	43.4	0.1
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.8	34.7	1.7		42.1	17.0		41.6	41.5	10.8	43.4	0.1
Queue Length 50th (ft)	4	295	4		88	330		63	63	0	12	0
Queue Length 95th (ft)	m6	#519	m1		125	#749		107	107	61	29	0
Internal Link Dist (ft)		537				2513			449			256
Turn Bay Length (ft)	225		225		200			90				
Base Capacity (vph)	142	2424	1090		533	2280		258	260	439	157	649
Starvation Cap Reductn	0	0	0		0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.69	0.09		0.54	0.71		0.40	0.40	0.60	0.12	0.03

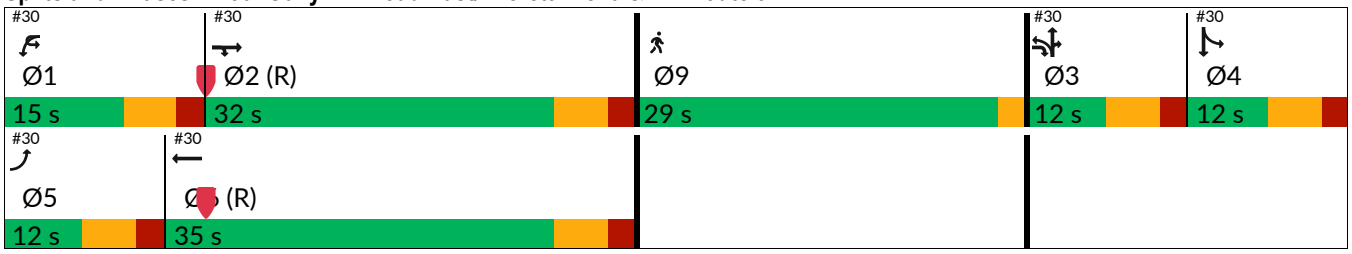
Intersection Summary
Cycle Length: 100

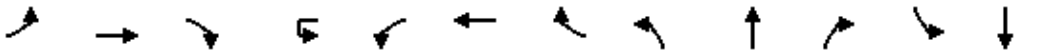
Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	13	
Future Volume (vph)	13	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	17	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		6.0
Minimum Split (s)		29.0
Total Split (s)		29.0
Total Split (%)		29%
Maximum Green (s)		27.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		7.0
Flash Don't Walk (s)		20.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
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.

Splits and Phases: 30: Gully Hill Road East/Everett Arena & NH Route 9





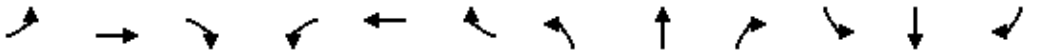
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Future Volume (vph)	6	1597	93	1	268	1486	27	175	6	231	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	11	11	11	12	12	12	13	13
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0		4.0	4.0	6.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.97	0.95		0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95	1.00
Satd. Flow (prot)	1728	4964	1546		3351	3446		1698	1708	1599	1793	1605
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95	1.00
Satd. Flow (perm)	1728	4964	1546		3351	3446		1698	1708	1599	1793	1605
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.88	0.88	0.88	0.75	0.75
Adj. Flow (vph)	6	1664	97	1	285	1581	29	199	7	262	19	0
RTOR Reduction (vph)	0	0	33	0	0	1	0	0	0	228	0	16
Lane Group Flow (vph)	6	1664	64	0	286	1609	0	103	103	35	19	1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	4%	4%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA		Split	NA	Prot	Split	NA
Protected Phases	5	2	2 3	1	1	6		3	3	3	4	4
Permitted Phases												
Actuated Green, G (s)	1.4	44.5	63.7		13.9	57.0		13.2	13.2	13.2	4.4	4.4
Effective Green, g (s)	3.4	46.5	65.7		15.9	59.0		15.2	15.2	13.2	6.4	6.4
Actuated g/C Ratio	0.03	0.47	0.66		0.16	0.59		0.15	0.15	0.13	0.06	0.06
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	2308	1015		532	2033		258	259	211	114	102
v/s Ratio Prot	0.00	0.34	0.04		c0.09	c0.47		c0.06	0.06	0.02	c0.01	0.00
v/s Ratio Perm												
v/c Ratio	0.10	0.72	0.06		0.54	0.79		0.40	0.40	0.16	0.17	0.01
Uniform Delay, d1	46.8	21.5	6.1		38.7	15.8		38.3	38.3	38.5	44.3	43.8
Progression Factor	0.72	1.52	1.43		1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.0	0.0		1.0	3.2		1.0	1.0	0.4	0.7	0.0
Delay (s)	34.2	33.7	8.8		39.7	19.0		39.3	39.3	38.9	45.0	43.9
Level of Service	C	C	A		D	B		D	D	D	D	D
Approach Delay (s/veh)		32.4				22.1			39.1			44.5
Approach LOS		C				C			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.75
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	4%
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/veh)	
Approach LOS	

