

***APPENDIX F***  
***CAPACITY ANALYSIS WORKSHEETS***

***EXISTING CONDITIONS***





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↘		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Fr <sub>t</sub>	1.00	0.85		1.00	1.00	
Fl <sub>t</sub> Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2026	1813		1792	1810	
Fl <sub>t</sub> Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2026	1813		1792	1810	
Volume (vph)	578	13	0	647	687	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	657	15	0	711	781	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	657	15	0	711	781	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.3	14.3		26.3	26.3	
Effective Green, g (s)	16.3	16.3		29.3	29.3	
Actuated g/C Ratio	0.30	0.30		0.55	0.55	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	616	551		980	989	
v/s Ratio Prot	c0.32			0.40	c0.43	
v/s Ratio Perm		0.01				
v/c Ratio	1.07	0.03		0.73	0.79	
Uniform Delay, d <sub>1</sub>	18.6	13.1		9.1	9.7	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d <sub>2</sub>	55.3	0.0		3.8	5.3	
Delay (s)	74.0	13.1		12.9	15.0	
Level of Service	E	B		B	B	
Approach Delay (s)	72.6			12.9	15.0	
Approach LOS	E			B	B	

**Intersection Summary**

HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↓
Volume (vph)	578	13	647	687
Lane Group Flow (vph)	657	15	711	781
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	20.0	20.0	40.0	40.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag	Lead-Lag Optimize?			
Recall Mode	None	None	Min	Min
v/c Ratio	1.07	0.03	0.73	0.79
Control Delay	81.8	16.4	13.9	16.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	81.8	16.4	13.9	16.3
Queue Length 50th (ft)	~278	4	147	172
Queue Length 95th (ft)	#464	15	251	281
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	615	550	1075	1086
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	1.07	0.03	0.66	0.72

**Intersection Summary**

Cycle Length: 60

Actuated Cycle Length: 53.8

Natural Cycle: 65

Control Type: Semi Act-Uncoord

~ 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: I-80 WB Off-Ramp & Route 611**

↑ ø2 40 s		↖ ø4 20 s	
↓ ø6 40 s			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↕	↕	↘	↙
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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
Fr <sub>t</sub>	1.00	0.85	0.97		1.00	1.00
Fl <sub>t</sub> Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3321		1753	3628
Fl <sub>t</sub> Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1883	1631	3321		221	3628
Volume (vph)	249	108	970	238	90	696
Peak-hour factor, PHF	0.78	0.78	0.98	0.98	0.83	0.83
Adj. Flow (vph)	319	138	990	243	108	839
RTOR Reduction (vph)	0	84	0	0	0	0
Lane Group Flow (vph)	319	54	1233	0	108	839
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	16.3	16.3	25.4		36.5	36.5
Effective Green, g (s)	19.3	19.3	29.4		40.5	40.5
Actuated g/C Ratio	0.28	0.28	0.43		0.60	0.60
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	536	464	1440		292	2167
v/s Ratio Prot	c0.17		c0.37		0.04	c0.23
v/s Ratio Perm		0.03			0.18	
v/c Ratio	0.60	0.12	0.86		0.37	0.39
Uniform Delay, d1	20.9	17.9	17.3		10.0	7.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.8	0.1	6.0		0.8	0.3
Delay (s)	22.7	18.0	23.3		10.8	7.5
Level of Service	C	B	C		B	A
Approach Delay (s)	21.3		23.3			7.9
Approach LOS	C		C			A

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

2005 Existing Conditions  
Friday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↘	↕	↙	↕
Volume (vph)	249	108	970	90	696
Lane Group Flow (vph)	319	138	1233	108	839
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	33.0	33.0	34.0	13.0	47.0
Total Split (%)	41.3%	41.3%	42.5%	16.3%	58.8%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.58	0.25	0.84	0.34	0.40
Control Delay	25.8	6.7	26.3	10.4	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	6.7	26.3	10.4	8.8
Queue Length 50th (ft)	120	6	251	18	87
Queue Length 95th (ft)	160	30	#459	44	145
Internal Link Dist (ft)	1091		2024		1030
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	726	701	1503	323	2218
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	0.44	0.20	0.82	0.33	0.38

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 66.9

Natural Cycle: 55

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611

↙ φ1	↕ φ2		
13 s	34 s		
↘ φ6		↙ φ8	
17 s		33 s	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↘	↙	↑↑	↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frnt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3581	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3581	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1110	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	9	132	287	791	654	38
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	13	197	302	833	861	50
Lane Group Flow (vph)	13	197	302	833	911	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 48.5% ICU Level of Service A  
 Analysis Period (min) 15





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	9	132	287	791	654	38
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Hourly flow rate (vph)	13	197	302	833	861	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1110		
pX, platoon unblocked						
vC, conflicting volume	1906	455	911			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1906	455	911			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	64	59			
cM capacity (veh/h)	35	546	744			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	13	197	302	416	416	574	337
Volume Left	13	0	302	0	0	0	0
Volume Right	0	197	0	0	0	0	50
cSH	35	546	744	1700	1700	1700	1700
Volume to Capacity	0.39	0.36	0.41	0.24	0.24	0.34	0.20
Queue Length 95th (ft)	32	41	50	0	0	0	0
Control Delay (s)	162.4	15.3	13.1	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	24.7		3.5			0.0	
Approach LOS	C						

**Intersection Summary**

Average Delay	4.1
Intersection Capacity Utilization	48.5%
ICU Level of Service	A
Analysis Period (min)	15

2005 Existing Conditions 3: Woodland Road/Private Driveway/Strickland's Road & Route 611  
Friday P.M. Peak Hour



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations			↕			↕			↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	15	13	13	13	13	11	12	12	12
Grade (%)			6%			5%				3%		
Total Lost time (s)			4.0			4.0			4.0	4.0		
Lane Util. Factor			1.00			1.00			1.00	0.95		
Frt			0.96			0.94			1.00	0.99		
Flt Protected			0.98			0.97			0.95	1.00		
Satd. Flow (prot)			1866			1722			1685	3441		
Flt Permitted			0.88			0.83			0.36	1.00		
Satd. Flow (perm)			1677			1462			646	3441		
Volume (vph)	4	1	2	3	76	7	62	1	5	727	1	67
Peak-hour factor, PHF	0.56	0.56	0.56	0.56	0.89	0.89	0.89	0.89	0.99	0.99	0.99	0.99
Adj. Flow (vph)	7	2	4	5	85	8	70	1	5	734	1	68
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	5	0	0
Lane Group Flow (vph)	0	0	14	0	0	164	0	0	5	798	0	0
Turn Type	Perm	Perm			Perm				Perm			
Protected Phases			4			8				2		
Permitted Phases	4	4			8				2			
Actuated Green, G (s)			10.8			10.8			27.9	27.9		
Effective Green, g (s)			12.8			12.8			31.4	31.4		
Actuated g/C Ratio			0.19			0.19			0.47	0.47		
Clearance Time (s)			6.0			6.0			7.5	7.5		
Vehicle Extension (s)			3.0			3.0			5.0	5.0		
Lane Grp Cap (vph)			321			280			304	1617		
v/s Ratio Prot										c0.23		
v/s Ratio Perm			0.01			c0.11			0.01			
v/c Ratio			0.04			0.59			0.02	0.49		
Uniform Delay, d1			22.0			24.6			9.5	12.2		
Progression Factor			1.00			1.00			1.00	1.00		
Incremental Delay, d2			0.1			3.1			0.0	0.5		
Delay (s)			22.1			27.7			9.5	12.7		
Level of Service			C			C			A	B		
Approach Delay (s)			22.1			27.7				12.7		
Approach LOS			C			C				B		
<b>Intersection Summary</b>												
HCM Average Control Delay			11.8			HCM Level of Service			B			
HCM Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			66.8			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			55.5%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

2005 Existing Conditions 3: Woodland Road/Private Driveway/Strickland's Road & Route 611  
 Friday P.M. Peak Hour



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↔	↔↔			↔↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11	11	11
Grade (%)			-7%			-2%		
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00		
Fr <sub>t</sub>		1.00	1.00			0.93		
Fl <sub>t</sub> Protected		0.95	1.00			0.98		
Satd. Flow (prot)		1770	3657			1655		
Fl <sub>t</sub> Permitted		0.24	1.00			0.98		
Satd. Flow (perm)		450	3657			1655		
Volume (vph)	1	38	613	7	1	1	1	1
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	46	748	9	1	1	1	1
RTOR Reduction (vph)	0	0	0	0	0	1	0	0
Lane Group Flow (vph)	0	47	757	0	0	3	0	0
Turn Type	pm+pt	pm+pt			Perm			
Protected Phases	1	1	6			9		
Permitted Phases	6	6			9			
Actuated Green, G (s)		35.6	35.6			0.9		
Effective Green, g (s)		39.1	39.1			2.9		
Actuated g/C Ratio		0.59	0.59			0.04		
Clearance Time (s)		5.5	7.5			6.0		
Vehicle Extension (s)		3.0	5.0			3.0		
Lane Grp Cap (vph)		337	2141			72		
v/s Ratio Prot		0.01	0.21					
v/s Ratio Perm		0.07				0.00		
v/c Ratio		0.14	0.35			0.04		
Uniform Delay, d1		6.9	7.2			30.6		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.2	0.2			0.2		
Delay (s)		7.0	7.5			30.9		
Level of Service		A	A			C		
Approach Delay (s)			7.4			30.9		
Approach LOS			A			C		

Intersection Summary

2005 Existing Conditions 3: Woodland Road/Private Driveway/Strickland's Road & Route 611  
 Friday P.M. Peak Hour



Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBL	SBT	SWL
Lane Configurations			↔		↔	↑	↑↑		↑	↑↑	↔
Volume (vph)	4	1	2	76	7	5	727	1	38	613	1
Lane Group Flow (vph)	0	0	18	0	164	5	803	0	47	757	4
Turn Type	Perm	Perm		Perm		Perm		pm+pt	pm+pt		
Protected Phases			4		8		2	1	1	6	9
Permitted Phases	4	4		8		2		6	6		
Detector Phases	4	4	4	8	8	2	2	1	1	6	9
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	10.0	4.0	4.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	17.5	17.5	9.5	9.5	17.5	13.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.5	34.5	12.5	12.5	47.0	19.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	34.5%	34.5%	12.5%	12.5%	47.0%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0
Lead/Lag						Lag	Lag	Lead	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min	None	None	Min	None
v/c Ratio			0.04		0.46	0.01	0.42		0.15	0.33	0.02
Control Delay			17.0		22.7	14.6	12.9		10.0	7.9	29.0
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay			17.0		22.7	14.6	12.9		10.0	7.9	29.0
Queue Length 50th (ft)			2		26	1	50		5	46	1
Queue Length 95th (ft)			12		131	9	253		27	154	11
Internal Link Dist (ft)			105		2012		2203			2319	625
Turn Bay Length (ft)						73			183		
Base Capacity (vph)			699		613	395	2107		339	2587	348
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		0.27	0.01	0.38		0.14	0.29	0.01

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 58.5

Natural Cycle: 60

Control Type: Semi Act-Uncoord

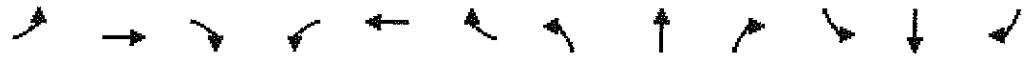
Splits and Phases: 3: Woodland Road/Private Driveway/Strickland's Road & Route 611

↙ ø1 12.5 s	↑ ø2 34.5 s	→ ø4 34 s	↘ ø9 19 s
↓ ø6 4.7 s	← ø8 34 s		



2005 Existing Conditions  
Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	12	12	12	12
Grade (%)		2%			8%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor												
Frnt		0.865			0.888							
Flt Protected					0.996							
Satd. Flow (prot)	0	1648	0	0	1582	0	0	3522	0	0	3455	0
Flt Permitted					0.996							
Satd. Flow (perm)	0	1648	0	0	1582	0	0	3522	0	0	3455	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.01	1.01	1.01	0.99	0.99	0.99
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		158			1027			2399			3261	
Travel Time (s)		3.1			20.0			36.3			49.4	
Volume (vph)	0	0	3	1	1	10	3	789	1	5	654	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	4	2	2	20	3	813	1	6	788	1
Lane Group Flow (vph)	0	4	0	0	24	0	0	817	0	0	795	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.9%

ICU Level of Service A

Analysis Period (min) 15



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%			-1%	
Volume (veh/h)	0	0	3	1	1	10	3	789	1	5	654	1
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	4	2	2	20	3	813	1	6	788	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1234	1621	395	1230	1621	407	789			814		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1234	1621	395	1230	1621	407	789			814		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	98	98	97	100			99		
cM capacity (veh/h)	125	101	604	131	100	593	826			789		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	24	410	408	400	395
Volume Left	0	2	3	0	6	0
Volume Right	4	20	0	1	0	1
cSH	604	348	826	1700	789	1700
Volume to Capacity	0.01	0.07	0.00	0.24	0.01	0.23
Queue Length 95th (ft)	0	6	0	0	1	0
Control Delay (s)	11.0	16.1	0.1	0.0	0.2	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	11.0	16.1	0.1		0.1	
Approach LOS	B	C				

Intersection Summary		
Average Delay	0.3	
Intersection Capacity Utilization	33.9%	ICU Level of Service
Analysis Period (min)	15	A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↓			↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	9%		2%			-5%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frnt	0.899		0.999			
Flt Protected	0.988					0.999
Satd. Flow (prot)	1475	0	3500	0	0	3624
Flt Permitted	0.988					0.999
Satd. Flow (perm)	1475	0	3500	0	0	3624
Headway Factor	1.16	1.16	1.01	1.01	0.97	0.97
Link Speed (mph)	35		45			45
Link Distance (ft)	1492		3261			2754
Travel Time (s)	29.1		49.4			41.7
Volume (vph)	2	7	791	8	12	658
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.75	0.97	0.97	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	3	9	815	8	16	855
Lane Group Flow (vph)	12	0	823	0	0	871
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 36.7%      ICU Level of Service A  
 Analysis Period (min) 15





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Sign Control	Stop		Free			Free
Grade	9%		2%			-5%
Volume (veh/h)	2	7	791	8	12	658
Peak Hour Factor	0.75	0.75	0.97	0.97	0.77	0.77
Hourly flow rate (vph)	3	9	815	8	16	855
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1278	412			824	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1278	412			824	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			98	
cM capacity (veh/h)	154	589			802	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	12	544	280	300	570
Volume Left	3	0	0	16	0
Volume Right	9	0	8	0	0
cSH	362	1700	1700	802	1700
Volume to Capacity	0.03	0.32	0.16	0.02	0.34
Queue Length 95th (ft)	3	0	0	1	0
Control Delay (s)	15.3	0.0	0.0	0.7	0.0
Lane LOS	C			A	
Approach Delay (s)	15.3	0.0		0.2	
Approach LOS	C				

Intersection Summary					
Average Delay			0.2		
Intersection Capacity Utilization		36.7%		ICU Level of Service	A
Analysis Period (min)		15			

2005 Existing Conditions  
Friday P.M. Peak Hour

6: Woodland Road & School Access



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.953				0.960	
Flt Protected				0.988	0.966	
Satd. Flow (prot)	1437	0	0	1617	1670	0
Flt Permitted				0.988	0.966	
Satd. Flow (perm)	1437	0	0	1617	1670	0
Headway Factor	1.10	1.10	1.07	1.07	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	70	37	25	81	64	27
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	17%	10%	10%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	93	49	34	109	114	48
Lane Group Flow (vph)	142	0	0	143	162	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 24.2% ICU Level of Service A  
 Analysis Period (min) 15

2005 Existing Conditions  
Friday P.M. Peak Hour

6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	70	37	25	81	64	27
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Hourly flow rate (vph)	93	49	34	109	114	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			143		295	118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			143		295	118
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			98		83	95
cM capacity (veh/h)			1392		679	934

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	143	143	162
Volume Left	0	34	114
Volume Right	49	0	48
cSH	1700	1392	739
Volume to Capacity	0.08	0.02	0.22
Queue Length 95th (ft)	0	2	21
Control Delay (s)	0.0	2.0	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay		4.7	
Intersection Capacity Utilization		24.2%	ICU Level of Service A
Analysis Period (min)		15	

2005 Existing Conditions  
Friday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Fit Protected						
Satd. Flow (prot)	1790	0	0	1757	1511	0
Fit Permitted						
Satd. Flow (perm)	1790	0	0	1757	1511	0
Headway Factor	1.05	1.05	1.05	1.05	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	96	1	0	106	0	1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.72	0.72	0.80	0.80	0.25	0.25
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	133	1	0	133	0	4
Lane Group Flow (vph)	134	0	0	132	4	0
Sign Control	Free			Free	Stop	

Intersection Summary

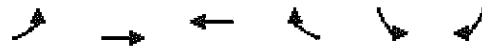
Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 15.6%      ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	1	
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	96	1	0	106	0	1
Peak Hour Factor	0.72	0.72	0.80	0.80	0.25	0.25
Hourly flow rate (vph)	133	1	0	132	0	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			135		267	134
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			135		267	134
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1437		723	915
<b>Direction Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	135	132	4			
Volume Left	0	0	0			
Volume Right	1	0	4			
cSH	1700	1437	915			
Volume to Capacity	0.08	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	9.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.1			
Intersection Capacity Utilization			15.6%		ICU Level of Service	A
Analysis Period (min)			15			

2005 Existing Conditions  
Friday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1835	1747	0	1629	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1835	1747	0	1629	0
Headway Factor	1.02	1.02	1.06	1.06	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	819		1342	
Travel Time (s)		16.0	14.0		26.1	
Volume (vph)	2	95	104	1	2	2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	2	113	135	1	4	4
Lane Group Flow (vph)	0	115	136	0	8	0
Sign Control		Free	Free		Stop	

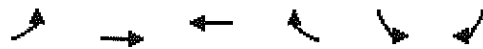
Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 16.6% ICU Level of Service A

Analysis Period (min) 15



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	2	95	104	1	2	2
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Hourly flow rate (vph)	2	113	135	1	4	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	136				254	136
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	136				254	136
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1448				734	913

Direction Lane #	EB 1	WB 1	SB 1
Volume Total	115	136	8
Volume Left	2	0	4
Volume Right	0	1	4
cSH	1448	1700	814
Volume to Capacity	0.00	0.08	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.2	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	0.2	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization	16.6%		ICU Level of Service A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.939	
Fit Protected	0.954			0.999		
Satd. Flow (prot)	1675	0	0	1844	1641	0
Fit Permitted	0.954			0.999		
Satd. Flow (perm)	1675	0	0	1844	1641	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	94	3	4	146	122	101
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	115	4	4	152	151	125
Lane Group Flow (vph)	119	0	0	156	276	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 24.6%      ICU Level of Service A  
 Analysis Period (min) 15



2005 Existing Conditions  
Friday P.M. Peak Hour

9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	94	3	4	146	122	101
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Hourly flow rate (vph)	115	4	4	152	151	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	373	213	275			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	373	213	275			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	100	100			
cM capacity (veh/h)	626	827	1288			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	118	156	275
Volume Left	115	4	0
Volume Right	4	0	125
cSH	631	1288	1700
Volume to Capacity	0.19	0.00	0.16
Queue Length 95th (ft)	17	0	0
Control Delay (s)	12.0	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	12.0	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

2005 Existing Conditions  
Friday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	8	8	8
Grade (%)		-4%			4%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.987						0.884			0.966	
Flt Protected					0.984			0.993			0.993	
Satd. Flow (prot)	0	1813	0	0	1736	0	0	1542	0	0	1556	0
Flt Permitted					0.984			0.993			0.993	
Satd. Flow (perm)	0	1813	0	0	1736	0	0	1542	0	0	1556	0
Headway Factor	1.02	1.02	1.02	1.07	1.07	1.07	1.05	1.05	1.05	1.19	1.19	1.19
Link Speed (mph)		45			45			45			15	
Link Distance (ft)		1402			1150			1446			153	
Travel Time (s)		21.2			17.4			21.9			7.0	
Volume (vph)	3	388	41	175	355	1	32	2	206	2	7	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.98	0.98	0.98	0.87	0.87	0.87	0.60	0.60	0.60
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	451	48	179	362	1	37	2	237	3	12	5
Lane Group Flow (vph)	0	502	0	0	542	0	0	276	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 79.9% ICU Level of Service D

Analysis Period (min) 15

2005 Existing Conditions  
Friday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			4%			1%			-1%	
Volume (veh/h)	3	388	41	175	355	1	32	2	206	2	7	3
Peak Hour Factor	0.86	0.86	0.86	0.98	0.98	0.98	0.87	0.87	0.87	0.60	0.60	0.60
Hourly flow rate (vph)	3	451	48	179	362	1	37	2	237	3	12	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	363			499			1213	1202	475	1440	1226	363
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	363			499			1213	1202	475	1440	1226	363
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			83			71	98	60	94	92	99
cM capacity (veh/h)	1195			1065			128	152	586	57	148	682

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	502	542	276	20
Volume Left	3	179	37	3
Volume Right	48	1	237	5
cSH	1195	1065	390	138
Volume to Capacity	0.00	0.17	0.71	0.14
Queue Length 95th (ft)	0	15	132	12
Control Delay (s)	0.1	4.3	33.7	35.4
Lane LOS	A	A	D	E
Approach Delay (s)	0.1	4.3	33.7	35.4
Approach LOS			D	E

Intersection Summary

Average Delay	9.2
Intersection Capacity Utilization	79.9%
ICU Level of Service	D
Analysis Period (min)	15