Intersection Summary

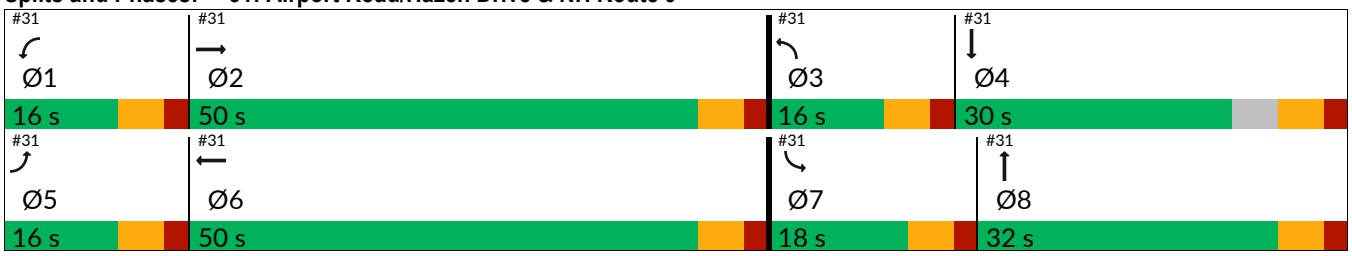


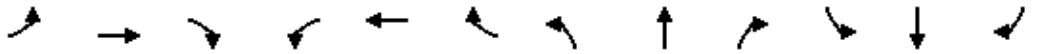
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Future Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Satd. Flow (RTOR)			197			197			266			197
Adj. Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
Lane Group Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		3.0	10.0		3.0	3.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	16.0	50.0		16.0	50.0		16.0	32.0		18.0	30.0	
Total Split (%)	13.8%	43.1%		13.8%	43.1%		13.8%	27.6%		15.5%	25.9%	
Maximum Green (s)	10.0	44.0		10.0	44.0		10.0	26.0		12.0	24.0	
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)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)		8.0			8.0			8.0			8.0	
Flash Don't Walk (s)		6.0			6.0			6.0			6.0	
Pedestrian Calls (#/hr)		0			0			0			0	
v/c Ratio	0.18	0.88	0.16	0.42	0.85	0.04	0.55	0.21	0.17	0.15	0.28	0.06
Control Delay (s/veh)	41.7	29.8	0.2	42.6	26.5	0.0	44.8	35.8	0.2	42.5	43.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.7	29.8	0.2	42.6	26.5	0.0	44.8	35.8	0.2	42.5	43.0	0.1
Queue Length 50th (ft)	18	435	0	52	461	0	72	36	0	14	33	0
Queue Length 95th (ft)	38	#634	0	88	#694	0	115	87	0	39	71	0
Internal Link Dist (ft)		2513			3396			604			2766	
Turn Bay Length (ft)	550		450	280		200	215		150	300		
Base Capacity (vph)	448	1714	1599	448	1895	1652	433	548	1599	263	594	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.88	0.16	0.39	0.85	0.04	0.55	0.14	0.17	0.09	0.10	0.06

Intersection Summary
Cycle Length: 116

Actuated Cycle Length: 93.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 31: Airport Road/Hazen Drive & NH Route 9