2005 Existing Conditions  
Friday P.M. Peak Hour

11: Route 940 & Route 390 (Left-In & Right-Out)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↖			↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)		-2%	2%		-4%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected		0.969				
Satd. Flow (prot)	0	1762	1783	0	0	1558
Fl <sub>t</sub> Permitted		0.969				
Satd. Flow (perm)	0	1762	1783	0	0	1558
Headway Factor	1.03	1.03	1.06	1.06	1.02	1.02
Link Speed (mph)		45	45		45	
Link Distance (ft)		571	145		193	
Travel Time (s)		8.7	2.2		2.9	
Volume (vph)	378	218	214	0	0	317
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.93	0.93	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	425	245	230	0	0	396
Lane Group Flow (vph)	0	670	230	0	0	396
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.3%
Analysis Period (min)	15
ICU Level of Service	A

2005 Existing Conditions  
Friday P.M. Peak Hour

11: Route 940 & Route 390 (Left-In & Right-Out)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕			↗
Sign Control		Free	Free		Stop	
Grade		-2%	2%		-4%	
Volume (veh/h)	378	218	214	0	0	317
Peak Hour Factor	0.89	0.89	0.93	0.93	0.80	0.80
Hourly flow rate (vph)	425	245	230	0	0	396
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	230				1324	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	230				1324	230
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	68				100	51
cM capacity (veh/h)	1338				117	804

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	670	230	396
Volume Left	425	0	0
Volume Right	0	0	396
cSH	1338	1700	804
Volume to Capacity	0.32	0.14	0.49
Queue Length 95th (ft)	34	0	69
Control Delay (s)	6.9	0.0	13.7
Lane LOS	A		B
Approach Delay (s)	6.9	0.0	13.7
Approach LOS			B

Intersection Summary			
Average Delay		7.8	
Intersection Capacity Utilization		50.3%	ICU Level of Service A
Analysis Period (min)		15	

2005 Existing Conditions  
Friday P.M. Peak Hour

12: Route 940 & Route 390 (Right-In & Left-Out)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	16	12
Grade (%)		-2%	2%		-4%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.994			
Flt Protected					0.950	
Satd. Flow (prot)	0	1819	1772	0	2006	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1819	1772	0	2006	0
Headway Factor	1.03	1.03	1.06	1.06	0.82	0.97
Link Speed (mph)		45	45		45	
Link Distance (ft)		145	1236		157	
Travel Time (s)		2.2	18.7		2.4	
Volume (vph)	0	218	214	9	5	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.89	0.89	0.93	0.93	0.80	0.80
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	245	230	10	6	0
Lane Group Flow (vph)	0	245	240	0	6	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 21.8% ICU Level of Service A  
 Analysis Period (min) 15

2005 Existing Conditions  
Friday P.M. Peak Hour

12: Route 940 & Route 390 (Right-In & Left-Out)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Sign Control		Free	Free		Stop	
Grade		-2%	2%		-4%	
Volume (veh/h)	0	218	214	9	5	0
Peak Hour Factor	0.89	0.89	0.93	0.93	0.80	0.80
Hourly flow rate (vph)	0	245	230	10	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	240				480	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	240				480	235
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1327				542	799

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	245	240	6
Volume Left	0	0	6
Volume Right	0	10	0
cSH	1700	1700	542
Volume to Capacity	0.14	0.14	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	11.7
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.7
Approach LOS			B

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		21.8%	ICU Level of Service A
Analysis Period (min)		15	

2005 Existing Conditions  
Friday P.M. Peak Hour

13: Route 940 & Route 191/Red Rock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.959			0.986			0.971	
Flt Protected		0.992			0.999			0.987			0.964	
Satd. Flow (prot)	0	1801	0	0	1708	0	0	1595	0	0	1694	0
Flt Permitted		0.992			0.999			0.987			0.964	
Satd. Flow (perm)	0	1801	0	0	1708	0	0	1595	0	0	1694	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	35	184	4	5	200	89	4	10	2	67	4	19
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	204	4	6	238	106	5	13	3	77	5	22
Lane Group Flow (vph)	0	247	0	0	350	0	0	19	0	0	104	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 49.1% ICU Level of Service A  
 Analysis Period (min) 15



2005 Existing Conditions  
Friday P.M. Peak Hour

13: Route 940 & Route 191/Red Rock Road













Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			-1%	
Volume (veh/h)	35	184	4	5	200	89	4	10	2	67	4	19
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Hourly flow rate (vph)	39	204	4	6	238	106	5	12	2	77	5	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	344			209			612	640	207	596	590	291
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	344			209			612	640	207	596	590	291
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	97	100	80	99	97
cM capacity (veh/h)	1215			1362			380	379	834	393	405	748

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	248	350	20	103
Volume Left	39	6	5	77
Volume Right	4	106	2	22
cSH	1215	1362	407	437
Volume to Capacity	0.03	0.00	0.05	0.24
Queue Length 95th (ft)	2	0	4	23
Control Delay (s)	1.5	0.2	14.3	15.8
Lane LOS	A	A	B	C
Approach Delay (s)	1.5	0.2	14.3	15.8
Approach LOS			B	C

Intersection Summary			
Average Delay		3.3	
Intersection Capacity Utilization	49.1%		ICU Level of Service A
Analysis Period (min)	15		

2005 Existing Conditions  
Saturday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2046	1830		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2046	1830		1792	1810	
Volume (vph)	331	15	0	672	512	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	345	16	0	707	551	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	345	16	0	707	551	0
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	12.6	12.6		25.7	25.7	
Effective Green, g (s)	14.6	14.6		28.7	28.7	
Actuated g/C Ratio	0.28	0.28		0.56	0.56	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	582	521		1003	1013	
v/s Ratio Prot	c0.17			c0.39	0.30	
v/s Ratio Perm		0.01				
v/c Ratio	0.59	0.03		0.70	0.54	
Uniform Delay, d1	15.8	13.2		8.2	7.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.0		3.3	1.4	
Delay (s)	17.4	13.3		11.6	8.5	
Level of Service	B	B		B	A	
Approach Delay (s)	17.2			11.6	8.5	
Approach LOS	B			B	A	
<b>Intersection Summary</b>						
HCM Average Control Delay			11.8		HCM Level of Service	B
HCM Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			51.3		Sum of lost time (s)	8.0
Intersection Capacity Utilization			90.7%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

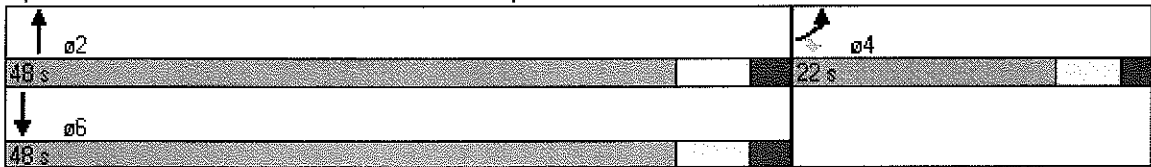


Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Volume (vph)	331	15	672	512
Lane Group Flow (vph)	345	16	707	551
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	22.0	22.0	48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	Min	Min
v/c Ratio	0.60	0.03	0.71	0.55
Control Delay	23.3	17.6	13.2	9.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.3	17.6	13.2	9.8
Queue Length 50th (ft)	90	4	146	99
Queue Length 95th (ft)	211	19	264	177
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	684	611	1185	1197
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	0.50	0.03	0.60	0.46

**Intersection Summary**

Cycle Length: 70  
 Actuated Cycle Length: 52.3  
 Natural Cycle: 50  
 Control Type: Semi Act-Uncoord

Splits and Phases: 15: I-80 WB Off-Ramp & Route 611



2005 Existing Conditions  
Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶	↕	↷	↶	↷
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3375		1753	3628
Flt Permitted	0.95	1.00	1.00		0.20	1.00
Satd. Flow (perm)	1883	1631	3375		363	3628
Volume (vph)	94	37	835	152	38	641
Peak-hour factor, PHF	0.90	0.90	0.94	0.94	0.94	0.94
Adj. Flow (vph)	104	41	888	162	40	682
RTOR Reduction (vph)	0	34	0	0	0	0
Lane Group Flow (vph)	104	7	1050	0	40	682
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.0	9.0	37.9		46.7	46.7
Effective Green, g (s)	12.0	12.0	41.9		50.7	50.7
Actuated g/C Ratio	0.17	0.17	0.59		0.72	0.72
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	320	277	2000		355	2602
v/s Ratio Prot	c0.06		c0.31		0.01	c0.19
v/s Ratio Perm		0.00			0.07	
v/c Ratio	0.32	0.03	0.52		0.11	0.26
Uniform Delay, d1	25.8	24.5	8.5		4.1	3.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.0	0.6		0.1	0.2
Delay (s)	26.4	24.5	9.1		4.3	3.6
Level of Service	C	C	A		A	A
Approach Delay (s)	25.9		9.1			3.7
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2005 Existing Conditions  
Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611

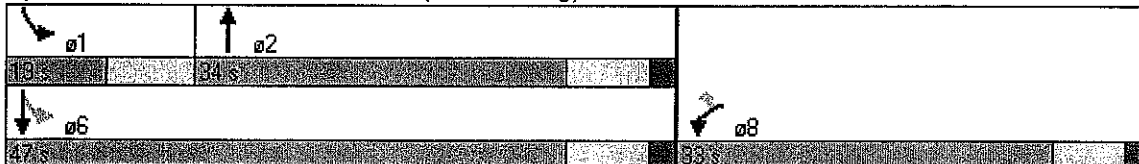


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↕	↙	↗
Volume (vph)	94	37	835	38	641
Lane Group Flow (vph)	104	41	1050	40	682
Turn Type	Perm		pm+pt		
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	33.0	33.0	34.0	13.0	47.0
Total Split (%)	41.3%	41.3%	42.5%	16.3%	58.8%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.29	0.12	0.50	0.13	0.27
Control Delay	18.7	8.1	9.9	5.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	8.1	9.9	5.8	4.3
Queue Length 50th (ft)	21	0	71	4	38
Queue Length 95th (ft)	72	21	232	13	75
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	683	617	2142	335	2703
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	0.15	0.07	0.49	0.12	0.25

Intersection Summary

Cycle Length: 80  
 Actuated Cycle Length: 68.4  
 Natural Cycle: 40  
 Control Type: Semi-Act-Uncoord

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611



2005 Existing Conditions  
Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	
Ideal Flow (vph)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3627	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3627	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	17	96	115	757	583	18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	18	100	120	789	601	19
Lane Group Flow (vph)	18	100	120	789	620	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.4%

ICU Level of Service A

Analysis Period (min): 15

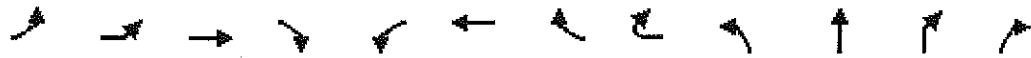
2005 Existing Conditions  
Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↖	↗	↖	↑↑	↑↑		
Sign Control	Stop			Free	Free		
Grade	4%			7%	-6%		
Volume (veh/h)	17	96	115	757	583	18	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97	
Hourly flow rate (vph)	18	100	120	789	601	19	
<b>Pedestrians</b>							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh							
Upstream signal (ft)	1111						
pX, platoon unblocked	0.99						
vC, conflicting volume	1244	310	620				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1238	310	620				
tC, single (s)	6.9	7.0	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	88	85	87				
cM capacity (veh/h)	143	680	957				
<b>Direction Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>NB 1</b>	<b>NB 2</b>	<b>NB 3</b>	<b>SB 1</b>	<b>SB 2</b>
Volume Total	18	100	120	394	394	401	219
Volume Left	18	0	120	0	0	0	0
Volume Right	0	100	0	0	0	0	19
cSH	143	680	957	1700	1700	1700	1700
Volume to Capacity	0.12	0.15	0.13	0.23	0.23	0.24	0.13
Queue Length 95th (ft)	10	13	11	0	0	0	0
Control Delay (s)	33.7	11.2	9.3	0.0	0.0	0.0	0.0
Lane LOS	D	B	A				
Approach Delay (s)	14.6		1.2	0.0			
Approach LOS	B						
<b>Intersection Summary</b>							
Average Delay	1.7						
Intersection Capacity Utilization	36.4%			ICU Level of Service	A		
Analysis Period (min)	15						

2005 Existing Conditions 3: Woodland Road/Private Driveway/Strickland's Road & Route 611  
 Saturday P.M. Peak Hour



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations			↕				↕		↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	15	13	13	13	13	11	12	12	12
Grade (%)			6%				5%				3%	
Total Lost time (s)			4.0				4.0		4.0	4.0		
Lane Util. Factor			1.00				1.00		1.00	0.95		
Frt			0.92				0.98		1.00	0.99		
Frt Protected			0.98				0.96		0.95	1.00		
Satd. Flow (prot)			1792				1773		1685	3442		
Frt Permitted			0.91				0.74		0.44	1.00		
Satd. Flow (perm)			1652				1372		781	3442		
Volume (vph)	5	1	1	12	49	4	6	1	13	699	2	62
Peak-hour factor, PHF	0.61	0.61	0.61	0.61	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98
Adj. Flow (vph)	8	2	2	20	53	4	7	1	13	713	2	63
RTOR Reduction (vph)	0	0	18	0	0	1	0	0	0	3	0	0
Lane Group Flow (vph)	0	0	14	0	0	64	0	0	13	775	0	0
Turn Type	Perm	Perm			Perm				Perm			
Protected Phases			4			8				2		
Permitted Phases	4	4			8				2			
Actuated Green, G (s)			4.9			4.9			44.8	44.8		
Effective Green, g (s)			6.9			6.9			48.3	48.3		
Actuated g/C Ratio			0.09			0.09			0.63	0.63		
Clearance Time (s)			6.0			6.0			7.5	7.5		
Vehicle Extension (s)			3.0			3.0			5.0	5.0		
Lane Grp Cap (vph)			148			123			491	2162		
v/s Ratio Prot										0.23		
v/s Ratio Perm			0.01			0.05			0.02			
v/c Ratio			0.09			0.52			0.03	0.36		
Uniform Delay, d1			32.1			33.4			5.4	6.9		
Progression Factor			1.00			1.00			1.00	1.00		
Incremental Delay, d2			0.3			3.9			0.0	0.2		
Delay (s)			32.4			37.2			5.5	7.1		
Level of Service			C			D			A	A		
Approach Delay (s)			32.4			37.2				7.0		
Approach LOS			C			D				A		
<b>Intersection Summary</b>												
HCM Average Control Delay			7.8			HCM Level of Service			A			
HCM Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			76.9			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			44.7%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												



2005 Existing Conditions 3: Woodland Road/Private Driveway/Strickland's Road & Route 611  
 Saturday P.M. Peak Hour



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↔	↔			↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11	11	11
Grade (%)			-7%			-2%		
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00		
Fr <sub>t</sub>		1.00	1.00			0.93		
Fl <sub>t</sub> Protected		0.95	1.00			0.98		
Satd. Flow (prot)		1770	3650			1655		
Fl <sub>t</sub> Permitted		0.30	1.00			0.98		
Satd. Flow (perm)		558	3650			1655		
Volume (vph)	1	4	540	13	1	1	1	1
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	4	551	13	1	1	1	1
RTOR Reduction (vph)	0	0	1	0	0	1	0	0
Lane Group Flow (vph)	0	5	563	0	0	3	0	0
Turn Type	pm+pt	pm+pt			Perm			
Protected Phases	1	1	6			9		
Permitted Phases	6	6			9			
Actuated Green, G (s)		51.3	51.3			1.2		
Effective Green, g (s)		54.8	54.8			3.2		
Actuated g/C Ratio		0.71	0.71			0.04		
Clearance Time (s)		5.5	7.5			6.0		
Vehicle Extension (s)		3.0	5.0			3.0		
Lane Grp Cap (vph)		437	2601			69		
v/s Ratio Prot		0.00	0.15					
v/s Ratio Perm		0.01				0.00		
v/c Ratio		0.01	0.22			0.04		
Uniform Delay, d1		3.6	3.8			35.4		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.0	0.1			0.3		
Delay (s)		3.7	3.8			35.6		
Level of Service		A	A			D		
Approach Delay (s)			3.8			35.6		
Approach LOS			A			D		

Intersection Summary

2005 Existing Conditions 3: Woodland Road/Private Driveway/Strickland's Road & Route 611  
 Saturday P.M. Peak Hour



Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBL	SBT	SWL
Lane Configurations			↕		↕	↗	↕		↗	↕	↘
Volume (vph)	5	1	1	49	4	13	699	1	4	540	1
Lane Group Flow (vph)	0	0	32	0	65	13	778	0	5	564	4
Turn Type	Perm	Perm		Perm		Perm		pm+pt	pm+pt		
Protected Phases			4		8		2	1	1	6	9
Permitted Phases	4	4		8		2		6	6		
Detector Phases	4	4	4	8	8	2	2	1	1	6	9
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	10.0	4.0	4.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	17.5	17.5	9.5	9.5	17.5	13.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.5	34.5	12.5	12.5	47.0	19.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	34.5%	34.5%	12.5%	12.5%	47.0%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0
Lead/Lag						Lag	Lag	Lead	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min	None	None	Min	None
v/c Ratio			0.11		0.27	0.02	0.29		0.01	0.19	0.02
Control Delay			11.8		17.1	9.2	6.7		7.8	4.1	22.5
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay			11.8		17.1	9.2	6.7		7.8	4.1	22.5
Queue Length 50th (ft)			1		7	0	0		0	0	0
Queue Length 95th (ft)			16		61	15	203		6	100	10
Internal Link Dist (ft)			105		2012		2203			2327	625
Turn Bay Length (ft)						73			183		
Base Capacity (vph)			625		523	628	2770		368	3107	341
Starvation Cap Reductn			0		0	0	0		0	0	0
Spillback Cap Reductn			0		0	0	0		0	0	0
Storage Cap Reductn			0		0	0	0		0	0	0
Reduced v/c Ratio			0.05		0.12	0.02	0.28		0.01	0.18	0.01

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 66.4

Natural Cycle: 55

Control Type: Semi-Act-Uncoord

Splits and Phases: 3: Woodland Road/Private Driveway/Strickland's Road & Route 611

01	02	04	09
12.5 s	34.5 s	64 s	19 s
06	08		
17 s	34 s		



2005 Existing Conditions  
 Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	12	12	12	12	12	12
Grade (%)	2%			8%			1%			-1%		
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt	0.899			0.936								
Flt Protected	0.988			0.991								
Satd. Flow (prot)	0	1693	0	0	1659	0	0	3522	0	0	3557	0
Flt Permitted	0.988			0.991								
Satd. Flow (perm)	0	1693	0	0	1659	0	0	3522	0	0	3557	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.01	1.01	1.01	0.99	0.99	0.99
Link Speed (mph)	35			35			45			45		
Link Distance (ft)	158			1027			2407			3261		
Travel Time (s)	3.1			20.0			36.5			49.4		
Volume (vph)	1	0	3	3	6	8	6	705	1	1	551	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	2	0	6	8	15	21	7	766	1	1	619	1
Lane Group Flow (vph)	0	8	0	0	44	0	0	774	0	0	621	0
Sign Control	Stop			Stop			Free			Free		

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.7% ICU Level of Service A

Analysis Period (min) 15

2005 Existing Conditions  
Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%			-1%	
Volume (veh/h)	1	0	3	3	6	8	6	705	1	1	551	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	2	0	6	8	15	21	7	766	1	1	619	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1046	1402	310	1098	1402	384	620			767		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1046	1402	310	1098	1402	384	620			767		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	95	89	97	99			100		
cM capacity (veh/h)	160	137	686	164	137	614	956			842		

Direction/Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	44	390	384	311	311
Volume Left	2	8	7	0	1	0
Volume Right	6	21	0	1	0	1
cSH	377	226	956	1700	842	1700
Volume to Capacity	0.02	0.19	0.01	0.23	0.00	0.18
Queue Length 95th (ft)	2	17	1	0	0	0
Control Delay (s)	14.8	24.7	0.2	0.0	0.0	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.8	24.7	0.1		0.0	
Approach LOS	B	C				

Intersection Summary		
Average Delay	0.9	
Intersection Capacity Utilization	33.7%	ICU Level of Service A
Analysis Period (min)	15	

2005 Existing Conditions  
Saturday P.M. Peak Hour

5: Grange Road & Route 611



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑↑			↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	9%		2%			-5%
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.954		0.997			
Flt Protected	0.968					0.999
Satd. Flow (prot)	1533	0	3493	0	0	3624
Flt Permitted	0.968					0.999
Satd. Flow (perm)	1533	0	3493	0	0	3624
Headway Factor	1.16	1.16	1.01	1.01	0.97	0.97
Link Speed (mph)	35		45			45
Link Distance (ft)	1492		3261			2764
Travel Time (s)	29.1		49.4			41.7
Volume (vph)	15	8	699	15	7	538
Peak Hour Factor	0.72	0.72	0.94	0.94	0.95	0.95
Adj. Flow (vph)	21	11	744	16	7	566
Lane Group Flow (vph)	32	0	760	0	0	573
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 29.8% ICU Level of Service A  
 Analysis Period (min) 15

2005 Existing Conditions  
 Saturday P.M. Peak Hour

5: Grange Road & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑↓		↔	
Sign Control	Stop		Free		Free	
Grade	9%		2%		-5%	
Volume (veh/h)	15	8	699	15	7	538
Peak Hour Factor	0.72	0.72	0.94	0.94	0.95	0.95
Hourly flow rate (vph)	21	11	744	16	7	566
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1049	380			760	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1049	380			760	
tC, single (s)	6.9	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	98			99	
cM capacity (veh/h)	220	617			848	
<b>Direction Lane #</b>						
	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	32	496	264	196	378	
Volume Left	21	0	0	7	0	
Volume Right	11	0	16	0	0	
cSH	283	1700	1700	848	1700	
Volume to Capacity	0.11	0.29	0.16	0.01	0.22	
Queue Length 95th (ft)	9	0	0	1	0	
Control Delay (s)	19.3	0.0	0.0	0.4	0.0	
Lane LOS	C		A			
Approach Delay (s)	19.3	0.0		0.1		
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay			0.5			
Intersection Capacity Utilization			29.8%		ICU Level of Service A	
Analysis Period (min)			15			

2005 Existing Conditions  
Saturday P.M. Peak Hour

6: Woodland Road & School Access



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	1%		-3%		0%	
Turning Speed (mph)	9		15		15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987					
Flt Protected			0.998		0.950	
Satd. Flow (prot)	1707	0	0	1761	1711	0
Flt Permitted			0.998		0.950	
Satd. Flow (perm)	1707	0	0	1761	1711	0
Headway Factor	1.10	1.10	1.07	1.07	1.04	1.04
Link Speed (mph)	40		40		25	
Link Distance (ft)	2092		650		499	
Travel Time (s)	35.7		11.1		13.6	
Volume (vph)	60	6	2	55	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Adj. Flow (vph)	65	7	2	61	8	0
Lane Group Flow (vph)	72	0	0	63	8	0
Sign Control	Free		Free		Stop	

Intersection Summary

Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	14.5%
ICU Level of Service	A
Analysis Period (min)	15



2005 Existing Conditions  
Saturday P.M. Peak Hour

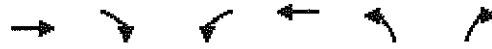
6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Sign Control	Free		Free		Stop	
Grade	1%		-3%		0%	
Volume (veh/h)	60	6	2	55	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Hourly flow rate (vph)	65	7	2	61	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72		134	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		134	68
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1528		858	995
Direction Lane #	EB 1	WB 1	NB 1			
Volume Total	72	63	8			
Volume Left	0	2	8			
Volume Right	7	0	0			
cSH	1700	1528	858			
Volume to Capacity	0.04	0.00	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.3	9.2			
Lane LOS			A			A
Approach Delay (s)	0.0	0.3	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			14.5%	ICU Level of Service	A	
Analysis Period (min)			15			

2005 Existing Conditions  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	1%			1%		-1%
Turning Speed (mph)	9		15	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.996			0.910		
Fr <sub>t</sub> Protected				0.997	0.984	
Satd. Flow (prot)	1784	0	0	1786	1565	0
Fr <sub>t</sub> Permitted				0.997	0.984	
Satd. Flow (perm)	1784	0	0	1786	1565	0
Headway Factor	1.05	1.05	1.05	1.05	1.09	1.09
Link Speed (mph)	40			40		35
Link Distance (ft)	650			936		704
Travel Time (s)	11.1			16.0		13.7
Volume (vph)	58	2	3	55	2	4
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Adj. Flow (vph)	72	2	4	65	4	8
Lane Group Flow (vph)	74	0	0	69	12	0
Sign Control	Free			Free		Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 15.3% ICU Level of Service A

Analysis Period (min) 15

2005 Existing Conditions  
Saturday P.M. Peak Hour

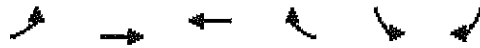
7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕		↕
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	58	2	3	55	2	4
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Hourly flow rate (vph)	72	2	4	65	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			74		145	73
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			74		145	73
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1525		846	989
Direction Lane #						
	EB 1	WB 1	NB 1			
Volume Total	74	68	12			
Volume Left	0	4	4			
Volume Right	2	0	8			
cSH	1700	1525	936			
Volume to Capacity	0.04	0.00	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.4	8.9			
Lane LOS			A	A		
Approach Delay (s)	0.0	0.4	8.9			
Approach LOS			A	A		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			15.3%	ICU Level of Service	A	
Analysis Period (min)			15			

2005 Existing Conditions  
Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane/Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)		-4%	2%		-6%	
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.982		0.949	
Flt Protected		0.998			0.970	
Satd. Flow (prot)	0	1833	1751	0	1648	0
Flt Permitted		0.998			0.970	
Satd. Flow (perm)	0	1833	1751	0	1648	0
Headway Factor	1.02	1.02	1.06	1.06	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	819		1342	
Travel Time (s)		16.0	14.0		26.1	
Volume (vph)	2	60	56	8	3	2
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Adj. Flow (vph)	2	63	60	9	5	3
Lane Group Flow (vph)	0	65	69	0	8	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	14.8%
ICU Level of Service	A
Analysis Period (min)	15

2005 Existing Conditions  
Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	2	60	56	8	3	2
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	2	63	60	9	5	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	69				132	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	69				132	65
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1532				861	1000
Direction Lane #						
	EB 1	WB 1	SB 1			
Volume Total	65	69	8			
Volume Left	2	0	5			
Volume Right	0	9	3			
cSH	1532	1700	912			
Volume to Capacity	0.00	0.04	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.2	0.0	9.0			
Lane LOS	A		A			
Approach Delay (s)	0.2	0.0	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			14.8%	ICU Level of Service	A	
Analysis Period (min)			15			

2005 Existing Conditions  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998			0.948		
Frt Protected	0.953			0.999		
Satd. Flow (prot)	1678	0	0	1844	1673	0
Frt Permitted	0.953			0.999		
Satd. Flow (perm)	1678	0	0	1844	1673	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	62	1	3	105	98	61
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Adj. Flow (vph)	76	1	4	140	114	71
Lane Group Flow (vph)	77	0	0	144	185	0
Sign Control	Stop			Free	Free	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 19.0%      ICU Level of Service A  
 Analysis Period (min) 15

2005 Existing Conditions  
Saturday P.M. Peak Hour

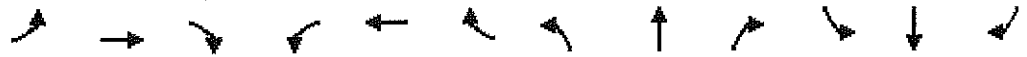
9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↓	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	62	1	3	105	98	61
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Hourly flow rate (vph)	76	1	4	140	114	71
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	297	149	185			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297	149	185			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	100	100			
cM capacity (veh/h)	692	897	1390			
<b>Direction Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	77	144	185			
Volume Left	76	4	0			
Volume Right	1	0	71			
cSH	695	1390	1700			
Volume to Capacity	0.11	0.00	0.11			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	10.8	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.8	0.2	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			2.1			
Intersection Capacity Utilization			19.0%	ICU Level of Service	A	
Analysis Period (min)			15			

2005 Existing Conditions  
Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	8	8	8
Grade (%)	-4%			4%			1%			-1%		
Turning Speed (mph)	15		9	15		9	15		9	15		9
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	0.993						0.879			0.882		
Frt Protected	0.999			0.984			0.995			0.994		
Satd. Flow (prot)	0	1822	0	0	1736	0	0	1567	0	0	1422	0
Frt Permitted	0.999			0.984			0.995			0.994		
Satd. Flow (perm)	0	1822	0	0	1736	0	0	1567	0	0	1422	0
Headway Factor	1.02	1.02	1.02	1.07	1.07	1.07	1.05	1.05	1.05	1.19	1.19	1.19
Link Speed (mph)	45			45			45			15		
Link Distance (ft)	1402			1150			1446			153		
Travel Time (s)	21.2			17.4			21.9			7.0		
Volume (vph)	3	273	16	143	291	0	16	1	150	1	0	6
Peak Hour Factor	0.84	0.84	0.84	0.93	0.93	0.93	0.71	0.71	0.71	0.88	0.88	0.88
Adj. Flow (vph)	4	325	19	154	313	0	23	1	211	1	0	7
Lane Group Flow (vph)	0	348	0	0	467	0	0	235	0	0	8	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary

Area Type: Other

Control Type: Unsignalized

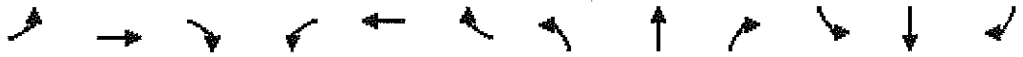
Intersection Capacity Utilization 61.1% ICU Level of Service B

Analysis Period (min) 15



2005 Existing Conditions  
Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	-4%			4%			1%			-1%		
Volume (veh/h)	3	273	16	143	291	0	16	1	150	1	0	6
Peak Hour Factor	0.84	0.84	0.84	0.93	0.93	0.93	0.71	0.71	0.71	0.88	0.88	0.88
Hourly flow rate (vph)	4	325	19	154	313	0	23	1	211	1	0	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type						None			None			
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	313			344			969	962	335	1174	972	313
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	313			344			969	962	335	1174	972	313
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
iF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			87			89	99	70	99	100	99
cM capacity (veh/h)	1247			1215			208	223	707	106	220	727
Direction Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	348	467	235	8								
Volume Left	4	154	23	1								
Volume Right	19	0	211	7								
cSH	1247	1215	569	396								
Volume to Capacity	0.00	0.13	0.41	0.02								
Queue Length 95th (ft)	0	11	50	2								
Control Delay (s)	0.1	3.6	15.7	14.3								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.1	3.6	15.7	14.3								
Approach LOS			C	B								
Intersection Summary												
Average Delay			5.2									
Intersection Capacity Utilization			61.1%		ICU Level of Service		B					
Analysis Period (min)			15									

2005 Existing Conditions  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390 (Left-In & Right-Out)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕			↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)		-2%	2%		-4%	
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.865
Flt Protected		0.973				
Satd. Flow (prot)	0	1752	1783	0	0	1589
Flt Permitted		0.973				
Satd. Flow (perm)	0	1752	1783	0	0	1589
Headway Factor	1.03	1.03	1.06	1.06	1.02	1.02
Link Speed (mph)		45	45		45	
Link Distance (ft)		571	145		193	
Travel Time (s)		8.7	2.2		2.9	
Volume (vph)	232	192	187	0	0	247
Peak Hour Factor	0.79	0.79	0.84	0.84	0.81	0.81
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Adj. Flow (vph)	294	243	223	0	0	305
Lane Group Flow (vph)	0	537	223	0	0	305
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.5%
Analysis Period (min)	15
	ICU Level of Service A

2005 Existing Conditions  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390 (Left-In & Right-Out)



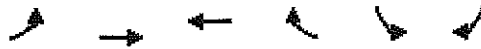
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑			↗
Sign Control		Free	Free		Stop	
Grade		-2%	2%		-4%	
Volume (veh/h)	232	192	187	0	0	247
Peak Hour Factor	0.79	0.79	0.84	0.84	0.81	0.81
Hourly flow rate (vph)	294	243	223	0	0	305
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	223				1053	223
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	223				1053	223
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				100	63
cM capacity (veh/h)	1340				196	817

Direction Lane #	EB 1	WB 1	SB 1
Volume Total	537	223	305
Volume Left	294	0	0
Volume Right	0	0	305
cSH	1340	1700	817
Volume to Capacity	0.22	0.13	0.37
Queue Length 95th (ft)	21	0	43
Control Delay (s)	5.6	0.0	12.0
Lane LOS	A		B
Approach Delay (s)	5.6	0.0	12.0
Approach LOS			B

<b>Intersection Summary</b>			
Average Delay		6.3	
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

2005 Existing Conditions  
 Saturday P.M. Peak Hour

12: Route 940 & Route 390 (Right-In & Left-Out)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	16	12
Grade (%)		-2%	2%		-4%	
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.994				
Flt Protected					0.950	
Satd. Flow (prot)	0	1819	1772	0	2046	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1819	1772	0	2046	0
Headway Factor	1.03	1.03	1.06	1.06	0.82	0.97
Link Speed (mph)		45	45		45	
Link Distance (ft)		145	1236		157	
Travel Time (s)		2.2	18.7		2.4	
Volume (vph)	0	192	187	8	28	0
Peak Hour Factor	0.79	0.79	0.84	0.84	0.81	0.81
Adj. Flow (vph)	0	243	223	10	35	0
Lane Group Flow (vph)	0	243	233	0	35	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.3%
ICU Level of Service	A
Analysis Period (min)	15

2005 Existing Conditions  
Saturday P.M. Peak Hour

12: Route 940 & Route 390 (Right-In & Left-Out)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Sign Control		Free	Free		Stop	
Grade		-2%	2%		-4%	
Volume (veh/h)	0	192	187	8	28	0
Peak Hour Factor	0.79	0.79	0.84	0.84	0.81	0.81
Hourly flow rate (vph)	0	243	223	10	35	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	232				470	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232				470	227
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1336				552	812
Direction Lane #	EB 1	WB 1	SB 1			
Volume Total	243	232	35			
Volume Left	0	0	35			
Volume Right	0	10	0			
cSH	1700	1700	552			
Volume to Capacity	0.14	0.14	0.06			
Queue Length 95th (ft)	0	0	5			
Control Delay (s)	0.0	0.0	12.0			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.0			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			0.8			
Intersection Capacity Utilization		20.3%		ICU Level of Service		A
Analysis Period (min)			15			

2005 Existing Conditions  
Saturday P.M. Peak Hour

13: Route 940 & Route 191/Red Rock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Turning Speed (mph)	15		9	15		9	15		9	15		9
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		0.998			0.962			0.973			0.964	
Frt Protected		0.992			0.999			0.983			0.969	
Satd. Flow (prot)	0	1783	0	0	1713	0	0	1567	0	0	1690	0
Frt Permitted		0.992			0.999			0.983			0.969	
Satd. Flow (perm)	0	1783	0	0	1713	0	0	1567	0	0	1690	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	35	181	4	4	165	66	3	4	2	64	11	27
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	39	203	4	5	204	81	7	9	4	73	13	31
Lane Group Flow (vph)	0	246	0	0	290	0	0	20	0	0	116	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

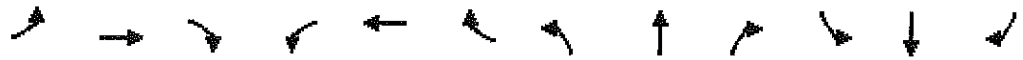
Intersection Capacity Utilization 45.0%

ICU Level of Service A

Analysis Period (min) 15

2005 Existing Conditions  
Saturday P.M. Peak Hour

13: Route 940 & Route 191/Red Rock Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	-2%			2%			-3%			-1%		
Volume (veh/h)	35	181	4	4	165	66	3	4	2	64	11	27
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Hourly flow rate (vph)	39	203	4	5	204	81	7	9	4	73	12	31
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	285			208			576	579	206	547	541	244
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	285			208			576	579	206	547	541	244
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	98	99	83	97	96
cM capacity (veh/h)	1271			1363			393	412	835	426	433	794
Direction Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	247	290	20	116								
Volume Left	39	5	7	73								
Volume Right	4	81	4	31								
cSH	1271	1363	456	487								
Volume to Capacity	0.03	0.00	0.04	0.24								
Queue Length 95th (ft)	2	0	3	23								
Control Delay (s)	1.5	0.2	13.3	14.7								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.5	0.2	13.3	14.7								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			3.5									
Intersection Capacity Utilization			45.0%	ICU Level of Service	A							
Analysis Period (min)			15									

***2007 BASE CONDITIONS***





2007 Base Conditions  
Friday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↘		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2026	1813		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2026	1813		1792	1810	
Volume (vph)	688	14	0	1039	1062	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	782	16	0	1142	1207	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	782	16	0	1142	1207	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.0	14.0		33.0	33.0	
Effective Green, g (s)	16.0	16.0		36.0	36.0	
Actuated g/C Ratio	0.27	0.27		0.60	0.60	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	540	483		1075	1086	
v/s Ratio Prot	c0.39			0.64	c0.67	
v/s Ratio Perm		0.01				
v/c Ratio	1.45	0.03		1.06	1.11	
Uniform Delay, d1	22.0	16.3		12.0	12.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	211.9	0.0		45.6	63.2	
Delay (s)	233.9	16.3		57.6	75.2	
Level of Service	F	B		E	E	
Approach Delay (s)	229.6			57.6	75.2	
Approach LOS	F			E	E	

Intersection Summary			
HCM Average Control Delay	108.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	158.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

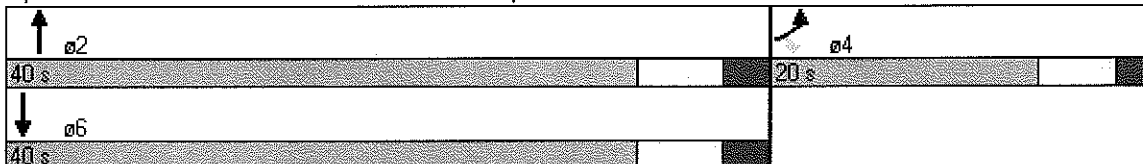


Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Volume (vph)	688	14	1039	1062
Lane Group Flow (vph)	782	16	1142	1207
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	20.0	20.0	40.0	40.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	Min	Min
v/c Ratio	1.45	0.03	1.06	1.11
Control Delay	235.4	16.6	61.6	79.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	235.4	16.6	61.6	79.7
Queue Length 50th (ft)	~398	4	~471	~517
Queue Length 95th (ft)	#569	16	#684	#708
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	540	483	1075	1086
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	1.45	0.03	1.06	1.11

**Intersection Summary**

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Natural Cycle: 120  
 Control Type: Semi Act-Uncoord  
 ~ 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: I-80 WB Off-Ramp & Route 611**





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↙	↑↑		↘	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3332		1753	3628
Flt Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1883	1631	3332		213	3628
Volume (vph)	302	142	1334	283	119	1006
Peak-hour factor, PHF	0.83	0.83	0.98	0.98	0.83	0.83
Adj. Flow (vph)	364	171	1361	289	143	1212
RTOR Reduction (vph)	0	91	0	0	0	0
Lane Group Flow (vph)	364	80	1650	0	143	1212
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	18.2	18.2	26.7		37.9	37.9
Effective Green, g (s)	21.2	21.2	30.7		41.9	41.9
Actuated g/C Ratio	0.30	0.30	0.43		0.59	0.59
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	561	486	1439		281	2138
v/s Ratio Prot	c0.19		c0.50		0.05	c0.33
v/s Ratio Perm		0.05			0.25	
v/c Ratio	0.65	0.17	1.15		0.51	0.57
Uniform Delay, d1	21.7	18.4	20.2		15.0	9.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.6	0.2	74.6		1.5	0.7
Delay (s)	24.3	18.6	94.8		16.4	9.7
Level of Service	C	B	F		B	A
Approach Delay (s)	22.5		94.8			10.4
Approach LOS	C		F			B

Intersection Summary				
HCM Average Control Delay		51.6	HCM Level of Service	D
HCM Volume to Capacity ratio		0.91		
Actuated Cycle Length (s)		71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization		79.2%	ICU Level of Service	D
Analysis Period (min)		15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↕	↘	↗
Volume (vph)	302	142	1334	119	1006
Lane Group Flow (vph)	364	171	1650	143	1212
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	33.0	33.0	34.0	13.0	47.0
Total Split (%)	41.3%	41.3%	42.5%	16.3%	58.8%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.64	0.29	1.13	0.47	0.58
Control Delay	26.9	7.5	90.2	14.2	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	7.5	90.2	14.2	11.5
Queue Length 50th (ft)	141	13	~487	26	159
Queue Length 95th (ft)	200	45	#702	59	236
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	709	694	1466	312	2160
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	0.51	0.25	1.13	0.46	0.56

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 70.1

Natural Cycle: 65

Control Type: Semi Act-Uncoord

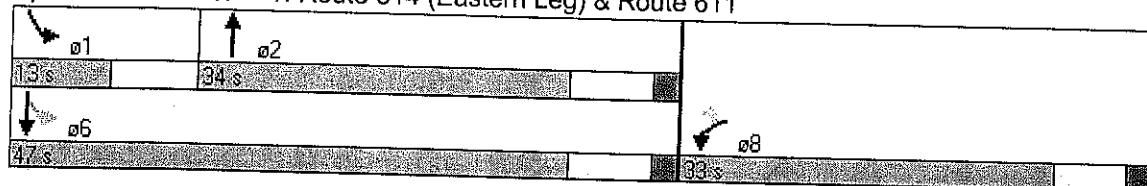
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611



2007 Base Conditions  
Friday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷↷	↷↷	↷
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3588	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3588	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	11	164	328	1148	961	42
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	16	245	345	1208	1264	55
Lane Group Flow (vph)	16	245	345	1208	1319	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 59.4% ICU Level of Service B  
 Analysis Period (min) 15

2007 Base Conditions  
Friday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



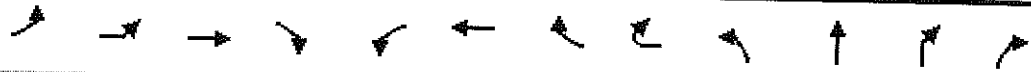
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↑↑	↙↘	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	11	164	328	1148	961	42
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Hourly flow rate (vph)	16	245	345	1208	1264	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.70					
vC, conflicting volume	2587	660	1320			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2843	660	1320			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	39	34			
cM capacity (veh/h)	3	401	520			

Direction Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	16	245	345	604	604	843	477
Volume Left	16	0	345	0	0	0	0
Volume Right	0	245	0	0	0	0	55
cSH	3	401	520	1700	1700	1700	1700
Volume to Capacity	5.35	0.61	0.66	0.36	0.36	0.50	0.28
Queue Length 95th (ft)	Err	98	121	0	0	0	0
Control Delay (s)	Err	27.1	24.6	0.0	0.0	0.0	0.0
Lane LOS	F	D	C				
Approach Delay (s)	653.9		5.5			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay		57.2	
Intersection Capacity Utilization		59.4%	ICU Level of Service B
Analysis Period (min)		15	