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Future Volume (vph)	57	1430	241	162	1483	62	215	68	239	22	51	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	11	13	11	11	12	11	11	11
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3455	1599	3467	3455	1652	3351	1818	1599	1745	1837	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	60	1505	254	176	1612	67	239	76	266	24	57	87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.8	45.8	98.5	9.2	49.2	98.5	10.1	16.4	98.5	3.1	9.4	98.5
Effective Green, g (s)	7.8	47.8	98.5	11.2	51.2	98.5	12.1	18.4	98.5	5.1	11.4	98.5
Actuated g/C Ratio	0.08	0.49	1.00	0.11	0.52	1.00	0.12	0.19	1.00	0.05	0.12	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	274	1676	1599	394	1795	1652	411	339	1599	90	212	1561
v/s Ratio Prot	0.02	0.44		c0.05	c0.47		c0.07	c0.04		0.01	0.03	
v/s Ratio Perm			0.16			0.04			0.17			0.06
v/c Ratio	0.22	0.90	0.16	0.45	0.90	0.04	0.58	0.22	0.17	0.27	0.27	0.06
Uniform Delay, d1	42.5	23.1	0.0	40.8	21.3	0.0	40.8	34.0	0.0	44.9	39.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	6.8	0.2	0.8	6.4	0.0	2.1	0.3	0.2	1.6	0.7	0.1
Delay (s)	42.9	29.9	0.2	41.6	27.7	0.0	42.9	34.3	0.2	46.5	40.4	0.1
Level of Service	D	C	A	D	C	A	D	C	A	D	D	A
Approach Delay (s/veh)		26.2			28.0			22.2			20.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Future Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt			0.996				0.850			0.850		0.918
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1787	3323	0	1668	3455	1546	1685	1773	1507	3268	1744
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1787	3323	0	1668	3455	1546	1685	1773	1507	3268	1744
Satd. Flow (RTOR)			2				133			91		37
Adj. Flow (vph)	1	60	1380	33	57	1522	369	139	139	72	428	83
Lane Group Flow (vph)	0	61	1413	0	57	1522	369	139	139	72	428	182
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Detector Phase	5	5	2		1	6	6 4	8	8	8 1	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Total Split (s)	11.0	11.0	45.0		11.0	45.0		24.0	24.0		20.0	20.0
Total Split (%)	8.3%	8.3%	34.1%		8.3%	34.1%		18.2%	18.2%		15.2%	15.2%
Maximum Green (s)	5.0	5.0	39.0		5.0	39.0		18.0	18.0		14.0	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)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min		None	None		None	None
Walk Time (s)												
Flash Don't Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.47	0.99		0.47	0.97	0.34	0.52	0.50	0.15	0.78	0.56
Control Delay (s/veh)		55.5	48.7		56.4	43.7	6.0	43.9	42.8	4.4	49.5	37.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		55.5	48.7		56.4	43.7	6.0	43.9	42.8	4.4	49.5	37.0
Queue Length 50th (ft)		36	434		34	~498	55	78	78	0	128	80
Queue Length 95th (ft)		81	#657		#80	#713	118	137	136	22	#211	158
Internal Link Dist (ft)			3396			4357			1198			1872
Turn Bay Length (ft)		210			125		125	130		130	350	
Base Capacity (vph)		131	1434		122	1574	1073	354	373	476	550	324
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.47	0.99		0.47	0.97	0.34	0.39	0.37	0.15	0.78	0.56

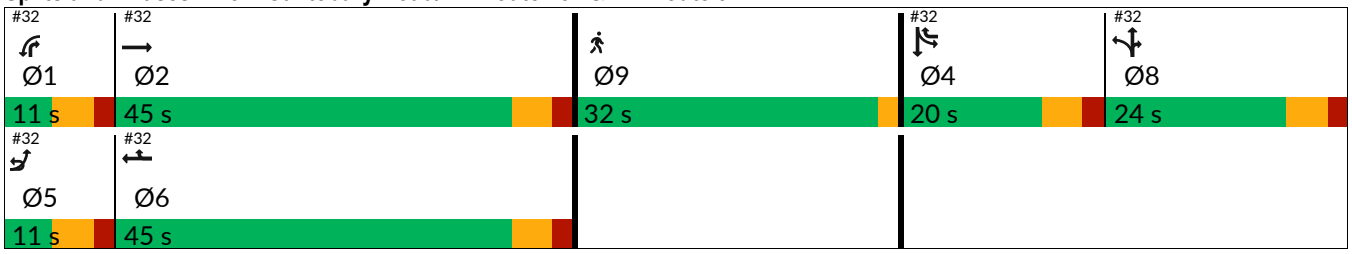
Intersection Summary
Cycle Length: 132

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	92	
Future Volume (vph)	92	
Lane Util. Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Satd. Flow (RTOR)		
Adj. Flow (vph)	99	
Lane Group Flow (vph)	0	
Turn Type		
Protected Phases		9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)		5.0
Minimum Split (s)		32.0
Total Split (s)		32.0
Total Split (%)		24%
Maximum Green (s)		30.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		None
Walk Time (s)		5.0
Flash Don't Walk (s)		25.0
Pedestrian Calls (#/hr)		0
v/c Ratio		
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Actuated Cycle Length: 95.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
~ 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: 32: Cantebury Road/NH Route 132 & NH Route 9