2007 Base Conditions  
Friday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations			↕			↕			↕	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	15	13	13	13	13	11	12	12	12
Grade (%)			6%			5%				3%		
Total Lost time (s)			4.0			4.0			4.0	4.0		
Lane Util. Factor			1.00			1.00			1.00	0.95		
Frt			0.96			0.94			1.00	0.99		
Fit Protected			0.98			0.97			0.95	1.00		
Satd. Flow (prot)			1866			1722			1685	3445		
Fit Permitted			0.88			0.82			0.24	1.00		
Satd. Flow (perm)			1674			1455			434	3445		
Volume (vph)	4	1	2	3	103	7	82	1	5	1063	1	90
Peak-hour factor, PHF	0.56	0.56	0.56	0.56	0.89	0.89	0.89	0.89	0.99	0.99	0.99	0.99
Adj. Flow (vph)	7	2	4	5	116	8	92	1	5	1074	1	91
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	0	5	0	0
Lane Group Flow (vph)	0	0	14	0	0	217	0	0	5	1161	0	0
Turn Type	Perm	Perm			Perm				Perm			
Protected Phases			4			8						
Permitted Phases	4	4			8					2		
Actuated Green, G (s)			14.6			14.6			32.7	32.7		
Effective Green, g (s)			16.6			16.6			36.2	36.2		
Actuated g/C Ratio			0.22			0.22			0.47	0.47		
Clearance Time (s)			6.0			6.0			7.5	7.5		
Vehicle Extension (s)			3.0			3.0			5.0	5.0		
Lane Grp Cap (vph)			361			314			204	1622		
v/s Ratio Prot												
v/s Ratio Perm			0.01			0.15				0.34		
v/c Ratio			0.04			0.69			0.02	0.72		
Uniform Delay, d1			23.8			27.8			10.9	16.2		
Progression Factor			1.00			1.00			1.00	1.00		
Incremental Delay, d2			0.0			6.4			0.1	1.9		
Delay (s)			23.9			34.2			11.0	18.1		
Level of Service			C			C			B	B		
Approach Delay (s)			23.9			34.2				18.1		
Approach LOS			C			C				B		

**Intersection Summary**

HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



2007 Base Conditions  
Friday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↔	↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11	11	11
Grade (%)			-7%			-2%		
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00		
Frnt		1.00	1.00			0.93		
Fit Protected		0.95	1.00			0.98		
Satd. Flow (prot)		1770	3659			1655		
Fit Permitted		0.12	1.00			0.98		
Satd. Flow (perm)		216	3659			1655		
Volume (vph)	1	54	897	7	1	1	1	1
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	66	1094	9	1	1	1	1
RTOR Reduction (vph)	0	0	0	0	0	1	0	0
Lane Group Flow (vph)	0	67	1103	0	0	3	0	0
Turn Type	pm+pt	pm+pt			Perm			
Protected Phases	1	1	6			9		
Permitted Phases	6	6			9			
Actuated Green, G (s)		41.8	41.8			1.0		
Effective Green, g (s)		45.3	45.3			3.0		
Actuated g/C Ratio		0.59	0.59			0.04		
Clearance Time (s)		5.5	7.5			6.0		
Vehicle Extension (s)		3.0	5.0			3.0		
Lane Grp Cap (vph)		230	2155			65		
v/s Ratio Prot		0.02	0.30					
v/s Ratio Perm		0.15				0.00		
v/c Ratio		0.29	0.51			0.05		
Uniform Delay, d1		10.1	9.3			35.6		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.7	0.4			0.3		
Delay (s)		10.8	9.7			35.9		
Level of Service		B	A			D		
Approach Delay (s)			9.8			35.9		
Approach LOS			A			D		
<b>Intersection Summary</b>								

2007 Base Conditions 3: Woodland Road/Private Driveway/Stricklands Road & Route 611  
 Friday P.M. Peak Hour



Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBL	SBT	SWL
Lane Configurations			↕		↕	↗	↕		↗	↕	↘
Volume (vph)	4	1	2	103	7	5	1063	1	54	897	1
Lane Group Flow (vph)	0	0	18	0	217	5	1166	0	67	1103	4
Turn Type	Perm	Perm		Perm		Perm		pm+pt	pm+pt		
Protected Phases			4		8		2	1	1	6	9
Permitted Phases	4	4		8		2		6	6		
Detector Phases	4	4	4	8	8	2	2	1	1	6	9
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	10.0	4.0	4.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	17.5	17.5	9.5	9.5	17.5	13.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0	41.0	41.0	13.0	13.0	54.0	19.0
Total Split (%)	27.0%	27.0%	27.0%	27.0%	27.0%	41.0%	41.0%	13.0%	13.0%	54.0%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0
Lead/Lag						Lag	Lag	Lead	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min	None	None	Min	None
v/c Ratio			0.05		0.63	0.03	0.65		0.24	0.49	0.02
Control Delay			21.2		33.9	15.4	17.9		10.1	9.6	35.0
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay			21.2		33.9	15.4	17.9		10.1	9.6	35.0
Queue Length 50th (ft)			4		86	1	203		10	114	1
Queue Length 95th (ft)			13		190	10	#417		35	242	12
Internal Link Dist (ft)			105		2012		2203			2327	625
Turn Bay Length (ft)						73			183		
Base Capacity (vph)			513		451	202	1866		296	2395	295
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		0.48	0.02	0.62		0.23	0.46	0.01

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 70.1

Natural Cycle: 70

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Woodland Road/Private Driveway/Stricklands Road & Route 611

13 s	41 s	27 s	19 s
54 s	27 s		



2007 Base Conditions  
Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%			-1%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Fr <sub>t</sub>		0.865			0.888							
Fl <sub>t</sub> Protected					0.996		0.950			0.950		
Satd. Flow (prot)	0	1648	0	0	1582	0	1702	3522	0	1670	3455	0
Fl <sub>t</sub> Permitted					0.996		0.950			0.950		
Satd. Flow (perm)	0	1648	0	0	1582	0	1702	3522	0	1670	3455	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		158			1027			2407			3261	
Travel Time (s)		3.1			20.0			36.5			49.4	
Volume (vph)	0	0	3	1	1	10	3	1145	1	5	954	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	4	2	2	20	3	1180	1	6	1149	1
Lane Group Flow (vph)	0	4	0	0	24	0	3	1181	0	6	1150	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 41.7%

ICU Level of Service A

Analysis Period (min) 15

2007 Base Conditions  
Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%			-1%	
Volume (veh/h)	0	0	3	1	1	10	3	1145	1	5	954	1
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	4	2	2	20	3	1180	1	6	1149	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1779	2350	575	1778	2350	591	1151			1181		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1779	2350	575	1778	2350	591	1151			1181		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	96	94	96	99			99		
cM capacity (veh/h)	47	35	461	51	35	450	603			570		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	4	24	3	787	395	6	766	384
Volume Left	0	2	3	0	0	6	0	0
Volume Right	4	20	0	0	1	0	0	1
cSH	461	169	603	1700	1700	570	1700	1700
Volume to Capacity	0.01	0.14	0.01	0.46	0.23	0.01	0.45	0.23
Queue Length 95th (ft)	1	12	0	0	0	1	0	0
Control Delay (s)	12.9	29.8	11.0	0.0	0.0	11.4	0.0	0.0
Lane LOS	B	D	B			B		
Approach Delay (s)	12.9	29.8	0.0			0.1		
Approach LOS	B	D						

Intersection Summary		
Average Delay		0.4
Intersection Capacity Utilization	41.7%	ICU Level of Service
Analysis Period (min)		15
		A

2007 Base Conditions  
Friday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frnt		0.938			0.937			0.998			0.996	
Flt Protected		0.978			0.983		0.950		0.950			
Satd. Flow (prot)	0	1709	0	0	1529	0	1694	3497	0	1753	3613	0
Flt Permitted		0.978			0.983		0.950		0.950			
Satd. Flow (perm)	0	1709	0	0	1529	0	1694	3497	0	1753	3613	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		294			1492			3261			2754	
Travel Time (s)		6.7			33.9			49.4			41.7	
Volume (vph)	20	4	20	12	7	16	31	1106	18	19	928	31
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	4	22	16	8	21	34	1140	19	25	1205	34
Lane Group Flow (vph)	0	48	0	0	45	0	34	1159	0	25	1239	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 41.6% ICU Level of Service A  
 Analysis Period (min) 15

2007 Base Conditions  
Friday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%			-5%	
Volume (veh/h)	20	4	20	12	7	16	31	1106	18	19	928	31
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Hourly flow rate (vph)	22	4	22	16	8	21	34	1140	19	25	1205	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1936	2499	620	1895	2507	579	1240			1159		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1936	2499	620	1895	2507	579	1240			1159		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	16	83	95	50	69	95	94			96		
cM capacity (veh/h)	27	26	431	32	25	457	558			599		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	49	45	34	760	399	25	803	436				
Volume Left	22	16	34	0	0	25	0	0				
Volume Right	22	21	0	0	19	0	0	34				
cSH	46	53	558	1700	1700	599	1700	1700				
Volume to Capacity	1.06	0.86	0.06	0.45	0.23	0.04	0.47	0.26				
Queue Length 95th (ft)	112	92	5	0	0	3	0	0				
Control Delay (s)	292.0	207.5	11.9	0.0	0.0	11.3	0.0	0.0				
Lane LOS	F	F	B			B						
Approach Delay (s)	292.0	207.5	0.3			0.2						
Approach LOS	F	F										
Intersection Summary												
Average Delay			9.5									
Intersection Capacity Utilization			41.6%									
Analysis Period (min)			15									
ICU Level of Service			A									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr <sub>t</sub>	0.966				0.960	
Fl <sub>t</sub> Protected				0.992	0.966	
Satd. Flow (prot)	1457	0	0	1623	1670	0
Fl <sub>t</sub> Permitted				0.992	0.966	
Satd. Flow (perm)	1457	0	0	1623	1670	0
Headway Factor	1.10	1.10	1.07	1.07	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	109	37	25	128	64	27
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	17%	10%	10%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	145	49	34	173	114	48
Lane Group Flow (vph)	194	0	0	207	162	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 31.3% ICU Level of Service A  
 Analysis Period (min) 15



2007 Base Conditions  
Friday P.M. Peak Hour

6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	109	37	25	128	64	27
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Hourly flow rate (vph)	145	49	34	173	114	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			195		411	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			195		411	170
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			97		80	94
cM capacity (veh/h)			1332		582	874

Direction Lane #	EB 1	WB 1	NB 1
Volume Total	195	207	162
Volume Left	0	34	114
Volume Right	49	0	48
cSH	1700	1332	646
Volume to Capacity	0.11	0.03	0.25
Queue Length 95th (ft)	0	2	25
Control Delay (s)	0.0	1.5	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	1.5	12.4
Approach LOS			B

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		31.3%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.966				0.964	
Flt Protected				0.996	0.965	
Satd. Flow (prot)	1731	0	0	1750	1625	0
Flt Permitted				0.996	0.965	
Satd. Flow (perm)	1731	0	0	1750	1625	0
Headway Factor	1.05	1.05	1.05	1.05	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	102	34	10	115	38	14
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.72	0.72	0.80	0.80	0.25	0.25
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	142	47	13	144	152	56
Lane Group Flow (vph)	189	0	0	156	208	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 24.3% ICU Level of Service A  
 Analysis Period (min) 15

2007 Base Conditions  
Friday P.M. Peak Hour

7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	102	34	10	115	38	14
Peak Hour Factor	0.72	0.72	0.80	0.80	0.25	0.25
Hourly flow rate (vph)	142	47	12	144	152	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			189		334	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			189		334	165
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		77	94
cM capacity (veh/h)			1373		655	879

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	189	156	208
Volume Left	0	12	152
Volume Right	47	0	56
cSH	1700	1373	703
Volume to Capacity	0.11	0.01	0.30
Queue Length 95th (ft)	0	1	31
Control Delay (s)	0.0	0.7	12.3
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	12.3
Approach LOS			B

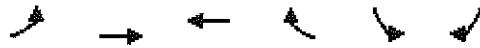
Intersection Summary			
Average Delay		4.8	
Intersection Capacity Utilization	24.3%		ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1835	1747	0	1629	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1835	1747	0	1629	0
Headway Factor	1.02	1.02	1.06	1.06	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	819		1342	
Travel Time (s)		16.0	14.0		26.1	
Volume (vph)	2	114	123	1	2	2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	2	136	160	1	4	4
Lane Group Flow (vph)	0	138	161	0	8	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 17.6% ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	2	114	123	1	2	2
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Hourly flow rate (vph)	2	136	160	1	4	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	161				301	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	161				301	160
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1418				690	885

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	138	161	8
Volume Left	2	0	4
Volume Right	0	1	4
cSH	1418	1700	776
Volume to Capacity	0.00	0.09	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.1	0.0	9.7
Lane LOS	A		A
Approach Delay (s)	0.1	0.0	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		17.6%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.993				0.935	
Frt Protected	0.955			0.998		
Satd. Flow (prot)	1673	0	0	1842	1634	0
Frt Permitted	0.955			0.998		
Satd. Flow (perm)	1673	0	0	1842	1634	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	110	6	6	152	127	118
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	134	7	6	158	157	146
Lane Group Flow (vph)	141	0	0	164	303	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 27.0% ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↓	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	110	6	6	152	127	118
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Hourly flow rate (vph)	134	7	6	158	157	146
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	400	230	302			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	400	230	302			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	99	100			
cM capacity (veh/h)	603	810	1258			

Direction Lane #	EB 1	NB 1	SB 1
Volume Total	141	165	302
Volume Left	134	6	0
Volume Right	7	0	146
cSH	611	1258	1700
Volume to Capacity	0.23	0.00	0.18
Queue Length 95th (ft)	22	0	0
Control Delay (s)	12.7	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	12.7	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		27.0%	ICU Level of Service
Analysis Period (min)		15	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
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	8	8	8
Grade (%)		-4%			4%			1%			-1%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.88			0.97	
Flt Protected		1.00			0.98			0.99			0.99	
Satd. Flow (prot)		1815			1738			1542			1556	
Flt Permitted		1.00			0.58			0.95			0.88	
Satd. Flow (perm)		1811			1022			1480			1378	
Volume (vph)	3	480	46	192	433	1	34	2	226	2	7	3
Peak-hour factor, PHF	0.86	0.86	0.86	0.98	0.98	0.98	0.87	0.87	0.87	0.60	0.60	0.60
Adj. Flow (vph)	3	558	53	196	442	1	39	2	260	3	12	5
RTOR Reduction (vph)	0	4	0	0	0	0	0	218	0	0	4	0
Lane Group Flow (vph)	0	610	0	0	639	0	0	83	0	0	16	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8				4	
Actuated Green, G (s)		26.9			42.8			9.3			9.3	
Effective Green, g (s)		28.9			44.8			10.3			10.3	
Actuated g/C Ratio		0.46			0.71			0.16			0.16	
Clearance Time (s)		6.0			6.0			5.0			5.0	
Vehicle Extension (s)		6.0			6.0			3.0			3.0	
Lane Grp Cap (vph)		829			861			242			225	
v/s Ratio Prot					c0.14							
v/s Ratio Perm		0.34			c0.39			c0.06			0.01	
v/c Ratio		0.74			0.74			0.34			0.07	
Uniform Delay, d1		14.0			5.6			23.4			22.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.7			4.7			0.9			0.1	
Delay (s)		18.7			10.3			24.3			22.5	
Level of Service		B			B			C			C	
Approach Delay (s)		18.7			10.3			24.3			22.5	
Approach LOS		B			B			C			C	

**Intersection Summary**

HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

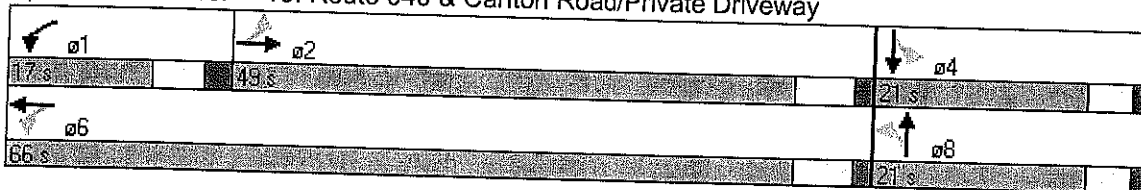


	↖	→	↙	←	↖	↑	↙	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Volume (vph)	3	480	192	433	34	2	2	7
Lane Group Flow (vph)	0	614	0	639	0	301	0	20
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	49.0	49.0	17.0	66.0	21.0	21.0	21.0	21.0
Total Split (%)	56.3%	56.3%	19.5%	75.9%	24.1%	24.1%	24.1%	24.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.76		0.75		0.66		0.08
Control Delay		21.0		11.6		14.4		25.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.0		11.6		14.4		25.3
Queue Length 50th (ft)		174		73		14		5
Queue Length 95th (ft)		318		203		86		16
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)								
Base Capacity (vph)		1038		1024		570		378
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		0.62		0.53		0.05

Intersection Summary

Cycle Length: 87  
 Actuated Cycle Length: 64.1  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.99		0.87	
Flt Protected		0.97	1.00		1.00	
Satd. Flow (prot)		1766	1770		1725	
Flt Permitted		0.52	1.00		1.00	
Satd. Flow (perm)		954	1770		1725	
Volume (vph)	422	286	272	15	11	354
Peak-hour factor, PHF	0.89	0.89	0.93	0.93	0.80	0.80
Adj. Flow (vph)	474	321	292	16	14	442
RTOR Reduction (vph)	0	0	2	0	384	0
Lane Group Flow (vph)	0	795	306	0	72	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		67.6	42.0		9.7	
Effective Green, g (s)		69.6	44.0		11.7	
Actuated g/C Ratio		0.78	0.49		0.13	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		940	872		226	
v/s Ratio Prot		c0.20	0.17		c0.04	
v/s Ratio Perm		c0.45				
v/c Ratio		0.85	0.35		0.32	
Uniform Delay, d1		6.4	13.9		35.2	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		8.2	0.7		0.8	
Delay (s)		14.5	14.6		36.0	
Level of Service		B	B		D	
Approach Delay (s)		14.5	14.6		36.0	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

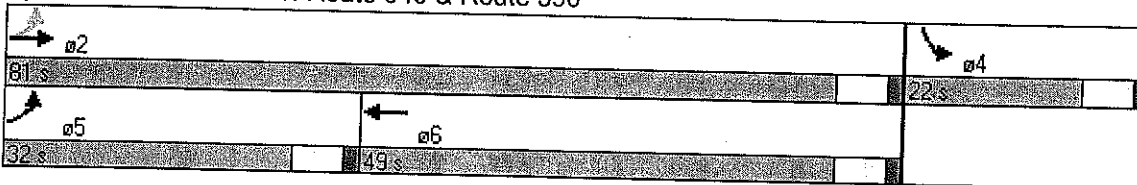


Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↖	↗	↘
Volume (vph)	422	286	272	11
Lane Group Flow (vph)	0	795	308	456
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2 5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	32.0	81.0	49.0	22.0
Total Split (%)	31.1%	78.6%	47.6%	21.4%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		0.88	0.36	0.75
Control Delay		17.6	16.8	13.0
Queue Delay		0.0	0.0	0.0
Total Delay		17.6	16.8	13.0
Queue Length 50th (ft)		111	92	8
Queue Length 95th (ft)		#341	204	52
Internal Link Dist (ft)		491	1298	1263
Turn Bay Length (ft)				
Base Capacity (vph)		998	919	689
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		0.80	0.34	0.66

**Intersection Summary**

Cycle Length: 103  
 Actuated Cycle Length: 89.8  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 11: Route 940 & Route 390**



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.961			0.986			0.975	
Flt Protected		0.994			0.999			0.987			0.963	
Satd. Flow (prot)	0	1804	0	0	1711	0	0	1595	0	0	1699	0
Flt Permitted		0.994			0.999			0.987			0.963	
Satd. Flow (perm)	0	1804	0	0	1711	0	0	1595	0	0	1699	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	38	255	4	5	262	109	4	10	2	86	4	21
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	42	283	4	6	312	130	5	13	3	99	5	24
Lane Group Flow (vph)	0	329	0	0	448	0	0	19	0	0	128	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 57.0% ICU Level of Service B  
 Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				↕
Sign Control		Free			Free			Stop				Stop
Grade		-2%			2%			-3%				-1%
Volume (veh/h)	38	255	4	5	262	109	4	10	2	86	4	21
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Hourly flow rate (vph)	42	283	4	6	312	130	5	12	2	99	5	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	442			288			785	824	286	767	761	377
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442			288			785	824	286	767	761	377
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			98	96	100	67	99	96
cM capacity (veh/h)	1118			1274			287	296	754	298	321	670
<b>Direction Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	330	448	20	128								
Volume Left	42	6	5	99								
Volume Right	4	130	2	24								
cSH	1118	1274	317	334								
Volume to Capacity	0.04	0.00	0.06	0.38								
Queue Length 95th (ft)	3	0	5	43								
Control Delay (s)	1.4	0.2	17.1	22.3								
Lane LOS	A	A	C	C								
Approach Delay (s)	1.4	0.2	17.1	22.3								
Approach LOS			C	C								
<b>Intersection Summary</b>												
Average Delay			4.0									
Intersection Capacity Utilization			57.0%	ICU Level of Service	B							
Analysis Period (min)			15									



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2046	1830		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2046	1830		1792	1810	
Volume (vph)	444	16	0	1073	920	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	462	17	0	1129	989	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	462	17	0	1129	989	0
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.0	16.0		41.0	41.0	
Effective Green, g (s)	18.0	18.0		44.0	44.0	
Actuated g/C Ratio	0.26	0.26		0.63	0.63	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	526	471		1126	1138	
v/s Ratio Prot	c0.23			c0.63	0.55	
v/s Ratio Perm		0.01				
v/c Ratio	0.88	0.04		1.00	0.87	
Uniform Delay, d1	24.9	19.5		13.0	10.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.3	0.0		27.5	8.2	
Delay (s)	40.2	19.5		40.5	18.9	
Level of Service	D	B		D	B	
Approach Delay (s)	39.5			40.5	18.9	
Approach LOS	D			D	B	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	139.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