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Future Volume (vph)	1	56	1297	31	53	1415	343	125	125	65	398	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	10	10	10	11	11	10	10	10	10	12
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92
Flt Protected		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1787	3324		1668	3455	1546	1685	1773	1507	3268	1745
Flt Permitted		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1787	3324		1668	3455	1546	1685	1773	1507	3268	1745
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.93	0.93	0.93	0.90	0.90	0.90	0.93	0.93
Adj. Flow (vph)	1	60	1380	33	57	1522	369	139	139	72	428	83
RTOR Reduction (vph)	0	0	1	0	0	0	46	0	0	53	0	31
Lane Group Flow (vph)	0	61	1412	0	57	1522	323	139	139	19	428	151
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA		Prot	NA	pt+ov	Split	NA	pt+ov	Split	NA
Protected Phases	5	5	2		1	6	6 4	8	8	8 1	4	4
Permitted Phases												
Actuated Green, G (s)		4.0	40.4		5.0	41.4	61.4	13.1	13.1	24.1	14.0	14.0
Effective Green, g (s)		6.0	42.4		7.0	43.4	63.4	15.1	15.1	26.1	16.0	16.0
Actuated g/C Ratio		0.06	0.44		0.07	0.45	0.66	0.16	0.16	0.27	0.17	0.17
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		111	1460		120	1553	1015	263	277	407	541	289
v/s Ratio Prot		0.03	0.42		c0.03	c0.44	0.21	c0.08	0.08	0.01	c0.13	0.09
v/s Ratio Perm												
v/c Ratio		0.55	0.97		0.48	0.98	0.32	0.53	0.50	0.05	0.79	0.52
Uniform Delay, d1		43.9	26.4		43.0	26.1	7.2	37.4	37.3	26.0	38.6	36.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.5	16.2		2.9	18.2	0.2	1.9	1.4	0.0	7.8	1.7
Delay (s)		49.4	42.6		45.9	44.3	7.4	39.3	38.7	26.1	46.4	38.5
Level of Service		D	D		D	D	A	D	D	C	D	D
Approach Delay (s/veh)			42.8			37.4			36.4			44.0
Approach LOS			D			D			D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	92
Future Volume (vph)	92
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	99
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
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/veh)	
Approach LOS	

Intersection Summary

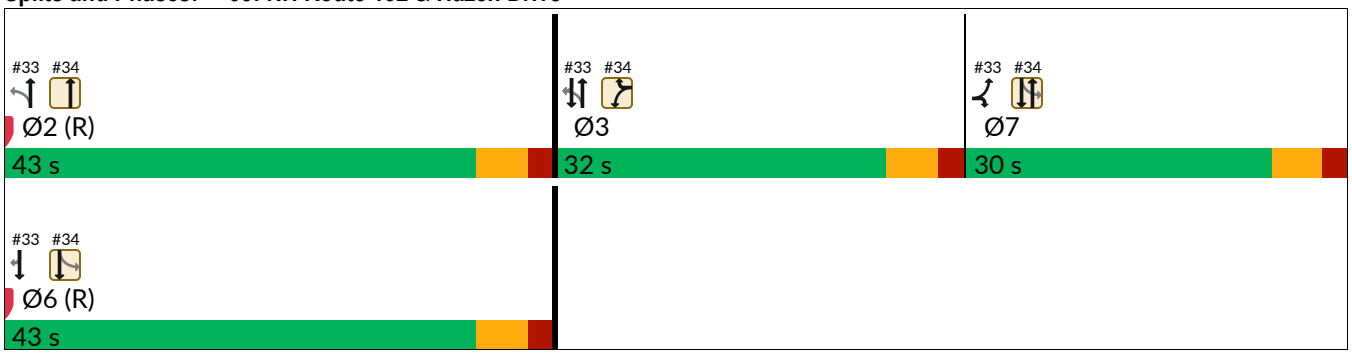
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø2	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	156	23	14	537	717	159			
Future Volume (vph)	156	23	14	537	717	159			
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00			
Frt		0.850				0.850			
Flt Protected	0.950			0.999					
Satd. Flow (prot)	3502	1615	0	1817	1900	1561			
Flt Permitted	0.950			0.977					
Satd. Flow (perm)	3502	1615	0	1777	1900	1561			
Satd. Flow (RTOR)		26				164			
Adj. Flow (vph)	173	26	16	597	739	164			
Lane Group Flow (vph)	173	26	0	613	739	164			
Turn Type	Prot	Prot	Perm	NA	NA	Perm			
Protected Phases	7	7		2 3	3 6		2	3	6
Permitted Phases			2 3			3 6			
Detector Phase	7	7	2 3	2 3	3 6	3 6			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	5.0	10.0
Minimum Split (s)	11.0	11.0					16.0	11.0	16.0
Total Split (s)	30.0	30.0					43.0	32.0	43.0
Total Split (%)	28.6%	28.6%					41%	30%	41%
Maximum Green (s)	24.0	24.0					37.0	26.0	37.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lag	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes						Yes	
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	None	C-Min
v/c Ratio	0.21	0.06		0.50	0.57	0.15			
Control Delay (s/veh)	32.3	11.8		10.0	12.4	2.9			
Queue Delay	0.0	0.0		0.0	1.0	0.0			
Total Delay (s/veh)	32.3	11.8		10.0	13.4	2.9			
Queue Length 50th (ft)	47	0		183	244	11			
Queue Length 95th (ft)	76	22		264	376	m30			
Internal Link Dist (ft)	2243			1872	308				
Turn Bay Length (ft)	660								
Base Capacity (vph)	867	419		1215	1299	1119			
Starvation Cap Reductn	0	0		0	308	0			
Spillback Cap Reductn	0	0		0	0	0			
Storage Cap Reductn	0	0		0	0	0			
Reduced v/c Ratio	0.20	0.06		0.50	0.75	0.15			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 33: NH Route 132 & Hazen Drive