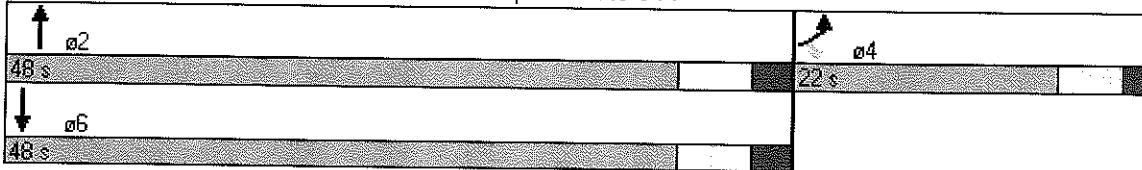


Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↑
Volume (vph)	444	16	1073	920
Lane Group Flow (vph)	462	17	1129	989
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	22.0	22.0	48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	Min	Min
v/c Ratio	0.88	0.04	1.00	0.87
Control Delay	45.8	19.9	43.0	21.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	45.8	19.9	43.0	21.4
Queue Length 50th (ft)	191	5	~428	303
Queue Length 95th (ft)	#350	20	#743	#601
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	526	471	1127	1139
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	0.88	0.04	1.00	0.87

**Intersection Summary**

Cycle Length: 70  
 Actuated Cycle Length: 70  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 ~ 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: I-80 WB Off-Ramp & Route 611





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕	↷	↶	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3396		1753	3628
Flt Permitted	0.95	1.00	1.00		0.09	1.00
Satd. Flow (perm)	1883	1631	3396		168	3628
Volume (vph)	98	66	1219	159	70	1036
Peak-hour factor, PHF	0.90	0.90	0.94	0.94	0.94	0.94
Adj. Flow (vph)	109	73	1297	169	74	1102
RTOR Reduction (vph)	0	61	0	0	0	0
Lane Group Flow (vph)	109	12	1466	0	74	1102
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.2	9.2	38.8		49.3	49.3
Effective Green, g (s)	12.2	12.2	42.8		53.3	53.3
Actuated g/C Ratio	0.17	0.17	0.58		0.73	0.73
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	313	271	1978		262	2631
v/s Ratio Prot	c0.06		c0.43		0.02	c0.30
v/s Ratio Perm		0.01			0.18	
v/c Ratio	0.35	0.04	0.74		0.28	0.42
Uniform Delay, d1	27.1	25.8	11.3		7.5	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	0.1	2.1		0.6	0.3
Delay (s)	27.8	25.8	13.3		8.1	4.3
Level of Service	C	C	B		A	A
Approach Delay (s)	27.0		13.3		4.5	
Approach LOS	C		B		A	
<b>Intersection Summary</b>						
HCM Average Control Delay			10.6		HCM Level of Service	B
HCM Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			73.5		Sum of lost time (s)	12.0
Intersection Capacity Utilization			58.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						





Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↖	↗	↕	↘	↙
Volume (vph)	98	66	1219	70	1036
Lane Group Flow (vph)	109	73	1466	74	1102
Turn Type	Perm		pm+pt		
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	33.0	33.0	34.0	13.0	47.0
Total Split (%)	41.3%	41.3%	42.5%	16.3%	58.8%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.32	0.21	0.71	0.22	0.42
Control Delay	21.3	6.6	16.0	5.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	6.6	16.0	5.7	5.1
Queue Length 50th (ft)	36	0	247	8	80
Queue Length 95th (ft)	75	28	#443	21	138
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	646	607	2057	341	2688
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	0.17	0.12	0.71	0.22	0.41

**Intersection Summary**

Cycle Length: 80

Actuated Cycle Length: 72.1

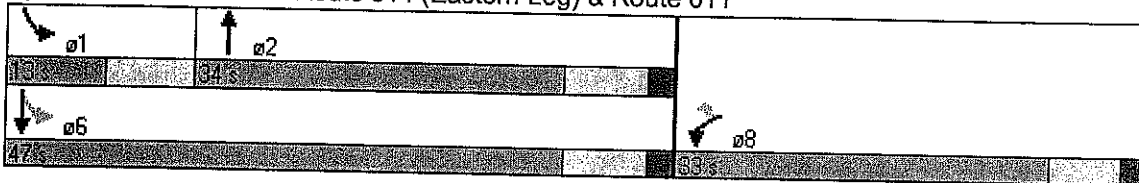
Natural Cycle: 55

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frnt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3634	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3634	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	18	135	158	1127	971	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	19	141	165	1174	1001	20
Lane Group Flow (vph)	19	141	165	1174	1021	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.5%
	ICU Level of Service A
Analysis Period (min)	15



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↓↗	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	18	135	158	1127	971	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Hourly flow rate (vph)	19	141	165	1174	1001	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	1111					
pX, platoon unblocked	0.75					
vC, conflicting volume	1927	510	1021			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1903	510	1021			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	44	72	76			
cM capacity (veh/h)	34	503	676			

Direction Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	19	141	165	587	587	667	353
Volume Left	19	0	165	0	0	0	0
Volume Right	0	141	0	0	0	0	20
cSH	34	503	676	1700	1700	1700	1700
Volume to Capacity	0.56	0.28	0.24	0.35	0.35	0.39	0.21
Queue Length 95th (ft)	47	28	24	0	0	0	0
Control Delay (s)	203.9	14.9	12.0	0.0	0.0	0.0	0.0
Lane LOS	F	B	B				
Approach Delay (s)	37.1		1.5			0.0	
Approach LOS	E						

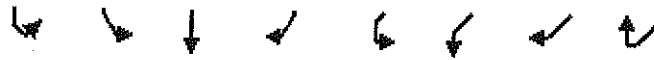
Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

2007 Base Conditions 3: Woodland Road/Private Driveway/Stricklands Road & Route 611  
 Saturday P.M. Peak Hour



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations			↕			↕			↗	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	15	13	13	13	13	11	12	12	12
Grade (%)			6%			5%				3%		
Total Lost time (s)			4.0			4.0			4.0	4.0		
Lane Util. Factor			1.00			1.00			1.00	0.95		
Fr <sub>t</sub>			0.91			0.98			1.00	0.99		
Fl <sub>t</sub> Protected			0.99			0.96			0.95	1.00		
Satd. Flow (prot)			1790			1774			1685	3454		
Fl <sub>t</sub> Permitted			0.90			0.74			0.30	1.00		
Satd. Flow (perm)			1634			1367			531	3454		
Volume (vph)	5	1	1	13	53	4	6	1	14	1062	2	67
Peak-hour factor, PHF	0.61	0.61	0.61	0.61	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98
Adj. Flow (vph)	8	2	2	21	58	4	7	1	14	1084	2	68
RTOR Reduction (vph)	0	0	18	0	0	1	0	0	0	2	0	0
Lane Group Flow (vph)	0	0	15	0	0	69	0	0	14	1152	0	0
Turn Type	Perm	Perm			Perm				Perm			
Protected Phases			4			8				2		
Permitted Phases	4	4			8				2			
Actuated Green, G (s)			8.9			8.9			47.0	47.0		
Effective Green, g (s)			10.9			10.9			50.5	50.5		
Actuated g/C Ratio			0.13			0.13			0.60	0.60		
Clearance Time (s)			6.0			6.0			7.5	7.5		
Vehicle Extension (s)			3.0			3.0			5.0	5.0		
Lane Grp Cap (vph)			213			178			321	2089		
v/s Ratio Prot										c0.33		
v/s Ratio Perm			0.01			c0.05			0.03			
v/c Ratio			0.07			0.39			0.04	0.55		
Uniform Delay, d1			31.8			33.2			6.7	9.8		
Progression Factor			1.00			1.00			1.00	1.00		
Incremental Delay, d2			0.1			1.4			0.1	0.5		
Delay (s)			32.0			34.7			6.8	10.3		
Level of Service			C			C			A	B		
Approach Delay (s)			32.0			34.7				10.3		
Approach LOS			C			C				B		
<b>Intersection Summary</b>												
HCM Average Control Delay			9.5			HCM Level of Service			A			
HCM Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			83.5			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												

2007 Base Conditions 3: Woodland Road/Private Driveway/Stricklands Road & Route 611  
 Saturday P.M. Peak Hour



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↖	↗			↖		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11	11	11
Grade (%)			-7%			-2%		
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00		
Frt		1.00	1.00			0.93		
Flt Protected		0.95	1.00			0.98		
Satd. Flow (prot)		1770	3655			1655		
Flt Permitted		0.17	1.00			0.98		
Satd. Flow (perm)		317	3655			1655		
Volume (vph)	1	4	924	14	1	1	1	1
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	4	943	14	1	1	1	1
RTOR Reduction (vph)	0	0	1	0	0	1	0	0
Lane Group Flow (vph)	0	5	956	0	0	3	0	0
Turn Type	pm+pt	pm+pt			Perm			
Protected Phases	1	1	6			9		
Permitted Phases	6	6			9			
Actuated Green, G (s)		53.7	53.7			1.4		
Effective Green, g (s)		57.2	57.2			3.4		
Actuated g/C Ratio		0.69	0.69			0.04		
Clearance Time (s)		5.5	7.5			6.0		
Vehicle Extension (s)		3.0	5.0			3.0		
Lane Grp Cap (vph)		264	2504			67		
v/s Ratio Prot		0.00	0.26					
v/s Ratio Perm		0.01				0.00		
v/c Ratio		0.02	0.38			0.05		
Uniform Delay, d1		5.9	5.6			38.5		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.0	0.2			0.3		
Delay (s)		5.9	5.8			38.8		
Level of Service		A	A			D		
Approach Delay (s)			5.8			38.8		
Approach LOS			A			D		
<b>Intersection Summary</b>								

2007 Base Conditions  
Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBL	SBT	SWL
Lane Configurations			↕		↕	↗	↕		↗	↕	↘
Volume (vph)	5	1	1	53	4	14	1062	1	4	924	1
Lane Group Flow (vph)	0	0	33	0	70	14	1154	0	5	957	4
Turn Type	Perm	Perm		Perm		Perm		pm+pt	pm+pt		
Protected Phases			4		8		2	1	1	6	9
Permitted Phases	4	4		8		2		6	6		
Detector Phases	4	4	4	8	8	2	2	1	1	6	9
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	10.0	4.0	4.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	17.5	17.5	9.5	9.5	17.5	13.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	33.0	33.0	12.0	12.0	45.0	19.0
Total Split (%)	36.0%	36.0%	36.0%	36.0%	36.0%	33.0%	33.0%	12.0%	12.0%	45.0%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0
Lead/Lag						Lag	Lag	Lead	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min	None	None	Min	None
v/c Ratio			0.11		0.30	0.05	0.49		0.02	0.37	0.02
Control Delay			12.6		20.3	10.5	10.1		8.2	5.9	24.8
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay			12.6		20.3	10.5	10.1		8.2	5.9	24.8
Queue Length 50th (ft)			3		19	1	74		1	55	1
Queue Length 95th (ft)			15		m63	16	#382		6	187	10
Internal Link Dist (ft)			105		2012		2203			2327	625
Turn Bay Length (ft)						73			183		
Base Capacity (vph)			612		510	277	2370		298	2703	292
Starvation Cap Reductn			0		0	0	0		0	0	0
Spillback Cap Reductn			0		0	0	0		0	0	0
Storage Cap Reductn			0		0	0	0		0	0	0
Reduced v/c Ratio			0.05		0.14	0.05	0.49		0.02	0.35	0.01

Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 74.9  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 # 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: 3: Woodland Road/Private Driveway/Stricklands Road & Route 611

01 32	02 38	04 36	09 41
06 45	08 36		



2007 Base Conditions  
 Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%			-1%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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		0.899			0.936							
Flt Protected		0.988			0.991		0.950			0.950		
Satd. Flow (prot)	0	1693	0	0	1659	0	1702	3522	0	1719	3557	0
Flt Permitted		0.988			0.991		0.950			0.950		
Satd. Flow (perm)	0	1693	0	0	1659	0	1702	3522	0	1719	3557	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45		45		
Link Distance (ft)		158			1027			2407		3261		
Travel Time (s)		3.1			20.0			36.5		49.4		
Volume (vph)	1	0	3	3	6	8	6	1070	1	1	936	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	2	0	6	8	15	21	7	1163	1	1	1052	1
Lane Group Flow (vph)	0	8	0	0	44	0	7	1164	0	1	1053	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 39.6% ICU Level of Service A  
 Analysis Period (min) 15



2007 Base Conditions  
 Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↗	↕		↗	↕
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%			-1%	
Volume (veh/h)	1	0	3	3	6	8	6	1070	1	1	936	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	2	0	6	8	15	21	7	1163	1	1	1052	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1677	2232	526	1711	2232	582	1053			1164		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1677	2232	526	1711	2232	582	1053			1164		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	86	63	95	99			100		
cM capacity (veh/h)	42	42	496	57	41	456	657			596		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	8	44	7	775	389	1	701	352
Volume Left	2	8	7	0	0	1	0	0
Volume Right	6	21	0	0	1	0	0	1
cSH	133	79	657	1700	1700	596	1700	1700
Volume to Capacity	0.06	0.55	0.01	0.46	0.23	0.00	0.41	0.21
Queue Length 95th (ft)	5	60	1	0	0	0	0	0
Control Delay (s)	33.8	96.6	10.5	0.0	0.0	11.1	0.0	0.0
Lane LOS	D	F	B			B		
Approach Delay (s)	33.8	96.6	0.1			0.0		
Approach LOS	D	F						

Intersection Summary		
Average Delay		2.0
Intersection Capacity Utilization	39.6%	ICU Level of Service A
Analysis Period (min)		15

2007 Base Conditions  
 Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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		0.940			0.960			0.995			0.995	
Flt Protected		0.978			0.971		0.950			0.950		
Satd. Flow (prot)	0	1712	0	0	1548	0	1694	3486	0	1753	3610	0
Flt Permitted		0.978			0.971		0.950			0.950		
Satd. Flow (perm)	0	1712	0	0	1548	0	1694	3486	0	1753	3610	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		381			1492			3261			2754	
Travel Time (s)		8.7			33.9			49.4			41.7	
Volume (vph)	28	6	27	31	6	15	25	1021	33	14	880	26
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Adj. Flow (vph)	31	7	30	43	7	21	28	1086	35	15	926	29
Lane Group Flow (vph)	0	68	0	0	71	0	28	1121	0	15	955	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 40.1%      ICU Level of Service A  
 Analysis Period (min) 15

2007 Base Conditions  
 Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Sign Control		Stop			Stop		Free	Free		Free	Free	
Grade		0%			9%		2%				-5%	
Volume (veh/h)	28	6	27	31	6	15	25	1021	33	14	880	26
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Hourly flow rate (vph)	31	7	30	43	7	21	28	1086	35	15	926	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1593	2147	478	1685	2144	561	955			1121		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1593	2147	478	1685	2144	561	955			1121		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	46	85	94	11	85	96	96			98		
cM capacity (veh/h)	58	45	534	48	45	471	715			619		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	68	71	28	724	397	15	618	338				
Volume Left	31	43	28	0	0	15	0	0				
Volume Right	30	21	0	0	35	0	0	29				
cSH	91	65	715	1700	1700	619	1700	1700				
Volume to Capacity	0.74	1.08	0.04	0.43	0.23	0.02	0.36	0.20				
Queue Length 95th (ft)	94	137	3	0	0	2	0	0				
Control Delay (s)	114.9	244.4	10.2	0.0	0.0	11.0	0.0	0.0				
Lane LOS	F	F	B			B						
Approach Delay (s)	114.9	244.4	0.2			0.2						
Approach LOS	F	F										
<b>Intersection Summary</b>												
Average Delay			11.3									
Intersection Capacity Utilization			40.1%		ICU Level of Service					A		
Analysis Period (min)			15									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	1%			-3%	0%	
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988					
Flt Protected				0.999	0.950	
Satd. Flow (prot)	1709	0	0	1763	1711	0
Flt Permitted				0.999	0.950	
Satd. Flow (perm)	1709	0	0	1763	1711	0
Headway Factor	1.10	1.10	1.07	1.07	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	65	6	2	59	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Adj. Flow (vph)	71	7	2	66	8	0
Lane Group Flow (vph)	78	0	0	68	8	0
Sign Control	Free			Free	Stop	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 14.7%      ICU Level of Service A  
 Analysis Period (min) 15



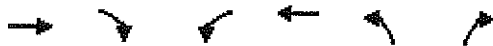
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↕	
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	65	6	2	59	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Hourly flow rate (vph)	71	7	2	66	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			77		144	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			77		144	74
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
iF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1521		847	988

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	77	68	8
Volume Left	0	2	8
Volume Right	7	0	0
cSH	1700	1521	847
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.3	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.3
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

2007 Base Conditions  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	1%			1%	-1%	
Turning Speed (mph)	9		15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.910	
Frt Protected				0.997	0.984	
Satd. Flow (prot)	1786	0	0	1786	1565	0
Frt Permitted				0.997	0.984	
Satd. Flow (perm)	1786	0	0	1786	1565	0
Headway Factor	1.05	1.05	1.05	1.05	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	63	2	3	59	2	4
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Adj. Flow (vph)	78	2	4	69	4	8
Lane Group Flow (vph)	80	0	0	73	12	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	15.5%
Analysis Period (min)	15
ICU Level of Service	A



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	63	2	3	59	2	4
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Hourly flow rate (vph)	78	2	4	69	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			80		155	79
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			80		155	79
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
iF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1518		834	981

Direction Lane #	EB 1	WB 1	NB 1
Volume Total	80	73	12
Volume Left	0	4	4
Volume Right	2	0	8
cSH	1700	1518	927
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.4	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	8.9
Approach LOS		A	

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

2007 Base Conditions  
 Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road

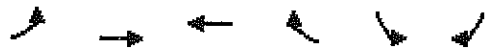


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)		-4%	2%		-6%	
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.982		0.949	
Frt Protected		0.999			0.970	
Satd. Flow (prot)	0	1835	1751	0	1648	0
Frt Permitted		0.999			0.970	
Satd. Flow (perm)	0	1835	1751	0	1648	0
Headway Factor	1.02	1.02	1.06	1.06	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	819		1342	
Travel Time (s)		16.0	14.0		26.1	
Volume (vph)	2	65	60	9	3	2
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Adj. Flow (vph)	2	68	65	10	5	3
Lane Group Flow (vph)	0	70	75	0	8	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 15.0% ICU Level of Service A  
 Analysis Period (min) 15





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	2	65	60	9	3	2
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	2	68	65	10	5	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74				142	69
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74				142	69
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1525				850	994
Direction Lane #	EB 1	WB 1	SB 1			
Volume Total	71	74	8			
Volume Left	2	0	5			
Volume Right	0	10	3			
cSH	1525	1700	902			
Volume to Capacity	0.00	0.04	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.2	0.0	9.0			
Lane LOS	A		A			
Approach Delay (s)	0.2	0.0	9.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization		15.0%		ICU Level of Service		A
Analysis Period (min)			15			

2007 Base Conditions  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.947	
Flt Protected	0.953			0.999		
Satd. Flow (prot)	1678	0	0	1844	1671	0
Flt Permitted	0.953			0.999		
Satd. Flow (perm)	1678	0	0	1844	1671	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	67	1	3	110	102	66
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Adj. Flow (vph)	82	1	4	147	119	77
Lane Group Flow (vph)	83	0	0	151	196	0
Sign Control	Stop			Free	Free	

Intersection Summary

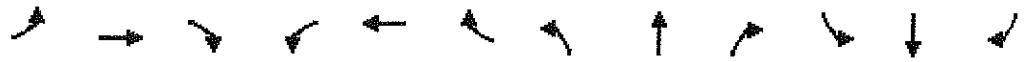
Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 19.8% ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			←	→	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	67	1	3	110	102	66
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Hourly flow rate (vph)	82	1	4	147	119	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	312	157	195			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	312	157	195			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	100	100			
cM capacity (veh/h)	679	889	1378			
Direction Lane #	EB 1	NB 1	SB 1			
Volume Total	83	151	195			
Volume Left	82	4	0			
Volume Right	1	0	77			
cSH	682	1378	1700			
Volume to Capacity	0.12	0.00	0.11			
Queue Length 95th (ft)	10	0	0			
Control Delay (s)	11.0	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.0	0.2	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization			19.8%	ICU Level of Service	A	
Analysis Period (min)			15			

2007 Base Conditions  
Saturday P.M. Peak Hour

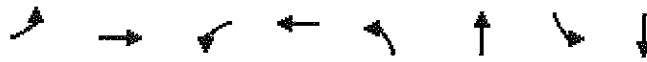
10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
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	8	8	8
Grade (%)		-4%			4%			1%			-1%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Fr't		0.99			1.00			0.88			0.88	
Flt Protected		1.00			0.99			1.00			0.99	
Satd. Flow (prot)		1826			1741			1567			1422	
Flt Permitted		1.00			0.70			0.97			0.95	
Satd. Flow (perm)		1818			1241			1525			1353	
Volume (vph)	3	390	17	151	395	0	17	1	159	1	0	6
Peak-hour factor, PHF	0.84	0.84	0.84	0.93	0.93	0.93	0.71	0.71	0.71	0.88	0.88	0.88
Adj. Flow (vph)	4	464	20	162	425	0	24	1	224	1	0	7
RTOR Reduction (vph)	0	2	0	0	0	0	0	187	0	0	6	0
Lane Group Flow (vph)	0	486	0	0	587	0	0	62	0	0	2	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		22.2			37.5			8.3			8.3	
Effective Green, g (s)		24.2			39.5			9.3			9.3	
Actuated g/C Ratio		0.43			0.70			0.16			0.16	
Clearance Time (s)		6.0			6.0			5.0			5.0	
Vehicle Extension (s)		6.0			6.0			3.0			3.0	
Lane Grp Cap (vph)		775			962			250			222	
v/s Ratio Prot					c0.12							
v/s Ratio Perm		0.27			c0.30			c0.04			0.00	
v/c Ratio		0.63			0.61			0.25			0.01	
Uniform Delay, d1		12.8			4.6			20.7			19.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.7			2.0			0.5			0.0	
Delay (s)		15.5			6.6			21.2			19.9	
Level of Service		B			A			C			B	
Approach Delay (s)		15.5			6.6			21.2			19.9	
Approach LOS		B			A			C			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			12.7			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			56.8			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			74.0%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