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	156	23	14	537	717	159
Future Volume (vph)	156	23	14	537	717	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	11
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3502	1615		1816	1900	1561
Flt Permitted	0.95	1.00		0.98	1.00	1.00
Satd. Flow (perm)	3502	1615		1777	1900	1561
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.97	0.97
Adj. Flow (vph)	173	26	16	597	739	164
RTOR Reduction (vph)	0	20	0	0	0	52
Lane Group Flow (vph)	173	6	0	613	739	112
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%
Turn Type	Prot	Prot	Perm	NA	NA	Perm
Protected Phases	7	7		2 3	3 6	
Permitted Phases			2 3			3 6
Actuated Green, G (s)	23.2	23.2		69.8	69.8	69.8
Effective Green, g (s)	25.2	25.2		71.8	71.8	71.8
Actuated g/C Ratio	0.24	0.24		0.68	0.68	0.68
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	840	387		1215	1299	1067
v/s Ratio Prot	c0.05	0.00			c0.39	
v/s Ratio Perm				0.35		0.07
v/c Ratio	0.21	0.02		0.50	0.57	0.11
Uniform Delay, d1	31.9	30.4		8.0	8.6	5.7
Progression Factor	1.00	1.00		1.00	1.20	2.76
Incremental Delay, d2	0.1	0.0		0.3	0.5	0.0
Delay (s)	32.0	30.5		8.3	10.8	15.7
Level of Service	C	C		A	B	B
Approach Delay (s/veh)	31.8			8.3	11.7	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