2007 Base Conditions  
Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Volume (vph)	3	390	151	395	17	1	1	0
Lane Group Flow (vph)	0	488	0	587	0	249	0	8
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	1	8	8	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	49.0	49.0	17.0	66.0	21.0	21.0	21.0	21.0
Total Split (%)	56.3%	56.3%	19.5%	75.9%	24.1%	24.1%	24.1%	24.1%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.64		0.62		0.57		0.03
Control Delay		15.1		6.1		8.5		16.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		15.1		6.1		8.5		16.3
Queue Length 50th (ft)		117		58		7		0
Queue Length 95th (ft)		224		172		33		12
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)								
Base Capacity (vph)		1059		1184		576		380
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		0.46		0.50		0.43		0.02

Intersection Summary

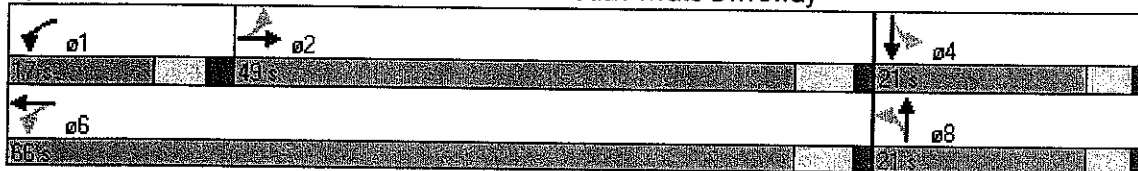
Cycle Length: 87

Actuated Cycle Length: 57.4

Natural Cycle: 55

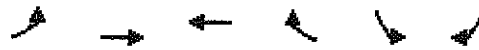
Control Type: Semi Act-Uncoord

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway



2007 Base Conditions  
Saturday P.M. Peak Hour

11: Route 940 & Route 390



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Fr <sub>t</sub>		1.00	0.99		0.88	
Fl <sub>t</sub> Protected		0.98	1.00		0.99	
Satd. Flow (prot)		1757	1768		1775	
Fl <sub>t</sub> Permitted		0.52	1.00		0.99	
Satd. Flow (perm)		936	1768		1775	
Volume (vph)	276	274	257	17	38	289
Peak-hour factor, PHF	0.79	0.79	0.84	0.84	0.81	0.81
Adj. Flow (vph)	349	347	306	20	47	357
RTOR Reduction (vph)	0	0	2	0	269	0
Lane Group Flow (vph)	0	696	324	0	135	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	pm+pl					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		57.3	34.8		11.3	
Effective Green, g (s)		59.3	36.8		13.3	
Actuated g/C Ratio		0.74	0.46		0.17	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		877	807		293	
v/s Ratio Prot		c0.18	0.18		c0.08	
v/s Ratio Perm		c0.40				
v/c Ratio		0.79	0.40		0.46	
Uniform Delay, d1		6.8	14.6		30.4	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		6.1	0.9		1.2	
Delay (s)		12.8	15.5		31.6	
Level of Service		B	B		C	
Approach Delay (s)		12.8	15.5		31.6	
Approach LOS		B	B		C	
<b>Intersection Summary</b>						
HCM Average Control Delay		18.7		HCM Level of Service		B
HCM Volume to Capacity ratio		0.73				
Actuated Cycle Length (s)		80.6		Sum of lost time (s)		8.0
Intersection Capacity Utilization		74.2%		ICU Level of Service		D
Analysis Period (min)		15				

c Critical Lane Group



Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↕	↕	↕
Volume (vph)	276	274	257	38
Lane Group Flow (vph)	0	696	326	404
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2 5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	32.0	81.0	49.0	22.0
Total Split (%)	31.1%	78.6%	47.6%	21.4%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		0.82	0.42	0.72
Control Delay		8.5	17.0	14.3
Queue Delay		0.0	0.0	0.0
Total Delay		8.5	17.0	14.3
Queue Length 50th (ft)		119	101	47
Queue Length 95th (ft)		183	198	105
Internal Link Dist (ft)		491	1298	1171
Turn Bay Length (ft)				
Base Capacity (vph)		1030	932	646
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		0.68	0.35	0.63

Intersection Summary

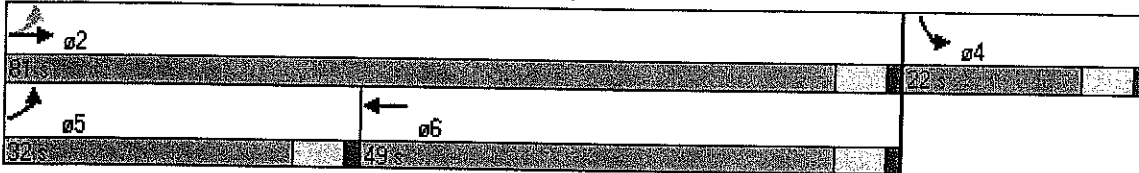
Cycle Length: 103

Actuated Cycle Length: 82

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Splits and Phases: 11: Route 940 & Route 390



2007 Base Conditions  
 Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Turning Speed (mph)	15		9	15		9	15		9	15		9
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		0.998			0.964			0.973			0.970	
Frt Protected		0.994			0.999			0.983			0.967	
Satd. Flow (prot)	0	1787	0	0	1717	0	0	1567	0	0	1697	0
Frt Permitted		0.994			0.999			0.983			0.967	
Satd. Flow (perm)	0	1787	0	0	1717	0	0	1567	0	0	1697	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	37	271	4	4	243	89	3	4	2	87	11	28
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	42	304	4	5	300	110	7	9	4	99	13	32
Lane Group Flow (vph)	0	350	0	0	415	0	0	20	0	0	143	0
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 58.5%      ICU Level of Service B

Analysis Period (min) 15



2007 Base Conditions  
Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			-1%	
Volume (veh/h)	37	271	4	4	243	89	3	4	2	87	11	28
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Hourly flow rate (vph)	42	304	4	5	300	110	7	9	4	99	12	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	410			309			793	810	307	764	757	355
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	410			309			793	810	307	764	757	355
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			98	97	99	67	96	95
cM capacity (veh/h)	1144			1252			275	302	733	302	324	689
Direction-Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	351	415	20	143								
Volume Left	42	5	7	99								
Volume Right	4	110	4	32								
cSH	1144	1252	335	348								
Volume to Capacity	0.04	0.00	0.06	0.41								
Queue Length 95th (ft)	3	0	5	49								
Control Delay (s)	1.3	0.1	16.4	22.4								
Lane LOS	A	A	C	C								
Approach Delay (s)	1.3	0.1	16.4	22.4								
Approach LOS			C	C								
<b>Intersection Summary</b>												
Average Delay			4.4									
Intersection Capacity Utilization		58.5%			ICU Level of Service				B			
Analysis Period (min)			15									

***2007 PROJECTED CONDITIONS***



2007 Projected Conditions  
 Friday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↑	↓	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2026	1813		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2026	1813		1792	1810	
Volume (vph)	1013	14	0	1099	1105	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	1151	16	0	1208	1256	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1151	16	0	1208	1256	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.0	14.0		33.0	33.0	
Effective Green, g (s)	16.0	16.0		36.0	36.0	
Actuated g/C Ratio	0.27	0.27		0.60	0.60	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	540	483		1075	1086	
v/s Ratio Prot	c0.57			0.67	c0.69	
v/s Ratio Perm		0.01				
v/c Ratio	2.13	0.03		1.12	1.16	
Uniform Delay, d1	22.0	16.3		12.0	12.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	515.4	0.0		68.1	81.1	
Delay (s)	537.4	16.3		80.1	93.1	
Level of Service	F	B		F	F	
Approach Delay (s)	530.2			80.1	93.1	
Approach LOS	F			F	F	
<b>Intersection Summary</b>						
HCM Average Control Delay		229.3		HCM Level of Service		F
HCM Volume to Capacity ratio		1.46				
Actuated Cycle Length (s)		60.0		Sum of lost time (s)		8.0
Intersection Capacity Utilization		182.1%		ICU Level of Service		H
Analysis Period (min)		15				
c Critical Lane Group						

2007 Projected Conditions  
Friday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↑
Volume (vph)	1013	14	1099	1105
Lane Group Flow (vph)	1151	16	1208	1256
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	20.0	20.0	40.0	40.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	Min	Min
v/c Ratio	2.13	0.03	1.12	1.16
Control Delay	535.1	16.6	84.7	98.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	535.1	16.6	84.7	98.0
Queue Length 50th (ft)	~686	4	~522	~555
Queue Length 95th (ft)	#874	16	#738	#747
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	540	483	1075	1086
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	2.13	0.03	1.12	1.16

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Natural Cycle: 140

Control Type: Semi Act-Uncoord

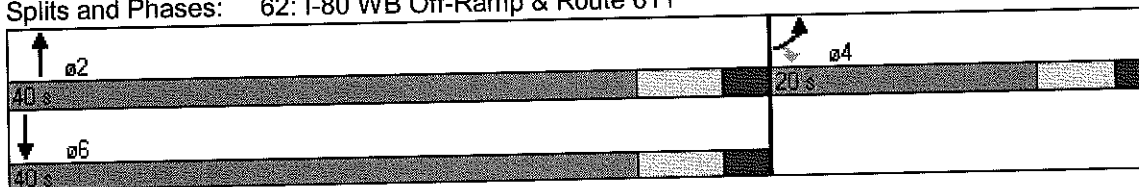
~ Volume exceeds capacity, queue is theoretically infinite.

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: 62: I-80 WB Off-Ramp & Route 611



2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	YY			↑↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	0.97			0.95	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	3472			3404	1810	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	3472			3404	1810	
Volume (vph)	1013	14	0	1099	1105	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	1151	16	0	1208	1256	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1167	0	0	1208	1256	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%

Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	16.0			41.0	41.0	
Effective Green, g (s)	18.0			44.0	44.0	
Actuated g/C Ratio	0.26			0.63	0.63	
Clearance Time (s)	6.0			7.0	7.0	
Vehicle Extension (s)	3.0			6.0	6.0	

Lane Grp Cap (vph)	893			2140	1138	
v/s Ratio Prot	c0.34			0.35	c0.69	
v/s Ratio Perm						
v/c Ratio	1.31			0.56	1.10	
Uniform Delay, d1	26.0			7.5	13.0	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	146.2			0.7	59.8	
Delay (s)	172.2			8.2	72.8	
Level of Service	F			A	E	
Approach Delay (s)	172.2			8.2	72.8	
Approach LOS	F			A	E	

Intersection Summary

HCM Average Control Delay	83.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	127.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611

Lane Group	EBL	NBT	SBT
Lane Configurations	↑↑↑	↑↑	↑
Volume (vph)	1013	1099	1105
Lane Group Flow (vph)	1167	1208	1256
Turn Type			
Protected Phases	4	2	6
Permitted Phases			
Detector Phases	4	2	6
Minimum Initial (s)	4.0	12.0	12.0
Minimum Split (s)	10.0	19.0	19.0
Total Split (s)	22.0	48.0	48.0
Total Split (%)	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.5	4.5
All-Red Time (s)	2.0	2.5	2.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
v/c Ratio	1.31	0.56	1.10
Control Delay	172.3	8.8	76.6
Queue Delay	0.0	0.0	0.0
Total Delay	172.3	8.8	76.6
Queue Length 50th (ft)	~340	136	~630
Queue Length 95th (ft)	#442	185	#829
Internal Link Dist (ft)	648	2214	366
Turn Bay Length (ft)			
Base Capacity (vph)	893	2140	1138
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.31	0.56	1.10

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Natural Cycle: 120

Control Type: Semi Act-Uncoord

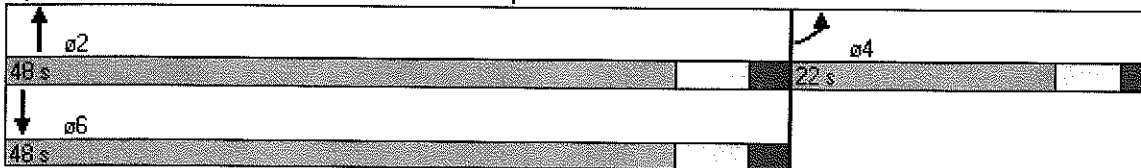
~ Volume exceeds capacity, queue is theoretically infinite.

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: I-80 WB Off-Ramp & Route 611



2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕	↕	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3334		1753	3628
Flt Permitted	0.95	1.00	1.00		0.07	1.00
Satd. Flow (perm)	1883	1631	3334		127	3628
Volume (vph)	345	142	1659	343	119	1241
Peak-hour factor, PHF	0.83	0.83	0.98	0.98	0.83	0.83
Adj. Flow (vph)	416	171	1693	350	143	1495
RTOR Reduction (vph)	0	58	0	0	0	0
Lane Group Flow (vph)	416	113	2043	0	143	1495
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	21.7	21.7	50.0		62.9	62.9
Effective Green, g (s)	24.7	24.7	54.0		66.9	66.9
Actuated g/C Ratio	0.25	0.25	0.54		0.67	0.67
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	467	404	1808		231	2437
v/s Ratio Prot	c0.22		c0.61		0.06	c0.41
v/s Ratio Perm		0.07			0.36	
v/c Ratio	0.89	0.28	1.13		0.62	0.61
Uniform Delay, d1	36.1	30.3	22.8		25.0	9.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	18.8	0.4	66.1		4.9	0.8
Delay (s)	54.9	30.6	88.9		29.9	9.9
Level of Service	D	C	F		C	A
Approach Delay (s)	47.8		88.9			11.7
Approach LOS	D		F			B

Intersection Summary				
HCM Average Control Delay		53.6	HCM Level of Service	D
HCM Volume to Capacity ratio		1.02		
Actuated Cycle Length (s)		99.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization		92.5%	ICU Level of Service	F
Analysis Period (min)		15		

c Critical Lane Group



2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↵	↶	↕	↵	↕
Volume (vph)	345	142	1659	119	1241
Lane Group Flow (vph)	416	171	2043	143	1495
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	29.0	29.0	58.0	13.0	71.0
Total Split (%)	29.0%	29.0%	58.0%	13.0%	71.0%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.89	0.37	1.13	0.62	0.61
Control Delay	59.1	19.6	90.3	27.9	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	19.6	90.3	27.9	10.5
Queue Length 50th (ft)	256	48	~802	36	251
Queue Length 95th (ft)	#369	94	#941	88	269
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	472	466	1808	232	2439
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	0.88	0.37	1.13	0.62	0.61

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99.6

Natural Cycle: 100

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611

↵ ø1	↕ ø2		
13 s	58 s		
↵ ø6		↵ ø8	
71 s		29 s	

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷↷	↷↷	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Fr <sub>t</sub>		0.850			0.992	
Fl <sub>t</sub> Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3581	0
Fl <sub>t</sub> Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3581	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	41	164	328	1473	1196	64
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	61	245	345	1551	1574	84
Lane Group Flow (vph)	61	245	345	1551	1658	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 66.6%      ICU Level of Service C  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	41	164	328	1473	1196	64
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Hourly flow rate (vph)	61	245	345	1551	1574	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.54					
vC, conflicting volume	3082	829	1658			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4017	829	1658			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	21	10			
cM capacity (veh/h)	0	309	385			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	61	245	345	775	775	1049	609
Volume Left	61	0	345	0	0	0	0
Volume Right	0	245	0	0	0	0	84
cSH	0	309	385	1700	1700	1700	1700
Volume to Capacity	590.95	0.79	0.90	0.46	0.46	0.62	0.36
Queue Length 95th (ft)	Err	159	229	0	0	0	0
Control Delay (s)	Err	49.3	56.9	0.0	0.0	0.0	0.0
Lane LOS	F	E	F				
Approach Delay (s)	2039.3		10.4			0.0	
Approach LOS	F						

Intersection Summary

Average Delay	166.8
Intersection Capacity Utilization	66.6%
ICU Level of Service	C
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↘	↗	↖	↕	↗	↖	↕	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	12	12	14	11	12	14	11	12	12
Grade (%)		6%			5%			3%				-7%
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	1.00	0.95	1.00	1.00	0.95	
Fr <sub>t</sub>		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Fl <sub>t</sub> Protected		0.98		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863		1639	1646	1647	1685	3486	1664	1770	3659	
Fl <sub>t</sub> Permitted		0.98		0.95	0.95	1.00	0.26	1.00	1.00	0.14	1.00	
Satd. Flow (perm)		1863		1639	1646	1647	459	3486	1664	267	3659	
Volume (vph)	4	2	3	360	7	142	5	1064	445	137	897	7
Peak-hour factor, PHF	0.56	0.56	0.56	0.89	0.89	0.89	0.99	0.99	0.99	0.82	0.82	0.82
Adj. Flow (vph)	7	4	5	404	8	160	5	1075	449	167	1094	9
RTOR Reduction (vph)	0	5	0	0	0	111	0	0	182	0	1	0
Lane Group Flow (vph)	0	11	0	202	210	49	5	1075	267	167	1102	0
Turn Type	Split			Split		pm+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	1		2	8	1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)		0.6		10.4	10.4	15.1	20.4	20.4	30.8	30.6	30.6	
Effective Green, g (s)		2.6		12.4	12.4	18.6	23.9	23.9	36.3	34.1	34.1	
Actuated g/C Ratio		0.04		0.20	0.20	0.30	0.39	0.39	0.59	0.56	0.56	
Clearance Time (s)		6.0		6.0	6.0	5.5	7.5	7.5	6.0	5.5	7.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	5.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		79		333	334	609	180	1364	989	302	2042	
v/s Ratio Prot		c0.01		0.12	c0.13	0.01		c0.31	0.05	0.06	c0.30	
v/s Ratio Perm						0.02	0.01		0.11	0.25		
v/c Ratio		0.14		0.61	0.63	0.08	0.03	0.79	0.27	0.55	0.54	
Uniform Delay, d1		28.2		22.1	22.2	15.1	11.4	16.4	6.0	9.7	8.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.8		3.1	3.7	0.1	0.1	3.6	0.1	2.2	0.5	
Delay (s)		29.0		25.2	25.9	15.2	11.6	20.0	6.1	11.9	9.0	
Level of Service		C		C	C	B	B	B	A	B	A	
Approach Delay (s)		29.0			22.7			15.9			9.4	
Approach LOS		C			C			B			A	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↕	↘	↙	↗	↘	↙	↗	↘	↙
Volume (vph)	2	360	7	142	5	1064	445	137	897
Lane Group Flow (vph)	16	202	210	160	5	1075	449	167	1103
Turn Type		Split		pm+ov	Perm		pm+ov	pm+pt	
Protected Phases	4	8	8	1		2	8	1	6
Permitted Phases				8	2		2	6	
Detector Phases	4	8	8	1	2	2	8	1	6
Minimum Initial (s)	4.0	7.0	7.0	4.0	10.0	10.0	7.0	4.0	10.0
Minimum Split (s)	10.0	13.0	13.0	9.5	17.5	17.5	13.0	9.5	17.5
Total Split (s)	10.0	17.0	17.0	12.0	31.0	31.0	17.0	12.0	43.0
Total Split (%)	14.3%	24.3%	24.3%	17.1%	44.3%	44.3%	24.3%	17.1%	61.4%
Yellow Time (s)	4.0	4.0	4.0	5.5	5.5	5.5	4.0	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Lead/Lag				Lead	Lag	Lag		Lead	
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	
Recall Mode	None	None	None	None	Min	Min	None	None	Min
v/c Ratio	0.09	0.54	0.56	0.21	0.03	0.71	0.33	0.48	0.51
Control Delay	26.0	29.6	30.2	3.7	12.2	17.6	1.1	11.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	29.6	30.2	3.7	12.2	17.6	1.1	11.8	7.8
Queue Length 50th (ft)	4	68	71	0	1	153	0	19	86
Queue Length 95th (ft)	12	#170	#180	34	8	285	14	59	167
Internal Link Dist (ft)	105		2012			2203			2327
Turn Bay Length (ft)		250		250	73		350	183	
Base Capacity (vph)	187	397	399	761	216	1638	1361	351	2345
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	0.51	0.53	0.21	0.02	0.66	0.33	0.48	0.47

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 55.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

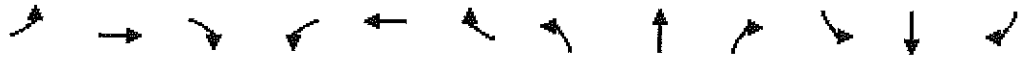
Splits and Phases: 3: Woodland Road/Private Driveway & Route 611

↘ φ1 12 s	↙ φ2 31 s	↗ φ4 10 s	↘ φ8 17 s
↓ φ6 43 s			

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%			-1%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.865			0.882							
Flt Protected					0.997		0.950			0.950		
Satd. Flow (prot)	0	1648	0	0	1572	0	1702	3522	0	1670	3455	0
Flt Permitted					0.997		0.950			0.950		
Satd. Flow (perm)	0	1648	0	0	1572	0	1702	3522	0	1670	3455	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		158			1027			2407			3261	
Travel Time (s)		3.1			20.0			36.5			49.4	
Volume (vph)	0	0	3	1	1	14	3	1205	1	11	1037	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	4	2	2	28	3	1242	1	13	1249	1
Lane Group Flow (vph)	0	4	0	0	32	0	3	1243	0	13	1250	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 43.3%      ICU Level of Service A  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%			-1%	
Volume (veh/h)	0	0	3	1	1	14	3	1205	1	11	1037	1
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	4	2	2	28	3	1242	1	13	1249	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1933	2526	625	1904	2526	622	1251			1243		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1933	2526	625	1904	2526	622	1251			1243		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	95	92	93	99			98		
cM capacity (veh/h)	34	26	427	40	26	429	552			540		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	4	32	3	828	415	13	833	418
Volume Left	0	2	3	0	0	13	0	0
Volume Right	4	28	0	0	1	0	0	1
cSH	427	167	552	1700	1700	540	1700	1700
Volume to Capacity	0.01	0.19	0.01	0.49	0.24	0.02	0.49	0.25
Queue Length 95th (ft)	1	17	0	0	0	2	0	0
Control Delay (s)	13.5	31.6	11.6	0.0	0.0	11.8	0.0	0.0
Lane LOS	B	D	B			B		
Approach Delay (s)	13.5	31.6	0.0			0.1		
Approach LOS	B	D						

**Intersection Summary**

Average Delay	0.5
Intersection Capacity Utilization	43.3%
ICU Level of Service	A
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.938			0.937			0.998			0.996	
Frt Protected		0.978			0.983		0.950			0.950		
Satd. Flow (prot)	0	1709	0	0	1529	0	1694	3497	0	1753	3613	0
Frt Permitted		0.978			0.983		0.950			0.950		
Satd. Flow (perm)	0	1709	0	0	1529	0	1694	3497	0	1753	3613	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		294			1492			3261			2754	
Travel Time (s)		6.7			33.9			49.4			41.7	
Volume (vph)	20	4	20	12	7	16	31	1170	18	19	1017	31
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	4	22	16	8	21	34	1206	19	25	1321	34
Lane Group Flow (vph)	0	48	0	0	45	0	34	1225	0	25	1355	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 43.3% ICU Level of Service A  
 Analysis Period (min) 15



2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↕		↙	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%			-5%	
Volume (veh/h)	20	4	20	12	7	16	31	1170	18	19	1017	31
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Hourly flow rate (vph)	22	4	22	16	8	21	34	1206	19	25	1321	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2085	2681	678	2019	2689	612	1355			1225		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2085	2681	678	2019	2689	612	1355			1225		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	77	94	34	59	95	93			96		
cM capacity (veh/h)	18	19	395	24	19	435	504			565		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	45	34	804	421	25	881	475
Volume Left	22	16	34	0	0	25	0	0
Volume Right	22	21	0	0	19	0	0	34
cSH	32	40	504	1700	1700	565	1700	1700
Volume to Capacity	1.52	1.12	0.07	0.47	0.25	0.04	0.52	0.28
Queue Length 95th (ft)	136	111	5	0	0	3	0	0
Control Delay (s)	531.6	337.9	12.7	0.0	0.0	11.7	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	531.6	337.9	0.3			0.2		
Approach LOS	F	F						

Intersection Summary

Average Delay	15.4
Intersection Capacity Utilization	43.3%
ICU Level of Service	A
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

6: Woodland Road & School Access



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr <sub>t</sub>		0.850			0.960	
Fl <sub>t</sub> Protected			0.950		0.966	
Satd. Flow (prot)	1616	1465	1666	1870	1670	0
Fl <sub>t</sub> Permitted			0.950		0.966	
Satd. Flow (perm)	1616	1465	1666	1870	1670	0
Headway Factor	1.01	0.92	0.98	0.90	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	547	37	25	445	64	27
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	17%	10%	10%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	729	49	34	601	114	48
Lane Group Flow (vph)	729	49	34	601	162	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 40.7% ICU Level of Service A  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↗
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	547	37	25	445	64	27
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Hourly flow rate (vph)	729	49	34	601	114	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLT		
Median storage veh				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			779		1398	729
vC1, stage 1 conf vol					729	
vC2, stage 2 conf vol					669	
vCu, unblocked vol			779		1398	729
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.3
p0 queue free %			96		60	89
cM capacity (veh/h)			804		288	423

Direction	Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total		729	49	34	601	162
Volume Left		0	0	34	0	114
Volume Right		0	49	0	0	48
cSH		1700	1700	804	1700	318
Volume to Capacity		0.43	0.03	0.04	0.35	0.51
Queue Length 95th (ft)		0	0	3	0	69
Control Delay (s)		0.0	0.0	9.7	0.0	27.6
Lane LOS				A		D
Approach Delay (s)		0.0		0.5		27.6
Approach LOS						D

Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		40.7%		ICU Level of Service		A
Analysis Period (min)			15			

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.908	
Flt Protected			0.950		0.984	
Satd. Flow (prot)	1853	1680	1727	1939	1561	0
Flt Permitted			0.950		0.984	
Satd. Flow (perm)	1853	1680	1727	1939	1561	0
Headway Factor	1.01	0.92	1.01	0.92	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	540	34	57	432	38	80
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.72	0.72	0.80	0.80	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	750	47	71	540	42	89
Lane Group Flow (vph)	750	47	71	540	131	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 48.8% ICU Level of Service A  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	540	34	57	432	38	80
Peak Hour Factor	0.72	0.72	0.80	0.80	0.90	0.90
Hourly flow rate (vph)	750	47	71	540	42	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL		
Median storage (veh)				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			797	1432	750	
vC1, stage 1 conf vol				750		
vC2, stage 2 conf vol				682		
vCu, unblocked vol			797	1432	750	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)				5.4		
tF (s)			2.2	3.5	3.3	
p0 queue free %			91	85	78	
cM capacity (veh/h)			816	273	411	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	750	47	71	540	131
Volume Left	0	0	71	0	42
Volume Right	0	47	0	0	89
cSH	1700	1700	816	1700	353
Volume to Capacity	0.44	0.03	0.09	0.32	0.37
Queue Length 95th (ft)	0	0	7	0	42
Control Delay (s)	0.0	0.0	9.8	0.0	21.1
Lane LOS			A		C
Approach Delay (s)	0.0		1.1		21.1
Approach LOS					C

Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization	48.8%		ICU Level of Service A
Analysis Period (min)	15		

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	→	←	↑	↓	←
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	10	10
Grade (%)		-4%	-2%		-6%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.973	
Frt Protected	0.950				0.962	
Satd. Flow (prot)	1805	2027	1927	0	1676	0
Frt Permitted	0.950				0.962	
Satd. Flow (perm)	1805	2027	1927	0	1676	0
Headway Factor	0.97	0.89	0.93	0.93	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	400		1342	
Travel Time (s)		16.0	6.8		26.1	
Volume (vph)	2	618	487	5	8	2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	2	736	632	6	16	4
Lane Group Flow (vph)	2	736	638	0	20	0
Sign Control		Free	Free		Stop	

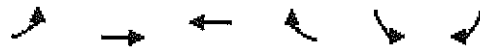
Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 42.5% ICU Level of Service A  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	2	618	487	5	8	2
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Hourly flow rate (vph)	2	736	632	6	16	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL		
Median storage veh				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	639				1376	636
vC1, stage 1 conf vol					636	
vC2, stage 2 conf vol					740	
vCu, unblocked vol	639				1376	636
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	945				300	479

Direction Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	2	736	639	20
Volume Left	2	0	0	16
Volume Right	0	0	6	4
cSH	945	1700	1700	324
Volume to Capacity	0.00	0.43	0.38	0.06
Queue Length 95th (ft)	0	0	0	5
Control Delay (s)	8.8	0.0	0.0	16.8
Lane LOS	A			C
Approach Delay (s)	0.0		0.0	16.8
Approach LOS				C

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	42.5%		ICU Level of Service A
Analysis Period (min)	15		

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.992				0.918	
Flt Protected	0.955			0.997		
Satd. Flow (prot)	1672	0	0	1840	1604	0
Flt Permitted	0.955			0.997		
Satd. Flow (perm)	1672	0	0	1840	1604	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	166	10	11	152	127	195
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	202	12	11	158	157	241
Lane Group Flow (vph)	214	0	0	169	398	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 35.1%      ICU Level of Service A  
 Analysis Period (min) 15



2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↖	↗	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	166	10	11	152	127	195
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Hourly flow rate (vph)	202	12	11	158	157	241
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	458	277	398			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	458	277	398			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	64	98	99			
cM capacity (veh/h)	555	762	1161			

Direction Lane #	EB 1	NB 1	SB 1
Volume Total	215	170	398
Volume Left	202	11	0
Volume Right	12	0	241
cSH	564	1161	1700
Volume to Capacity	0.38	0.01	0.23
Queue Length 95th (ft)	44	1	0
Control Delay (s)	15.2	0.6	0.0
Lane LOS	C	A	
Approach Delay (s)	15.2	0.6	0.0
Approach LOS	C		

Intersection Summary

Average Delay	4.3		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	8	8	8
Grade (%)		-4%			4%			1%			-1%	
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		0.98		1.00	1.00			0.89			0.97	
Flt Protected		1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)		1800		1619	1764			1551			1556	
Flt Permitted		1.00		0.27	1.00			0.93			0.89	
Satd. Flow (perm)		1797		466	1764			1455			1393	
Volume (vph)	3	480	82	233	433	1	60	2	256	2	7	3
Peak-hour factor, PHF	0.86	0.86	0.86	0.98	0.98	0.98	0.87	0.87	0.87	0.60	0.60	0.60
Adj. Flow (vph)	3	558	95	238	442	1	69	2	294	3	12	5
RTOR Reduction (vph)	0	11	0	0	0	0	0	239	0	0	4	0
Lane Group Flow (vph)	0	645	0	238	443	0	0	126	0	0	16	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		21.3		31.6	31.6			8.6			8.6	
Effective Green, g (s)		23.3		33.6	33.6			9.6			9.6	
Actuated g/C Ratio		0.46		0.66	0.66			0.19			0.19	
Clearance Time (s)		6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)		6.0		3.0	6.0			3.0			3.0	
Lane Grp Cap (vph)		818		448	1158			273			261	
v/s Ratio Prot				c0.07	0.25							
v/s Ratio Perm		c0.36		0.28				c0.09			0.01	
v/c Ratio		0.79		0.53	0.38			0.46			0.06	
Uniform Delay, d1		11.9		6.2	4.0			18.5			17.1	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		6.3		1.2	0.6			1.2			0.1	
Delay (s)		18.1		7.4	4.6			19.7			17.2	
Level of Service		B		A	A			B			B	
Approach Delay (s)		18.1			5.6			19.7			17.2	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↗	↖		↕		↕
Volume (vph)	3	480	233	433	60	2	2	7
Lane Group Flow (vph)	0	656	238	443	0	365	0	20
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	33.0	33.0	12.0	45.0	15.0	15.0	15.0	15.0
Total Split (%)	55.0%	55.0%	20.0%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.78	0.50	0.40		0.71		0.07
Control Delay		19.6	7.7	5.2		15.3		18.6
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		19.6	7.7	5.2		15.3		18.6
Queue Length 50th (ft)		170	24	51		22		4
Queue Length 95th (ft)		269	47	91		#115		13
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)			100					
Base Capacity (vph)		954	472	1242		555		318
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	0.50	0.36		0.66		0.06

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 50.6

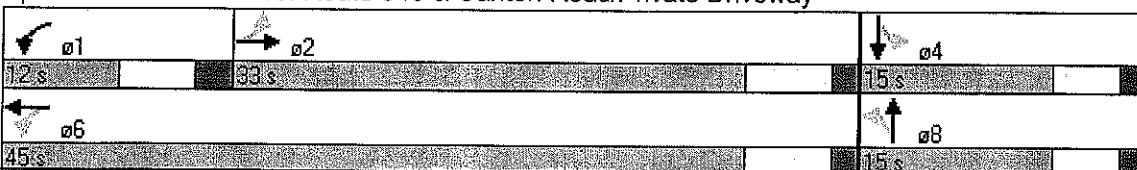
Natural Cycle: 60

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

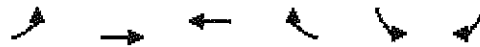
Queue shown is maximum after two cycles.

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway



2007 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

11: Route 940 & Route 390



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Fr <sub>t</sub>		1.00	0.99		0.87	
Fl <sub>t</sub> Protected		0.97	1.00		1.00	
Satd. Flow (prot)		1766	1771		1725	
Fl <sub>t</sub> Permitted		0.53	1.00		1.00	
Satd. Flow (perm)		971	1771		1725	
Volume (vph)	443	295	284	15	11	383
Peak-hour factor, PHF	0.89	0.89	0.93	0.93	0.80	0.80
Adj. Flow (vph)	498	331	305	16	14	479
RTOR Reduction (vph)	0	0	1	0	424	0
Lane Group Flow (vph)	0	829	320	0	69	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		81.3	54.0		9.9	
Effective Green, g (s)		83.3	56.0		11.9	
Actuated g/C Ratio		0.81	0.54		0.12	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		963	961		199	
v/s Ratio Prot		c0.19	0.18		c0.04	
v/s Ratio Perm		c0.50				
v/c Ratio		0.86	0.33		0.35	
Uniform Delay, d1		6.3	13.2		42.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		9.0	0.6		1.1	
Delay (s)		15.3	13.7		43.1	
Level of Service		B	B		D	
Approach Delay (s)		15.3	13.7		43.1	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2007 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

11: Route 940 & Route 390



Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↕	↕	↕
Volume (vph)	443	295	284	11
Lane Group Flow (vph)	0	829	321	493
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2 5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	35.0	100.0	65.0	20.0
Total Split (%)	29.2%	83.3%	54.2%	16.7%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		0.88	0.34	0.79
Control Delay		16.7	15.3	15.5
Queue Delay		0.0	0.0	0.0
Total Delay		16.7	15.3	15.5
Queue Length 50th (ft)		120	101	10
Queue Length 95th (ft)		#302	210	53
Internal Link Dist (ft)		491	1298	1509
Turn Bay Length (ft)				
Base Capacity (vph)		1044	1036	675
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		0.79	0.31	0.73

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 104.2  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

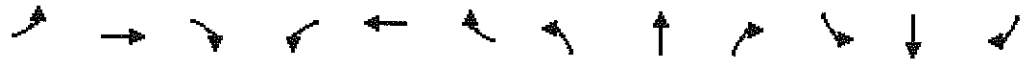
Splits and Phases: 11: Route 940 & Route 390

→ φ2	↙ φ4
100 s	20 s
↗ φ5	← φ6
35 s	65 s

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.962			0.986			0.975	
Flt Protected		0.994			0.999			0.987			0.963	
Satd. Flow (prot)	0	1804	0	0	1713	0	0	1595	0	0	1699	0
Flt Permitted		0.994			0.999			0.987			0.963	
Satd. Flow (perm)	0	1804	0	0	1713	0	0	1595	0	0	1699	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	38	264	4	5	274	109	4	10	2	86	4	21
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	42	293	4	6	326	130	5	13	3	99	5	24
Lane Group Flow (vph)	0	339	0	0	462	0	0	19	0	0	128	0
Sign Control		Free			Free			Stop			Stop	

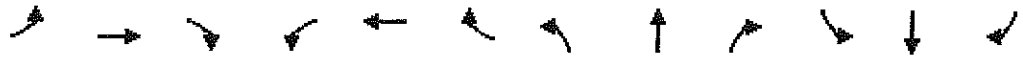
Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 57.6% ICU Level of Service B  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			-1%	
Volume (veh/h)	38	264	4	5	274	109	4	10	2	86	4	21
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Hourly flow rate (vph)	42	293	4	6	326	130	5	12	2	99	5	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	456			298			809	848	296	792	785	391
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	456			298			809	848	296	792	785	391
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			98	96	100	65	99	96
cM capacity (veh/h)	1105			1263			276	286	744	286	311	658

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	340	462	20	128
Volume Left	42	6	5	99
Volume Right	4	130	2	24
cSH	1105	1263	307	322
Volume to Capacity	0.04	0.00	0.07	0.40
Queue Length 95th (ft)	3	0	5	46
Control Delay (s)	1.4	0.2	17.6	23.4
Lane LOS	A	A	C	C
Approach Delay (s)	1.4	0.2	17.6	23.4
Approach LOS			C	C

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		57.6%	ICU Level of Service B
Analysis Period (min)		15	

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

13: Woodland Road & Western Site Driveway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1891	1714	1752	1967	1770	1689
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	863			1227	233	
Travel Time (s)	14.7			20.9	7.9	
Volume (vph)	246	380	24	308	184	30
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	300	422	27	411	204	33
Lane Group Flow (vph)	300	422	27	411	204	33
Sign Control	Free			Free	Stop	

Intersection Summary

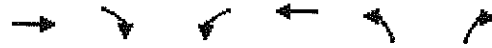
Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 36.5%      ICU Level of Service A  
 Analysis Period (min) 15



2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

13: Woodland Road & Western Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	246	380	24	308	184	30
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Hourly flow rate (vph)	300	422	27	411	204	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			300		764	300
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			300		764	300
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		44	95
cM capacity (veh/h)			1261		364	740

Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	300	422	27	411	204	33
Volume Left	0	0	27	0	204	0
Volume Right	0	422	0	0	0	33
cSH	1700	1700	1261	1700	364	740
Volume to Capacity	0.18	0.25	0.02	0.24	0.56	0.05
Queue Length 95th (ft)	0	0	2	0	82	4
Control Delay (s)	0.0	0.0	7.9	0.0	26.8	10.1
Lane LOS			A		D	B
Approach Delay (s)	0.0		0.5		24.5	
Approach LOS					C	

Intersection Summary	
Average Delay	4.3
Intersection Capacity Utilization	36.5%
ICU Level of Service	A
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr <sub>t</sub>		0.850				0.850
Fl <sub>t</sub> Protected			0.950		0.950	
Satd. Flow (prot)	1891	1714	1752	1967	1770	1689
Fl <sub>t</sub> Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	1227			2146	250	
Travel Time (s)	20.9			36.6	8.5	
Volume (vph)	146	130	58	148	184	30
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	178	144	64	197	204	33
Lane Group Flow (vph)	178	144	64	197	204	33
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 31.2%      ICU Level of Service A  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	146	130	58	148	184	30
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Hourly flow rate (vph)	178	144	64	197	204	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			178		504	178
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178		504	178
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		59	96
cM capacity (veh/h)			1398		503	865

Direction	Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total		178	144	64	197	204	33
Volume Left		0	0	64	0	204	0
Volume Right		0	144	0	0	0	33
cSH		1700	1700	1398	1700	503	865
Volume to Capacity		0.10	0.08	0.05	0.12	0.41	0.04
Queue Length 95th (ft)		0	0	4	0	49	3
Control Delay (s)		0.0	0.0	7.7	0.0	17.0	9.3
Lane LOS				A		C	A
Approach Delay (s)		0.0		1.9		15.9	
Approach LOS						C	

Intersection Summary			
Average Delay		5.2	
Intersection Capacity Utilization		31.2%	ICU Level of Service A
Analysis Period (min)		15	

2007 Projected Conditions  
 Saturday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Fr <sub>t</sub>	1.00	0.85		1.00	1.00	
Fl <sub>t</sub> Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2046	1830		1792	1810	
Fl <sub>t</sub> Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2046	1830		1792	1810	
Volume (vph)	795	16	0	1137	970	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	828	17	0	1197	1043	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	828	17	0	1197	1043	0
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.0	16.0		41.0	41.0	
Effective Green, g (s)	18.0	18.0		44.0	44.0	
Actuated g/C Ratio	0.26	0.26		0.63	0.63	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	526	471		1126	1138	
v/s Ratio Prot	c0.40			c0.67	0.58	
v/s Ratio Perm		0.01				
v/c Ratio	1.57	0.04		1.06	0.92	
Uniform Delay, d1	26.0	19.5		13.0	11.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	267.4	0.0		45.3	12.4	
Delay (s)	293.4	19.5		58.3	23.8	
Level of Service	F	B		E	C	
Approach Delay (s)	287.9			58.3	23.8	
Approach LOS	F			E	C	

Intersection Summary			
HCM Average Control Delay	109.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	164.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

2007 Projected Conditions  
 Saturday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↑
Volume (vph)	795	16	1137	970
Lane Group Flow (vph)	828	17	1197	1043
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	22.0	22.0	48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	Min	Min
v/c Ratio	1.57	0.04	1.06	0.92
Control Delay	291.8	19.9	61.7	26.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	291.8	19.9	61.7	26.4
Queue Length 50th (ft)	~518	5	~581	342
Queue Length 95th (ft)	#722	20	#809	#654
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	526	471	1126	1138
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	1.57	0.04	1.06	0.92

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Natural Cycle: 150

Control Type: Semi Act-Uncoord

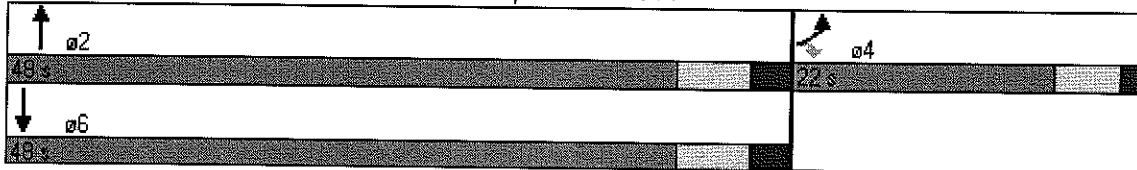
~ Volume exceeds capacity, queue is theoretically infinite.