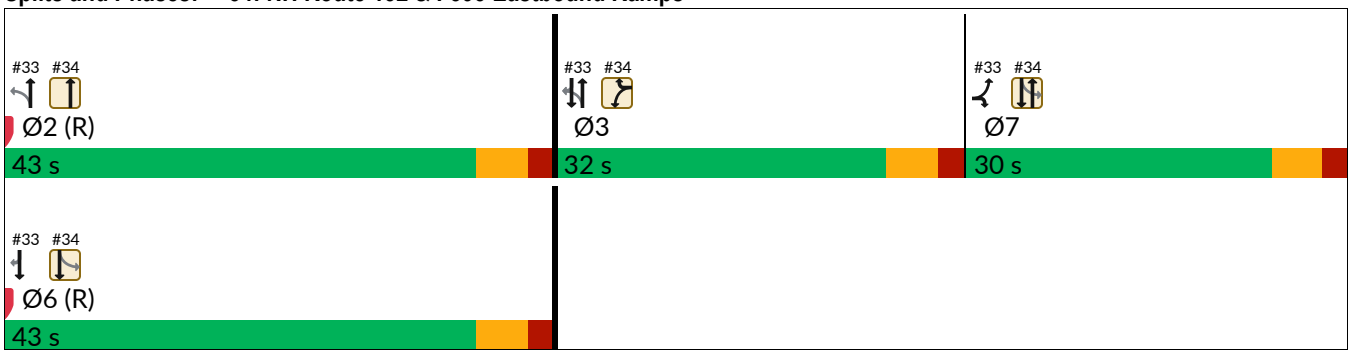
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø2	Ø6	Ø7
Lane Configurations									
Traffic Volume (vph)	369	80	599	96	43	515			
Future Volume (vph)	369	80	599	96	43	515			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00			
Frt		0.850	0.979						
Flt Protected	0.950				0.950				
Satd. Flow (prot)	1805	1615	3383	0	1728	1818			
Flt Permitted	0.950				0.322				
Satd. Flow (perm)	1805	1615	3383	0	586	1818			
Satd. Flow (RTOR)		65	36						
Adj. Flow (vph)	393	85	666	107	46	548			
Lane Group Flow (vph)	393	85	773	0	46	548			
Turn Type	Prot	Prot	NA		Perm	NA			
Protected Phases	3	3	2 7			6 7	2	6	7
Permitted Phases					6 7				
Detector Phase	3	3	2 7		6 7	6 7			
Switch Phase									
Minimum Initial (s)	5.0	5.0					10.0	10.0	5.0
Minimum Split (s)	11.0	11.0					16.0	16.0	11.0
Total Split (s)	32.0	32.0					43.0	43.0	30.0
Total Split (%)	30.5%	30.5%					41%	41%	29%
Maximum Green (s)	26.0	26.0					37.0	37.0	24.0
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)	-2.0	-2.0							
Total Lost Time (s)	4.0	4.0							
Lead/Lag	Lead	Lead							Lag
Lead-Lag Optimize?	Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0
Recall Mode	None	None					C-Min	C-Min	None
v/c Ratio	0.78	0.17	0.35		0.12	0.47			
Control Delay (s/veh)	47.5	11.6	6.2		7.9	11.0			
Queue Delay	0.0	0.0	0.3		0.0	0.1			
Total Delay (s/veh)	47.5	11.6	6.5		7.9	11.1			
Queue Length 50th (ft)	248	10	75		11	165			
Queue Length 95th (ft)	#400	48	96		25	237			
Internal Link Dist (ft)	838		308			663			
Turn Bay Length (ft)		135			250				
Base Capacity (vph)	504	498	2229		384	1191			
Starvation Cap Reductn	0	0	780		0	0			
Spillback Cap Reductn	0	0	0		0	62			
Storage Cap Reductn	0	0	0		0	0			
Reduced v/c Ratio	0.78	0.17	0.53		0.12	0.49			

Intersection Summary
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50

Control Type: Actuated-Coordinated

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

Splits and Phases: 34: NH Route 132 & I-393 Eastbound Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	369	80	599	96	43	515
Future Volume (vph)	369	80	599	96	43	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	12	11	11
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	3383		1728	1818
Flt Permitted	0.95	1.00	1.00		0.32	1.00
Satd. Flow (perm)	1805	1615	3383		586	1818
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.94	0.94
Adj. Flow (vph)	393	85	666	107	46	548
RTOR Reduction (vph)	0	47	13	0	0	0
Lane Group Flow (vph)	393	38	760	0	46	548
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Turn Type	Prot	Prot	NA		Perm	NA
Protected Phases	3	3	2 7			6 7
Permitted Phases					6 7	
Actuated Green, G (s)	27.3	27.3	65.7		65.7	65.7
Effective Green, g (s)	29.3	29.3	67.7		67.7	67.7
Actuated g/C Ratio	0.28	0.28	0.64		0.64	0.64
Clearance Time (s)	6.0	6.0				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	503	450	2181		377	1172
v/s Ratio Prot	c0.22	0.02	0.22			c0.30
v/s Ratio Perm					0.08	
v/c Ratio	0.78	0.08	0.35		0.12	0.47
Uniform Delay, d1	34.9	27.9	8.5		7.2	9.5
Progression Factor	1.00	1.00	0.72		1.00	1.00
Incremental Delay, d2	7.7	0.1	0.1		0.1	0.3
Delay (s)	42.6	28.0	6.2		7.3	9.8
Level of Service	D	C	A		A	A
Approach Delay (s/veh)	40.0		6.2			9.6
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group