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: 62: I-80 WB Off-Ramp & Route 611



2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖			↑↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	0.97			0.95	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	3503			3404	1810	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	3503			3404	1810	
Volume (vph)	795	16	0	1137	970	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	828	17	0	1197	1043	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	845	0	0	1197	1043	0
Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	17.7			41.3	41.3	
Effective Green, g (s)	19.7			44.3	44.3	
Actuated g/C Ratio	0.27			0.62	0.62	
Clearance Time (s)	6.0			7.0	7.0	
Vehicle Extension (s)	3.0			6.0	6.0	
Lane Grp Cap (vph)	958			2094	1114	
v/s Ratio Prot	c0.24			0.35	c0.58	
v/s Ratio Perm						
v/c Ratio	0.88			0.57	0.94	
Uniform Delay, d1	25.0			8.2	12.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	9.6			0.8	14.9	
Delay (s)	34.6			9.0	27.5	
Level of Service	C			A	C	
Approach Delay (s)	34.6			9.0	27.5	
Approach LOS	C			A	C	

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Lane Group	EBL	NBT	SBT
Lane Configurations	↑↑↑	↑↑	↑
Volume (vph)	795	1137	970
Lane Group Flow (vph)	845	1197	1043
Turn Type			
Protected Phases	4	2	6
Permitted Phases			
Detector Phases	4	2	6
Minimum Initial (s)	4.0	12.0	12.0
Minimum Split (s)	10.0	19.0	19.0
Total Split (s)	24.0	51.0	51.0
Total Split (%)	32.0%	68.0%	68.0%
Yellow Time (s)	4.0	4.5	4.5
All-Red Time (s)	2.0	2.5	2.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
v/c Ratio	0.88	0.57	0.94
Control Delay	38.8	9.5	29.9
Queue Delay	0.0	0.0	0.0
Total Delay	38.8	9.5	29.9
Queue Length 50th (ft)	195	148	376
Queue Length 95th (ft)	#300	198	#694
Internal Link Dist (ft)	648	2214	366
Turn Bay Length (ft)			
Base Capacity (vph)	971	2144	1140
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.56	0.91

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 72.1

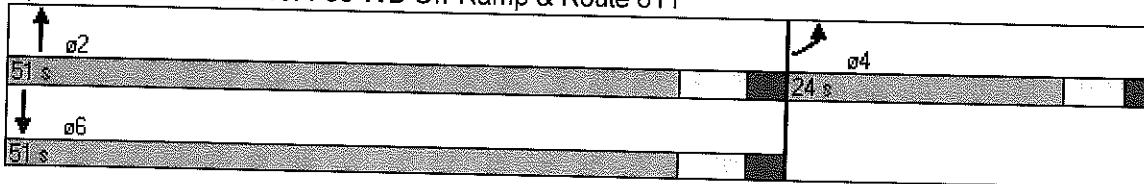
Natural Cycle: 75

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 15: I-80 WB Off-Ramp & Route 611



2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↕	↗	↖	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3391		1753	3628
Flt Permitted	0.95	1.00	1.00		0.07	1.00
Satd. Flow (perm)	1883	1631	3391		120	3628
Volume (vph)	148	66	1570	223	70	1312
Peak-hour factor, PHF	0.90	0.90	0.94	0.94	0.94	0.94
Adj Flow (vph)	164	73	1670	237	74	1396
RTOR Reduction (vph)	0	63	0	0	0	0
Lane Group Flow (vph)	164	10	1907	0	74	1396
Turn Type	Perm		pm+pt			
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	8.7	8.7	53.3		63.2	63.2
Effective Green, g (s)	11.7	11.7	57.3		67.2	67.2
Actuated g/C Ratio	0.13	0.13	0.66		0.77	0.77
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	254	220	2236		204	2806
v/s Ratio Prot	c0.09		c0.56		0.02	c0.38
v/s Ratio Perm		0.01			0.26	
v/c Ratio	0.65	0.04	0.85		0.36	0.50
Uniform Delay, d1	35.6	32.7	11.5		12.9	3.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.5	0.1	3.9		1.1	0.4
Delay (s)	41.2	32.8	15.4		14.0	4.0
Level of Service	D	C	B		B	A
Approach Delay (s)	38.6		15.4			4.5
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↕	↙	↗
Volume (vph)	148	66	1570	70	1312
Lane Group Flow (vph)	164	73	1907	74	1396
Turn Type	Perm		pm+pt		
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	16.0	16.0	63.0	11.0	74.0
Total Split (%)	17.8%	17.8%	70.0%	12.2%	82.2%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.64	0.26	0.84	0.34	0.50
Control Delay	46.8	11.5	15.8	9.5	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	11.5	15.8	9.5	4.4
Queue Length 50th (ft)	90	0	398	8	116
Queue Length 95th (ft)	#169	38	520	31	148
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	264	291	2294	218	2832
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	0.62	0.25	0.83	0.34	0.49

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 85.7

Natural Cycle: 60

Control Type: Semi-Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611

↙	↗		
g1	g2		
11	63		
↙			↙
g6			g8
11			16

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3627	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3627	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	50	135	158	1478	1247	44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	52	141	165	1540	1286	45
Lane Group Flow (vph)	52	141	165	1540	1331	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	58.0%
	ICU Level of Service B
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	50	135	158	1478	1247	44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Hourly flow rate (vph)	52	141	165	1540	1286	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.56					
vC, conflicting volume	2407	665	1331			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2730	665	1331			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	65	68			
cM capacity (veh/h)	6	397	514			

Direction Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	52	141	165	770	770	857	474
Volume Left	52	0	165	0	0	0	0
Volume Right	0	141	0	0	0	0	45
cSH	6	397	514	1700	1700	1700	1700
Volume to Capacity	8.69	0.35	0.32	0.45	0.45	0.50	0.28
Queue Length 95th (ft)	Err	39	34	0	0	0	0
Control Delay (s)	Err	18.9	15.3	0.0	0.0	0.0	0.0
Lane LOS	F	C	C				
Approach Delay (s)	2716.3		1.5			0.0	
Approach LOS	F						

Intersection Summary	
Average Delay	162.9
Intersection Capacity Utilization	58.0%
ICU Level of Service	B
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↖	↗	↖	↕	↗	↖	↕	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	12	12	14	11	12	14	11	12	12
Grade (%)		6%			5%			3%				
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	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95
Frt		0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.95
Fit Protected		0.99		0.95	0.95	1.00	0.95	1.00	0.85	1.00	1.00	1.00
Satd. Flow (prot)		1783		1639	1645	1647	1685	3486	1664	1770	3655	
Fit Permitted		0.99		0.95	0.95	1.00	0.30	1.00	1.00	0.14	1.00	
Satd. Flow (perm)		1783		1639	1645	1647	531	3486	1664	265	3655	
Volume (vph)	5	1	13	354	4	77	14	1064	450	93	924	14
Peak-hour factor, PHF	0.61	0.61	0.61	0.92	0.92	0.92	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	8	2	21	385	4	84	14	1086	459	95	943	14
RTOR Reduction (vph)	0	20	0	0	0	59	0	0	188	0	1	0
Lane Group Flow (vph)	0	11	0	193	196	25	14	1086	271	95	956	0
Turn Type	Split			Split		pm+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	1		2	8	1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)		1.3		10.5	10.5	15.1	20.6	20.6	31.1	30.7	30.7	
Effective Green, g (s)		3.3		12.5	12.5	18.6	24.1	24.1	36.6	34.2	34.2	
Actuated g/C Ratio		0.05		0.20	0.20	0.30	0.39	0.39	0.59	0.55	0.55	
Clearance Time (s)		6.0		6.0	6.0	5.5	7.5	7.5	6.0	5.5	7.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	5.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		95		330	332	600	206	1355	982	294	2016	
v/s Ratio Prot		c0.01		0.12	c0.12	0.00		c0.31	0.06	0.03	c0.26	
v/s Ratio Perm						0.01	0.03		0.11	0.15		
v/c Ratio		0.12		0.58	0.59	0.04	0.07	0.80	0.28	0.32	0.47	
Uniform Delay, d1		28.0		22.4	22.4	15.4	11.9	16.8	6.2	9.5	8.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6		2.6	2.8	0.0	0.3	4.0	0.2	0.6	0.4	
Delay (s)		28.5		25.0	25.2	15.4	12.2	20.8	6.4	10.1	8.8	
Level of Service		C		C	C	B	B	C	A	B	A	
Approach Delay (s)		28.5		23.4				16.5			8.9	
Approach LOS		C		C				B			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		15.1										
HCM Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		62.0										
Intersection Capacity Utilization		61.1%										
Analysis Period (min)		15										
c Critical Lane Group												

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↕	↖	↗	↘	↖	↗	↘	↖	↗
Volume (vph)	1	354	4	77	14	1064	450	93	924
Lane Group Flow (vph)	31	193	196	84	14	1086	459	95	957
Turn Type		Split		pm+ov	Perm		pm+ov	pm+pt	
Protected Phases	4	8	8	1		2	8	1	6
Permitted Phases				8	2		2	6	
Detector Phases	4	8	8	1	2	2	8	1	6
Minimum Initial (s)	4.0	7.0	7.0	4.0	10.0	10.0	7.0	4.0	10.0
Minimum Split (s)	10.0	13.0	13.0	9.5	17.5	17.5	13.0	9.5	17.5
Total Split (s)	10.0	17.0	17.0	12.0	31.0	31.0	17.0	12.0	43.0
Total Split (%)	14.3%	24.3%	24.3%	17.1%	44.3%	44.3%	24.3%	17.1%	61.4%
Yellow Time (s)	4.0	4.0	4.0	5.5	5.5	5.5	4.0	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Lead/Lag				Lead	Lag	Lag		Lead	
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	
Recall Mode	None	None	None	None	Min	Min	None	None	Min
v/c Ratio	0.16	0.54	0.54	0.12	0.06	0.74	0.35	0.28	0.46
Control Delay	19.4	29.7	29.8	4.7	14.0	18.6	1.2	8.4	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	29.7	29.8	4.7	14.0	18.6	1.2	8.4	8.1
Queue Length 50th (ft)	3	65	66	0	3	155	0	10	71
Queue Length 95th (ft)	16	#163	#166	26	15	290	14	37	161
Internal Link Dist (ft)	105		2012			2203			2327
Turn Bay Length (ft)		250		250	73		350	183	
Base Capacity (vph)	194	386	388	674	242	1595	1327	341	2275
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	0.50	0.51	0.12	0.06	0.68	0.35	0.28	0.42

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 57.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Woodland Road/Private Driveway & Route 611

↖ ø1 12s	↗ ø2 31s	↖ ø4 10s	↗ ø8 17s
↘ ø6 43s			

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%				-1%
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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		0.899			0.918							
Fit Protected		0.988			0.993		0.950			0.950		
Satd. Flow (prot)	0	1693	0	0	1630	0	1702	3522	0	1719	3557	0
Fit Permitted		0.988			0.993		0.950			0.950		
Satd. Flow (perm)	0	1693	0	0	1630	0	1702	3522	0	1719	3557	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45		45		
Link Distance (ft)		158			1027			2407		3261		
Travel Time (s)		3.1			20.0			36.5		49.4		
Volume (vph)	1	0	3	3	6	14	6	1140	1	7	1025	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	2	0	6	8	15	36	7	1239	1	8	1152	1
Lane Group Flow (vph)	0	8	0	0	59	0	7	1240	0	8	1153	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 41.5%      ICU Level of Service A  
 Analysis Period (min) 15

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

4: Meadows Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Sign Control		Stop			Stop		Free	Free		Free	Free	
Grade		2%			8%			1%				-1%
Volume (veh/h)	1	0	3	3	6	14	6	1140	1	7	1025	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	2	0	6	8	15	36	7	1239	1	8	1152	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1844	2421	576	1850	2421	620	1153			1240		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1844	2421	576	1850	2421	620	1153			1240		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	99	83	50	92	99			99		
CM capacity (veh/h)	25	31	460	44	31	430	602			557		
Directions Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	8	59	7	826	414	8	768	385				
Volume Left	2	8	7	0	0	8	0	0				
Volume Right	6	36	0	0	1	0	0	1				
cSH	87	78	602	1700	1700	557	1700	1700				
Volume to Capacity	0.09	0.76	0.01	0.49	0.24	0.01	0.45	0.23				
Queue Length 95th (ft)	7	92	1	0	0	1	0	0				
Control Delay (s)	50.6	133.7	11.0	0.0	0.0	11.6	0.0	0.0				
Lane LOS	F	F	B				B					
Approach Delay (s)	50.6	133.7	0.1			0.1						
Approach LOS	F	F										
<b>Intersection Summary</b>												
Average Delay			3.4									
Intersection Capacity Utilization			41.5%		ICU Level of Service		A					
Analysis Period (min)			15									

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Lane Group	EBI	EBT	EBR	WBI	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%				-5%
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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		0.940			0.960			0.996			0.996	
Flt Protected		0.978			0.971		0.950			0.950		
Satd. Flow (prot)	0	1712	0	0	1548	0	1694	3490	0	1753	3613	0
Flt Permitted		0.978			0.971		0.950			0.950		
Satd. Flow (perm)	0	1712	0	0	1548	0	1694	3490	0	1753	3613	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		294			1492			3261			2754	
Travel Time (s)		6.7			33.9			49.4			41.7	
Volume (vph)	28	6	27	31	6	15	25	1097	33	14	975	26
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Adj. Flow (vph)	31	7	30	43	7	21	28	1167	35	15	1026	29
Lane Group Flow (vph)	0	68	0	0	71	0	28	1202	0	15	1055	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.2%

ICU Level of Service A

Analysis Period (min) 15



2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↖	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%				-5%
Volume (veh/h)	28	6	27	31	6	15	25	1097	33	14	975	26
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Hourly flow rate (vph)	31	7	30	43	7	21	28	1167	35	15	1026	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1733	2328	528	1816	2325	601	1055			1202		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1733	2328	528	1816	2325	601	1055			1202		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	28	80	94	0	80	95	96			97		
cM capacity (veh/h)	43	34	495	37	34	443	656			576		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	68	71	28	778	424	15	684	371
Volume Left	31	43	28	0	0	15	0	0
Volume Right	30	21	0	0	35	0	0	29
cSH	70	50	656	1700	1700	576	1700	1700
Volume to Capacity	0.97	1.42	0.04	0.46	0.25	0.03	0.40	0.22
Queue Length 95th (ft)	123	165	3	0	0	2	0	0
Control Delay (s)	201.8	406.0	10.7	0.0	0.0	11.4	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	201.8	406.0	0.2			0.2		
Approach LOS	F	F						

Intersection Summary	
Average Delay	17.6
Intersection Capacity Utilization	42.2%
ICU Level of Service	A
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

6: Woodland Road & School Access



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	11	11
Grade (%)	1%			3%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1853	1680	1796	2017	1711	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1853	1680	1796	2017	1711	0
Headway Factor	1.01	0.92	0.98	0.90	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	537	6	2	430	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Adj. Flow (vph)	584	7	2	478	8	0
Lane Group Flow (vph)	584	7	2	478	8	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.3%
Analysis Period (min)	15
ICU Level of Service	A

2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	537	6	2	430	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Hourly flow rate (vph)	584	7	2	478	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TW/TL		
Median storage veh				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			590	1066	584	
vC1, stage 1 conf vol				584		
vC2, stage 2 conf vol				482		
vCu, unblocked vol			590	1066	584	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)				5.4		
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	98	100	
cM capacity (veh/h)			985	379	512	
Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	584	7	2	478	8	
Volume Left	0	0	2	0	8	
Volume Right	0	7	0	0	0	
cSH	1700	1700	985	1700	379	
Volume to Capacity	0.34	0.00	0.00	0.28	0.02	
Queue Length 95th (ft)	0	0	0	0	2	
Control Delay (s)	0.0	0.0	8.7	0.0	14.7	
Lane LOS			A		B	
Approach Delay (s)	0.0		0.0		14.7	
Approach LOS					B	
<b>Intersection Summary</b>						
Average Delay			0.1			
Intersection Capacity Utilization			38.3%		ICU Level of Service	A
Analysis Period (min)			15			

2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.869	
Flt Protected			0.950		0.999	
Satd. Flow (prot)	1853	1680	1761	1977	1517	0
Flt Permitted			0.950		0.999	
Satd. Flow (perm)	1853	1680	1761	1977	1517	0
Headway Factor	1.01	0.92	1.01	0.92	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	535	2	58	430	2	74
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Adj. Flow (vph)	660	2	68	506	4	148
Lane Group Flow (vph)	660	2	68	506	152	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	46.2%
Analysis Period (min)	15
ICU Level of Service	A

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	535	2	58	430	2	74
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Hourly flow rate (vph)	660	2	68	506	4	148
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TW/TL		
Median storage veh				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			663	1303	660	
vC1, stage 1 conf vol				660		
vC2, stage 2 conf vol				642		
vCu, unblocked vol			663	1303	660	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)				5.4		
tF (s)			2.2	3.5	3.3	
p0 queue free %			93	99	68	
cM capacity (veh/h)			926	303	463	

Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	660	2	68	506	152
Volume Left	0	0	68	0	4
Volume Right	0	2	0	0	148
cSH	1700	1700	926	1700	456
Volume to Capacity	0.39	0.00	0.07	0.30	0.33
Queue Length 95th (ft)	0	0	6	0	36
Control Delay (s)	0.0	0.0	9.2	0.0	16.8
Lane LOS			A		C
Approach Delay (s)	0.0		1.1		16.8
Approach LOS					C

Intersection Summary			
Average Delay		2.3	
Intersection Capacity Utilization		46.2%	ICU Level of Service A
Analysis Period (min)		15	

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↑		↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>			0.996		0.976	
Fl <sub>t</sub> Protected	0.950				0.960	
Satd. Flow (prot)	1805	2027	1959	0	1678	0
Fl <sub>t</sub> Permitted	0.950				0.960	
Satd. Flow (perm)	1805	2027	1959	0	1678	0
Headway Factor	0.97	0.89	0.93	0.93	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	400		1342	
Travel Time (s)		16.0	6.8		26.1	
Volume (vph)	2	607	486	15	9	2
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Adj. Flow (vph)	2	639	523	16	14	3
Lane Group Flow (vph)	2	639	539	0	17	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.9%
ICU Level of Service	A
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Movement	EB1	EB2	WB1	WB2	SB1	SB2
Lane Configurations	↖	↑	↗		↘	↗
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	2	607	486	15	9	2
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	2	639	523	16	14	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL		
Median storage veh				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	539				1174	531
vC1, stage 1 conf vol					531	
vC2, stage 2 conf vol					643	
vCu, unblocked vol	539				1174	531
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1030				350	549
Direction Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	2	639	539		17	
Volume Left	2	0	0		14	
Volume Right	0	0	16		3	
cSH	1030	1700	1700		374	
Volume to Capacity	0.00	0.38	0.32		0.05	
Queue Length 95th (ft)	0	0	0		4	
Control Delay (s)	8.5	0.0	0.0		15.1	
Lane LOS	A				C	
Approach Delay (s)	0.0		0.0		15.1	
Approach LOS					C	
<b>Intersection Summary</b>						
Average Delay			0.2			
Intersection Capacity Utilization			41.9%		ICU Level of Service	A
Analysis Period (min)			15			

2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBI	EBR	NBI	NBT	SBT	SBR
Lane Configurations	T			T	T	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994			0.920		
Flt Protected	0.954			0.996		
Satd. Flow (prot)	1673	0	0	1838	1623	0
Flt Permitted	0.954			0.996		
Satd. Flow (perm)	1673	0	0	1838	1623	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45		
Link Distance (ft)	1794			1439		
Travel Time (s)	30.6			21.8		
Volume (vph)	132	6	10	110	102	149
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Adj. Flow (vph)	161	7	13	147	119	173
Lane Group Flow (vph)	168	0	0	160	292	0
Sign Control	Stop			Free		

Intersection Summary

Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	28.8%
Analysis Period (min)	15
	ICU Level of Service A



2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↓	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	132	6	10	110	102	149
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Hourly flow rate (vph)	161	7	13	147	119	173
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	379	205	292			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	379	205	292			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	99	99			
cM capacity (veh/h)	617	835	1270			
Direction Lane #	EB 1	NB 1	SB 1			
Volume Total	168	160	292			
Volume Left	161	13	0			
Volume Right	7	0	173			
cSH	624	1270	1700			
Volume to Capacity	0.27	0.01	0.17			
Queue Length 95th (ft)	27	1	0			
Control Delay (s)	12.9	0.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.9	0.7	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			3.7			
Intersection Capacity Utilization	28.8%		ICU Level of Service	A		
Analysis Period (min)	15					

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↘			↕			↕	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	8	8	8
Grade (%)		-4%			4%			1%				-1%
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		0.98		1.00	1.00			0.89			0.88	
Flt Protected		1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)		1806		1619	1765			1582			1422	
Flt Permitted		1.00		0.32	1.00			0.93			0.93	
Satd. Flow (perm)		1800		546	1765			1486			1328	
Volume (vph)	3	390	55	196	395	0	47	1	194	1	0	6
Peak-hour factor, PHF	0.84	0.84	0.84	0.93	0.93	0.93	0.71	0.71	0.71	0.88	0.88	0.88
Adj. Flow (vph)	4	464	65	211	425	0	66	1	273	1	0	7
RTOR Reduction (vph)	0	9	0	0	0	0	0	221	0	0	6	0
Lane Group Flow (vph)	0	524	0	211	425	0	0	119	0	0	2	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8				4
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		19.1		29.5	29.5			8.2				8.2
Effective Green, g (s)		21.1		31.5	31.5			9.2				9.2
Actuated g/C Ratio		0.43		0.65	0.65			0.19				0.19
Clearance Time (s)		6.0		6.0	6.0			5.0				5.0
Vehicle Extension (s)		6.0		3.0	6.0			3.0				3.0
Lane Grp Cap (vph)		780		494	1142			281				251
v/s Ratio Prot				c0.06	0.24							
v/s Ratio Perm		c0.29		0.22			c0.08					0.00
v/c Ratio		0.67		0.43	0.37		0.42					0.01
Uniform Delay, d1		11.0		5.4	4.0		17.4					16.0
Progression Factor		1.00		1.00	1.00		1.00					1.00
Incremental Delay, d2		3.5		0.6	0.6		1.0					0.0
Delay (s)		14.6		6.0	4.6		18.4					16.1
Level of Service		B		A	A		B					B
Approach Delay (s)		14.6			5.0		18.4					16.1
Approach LOS		B			A		B					B
<b>Intersection Summary</b>												
HCM Average Control Delay		11.4					HCM Level of Service					B
HCM Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		48.7					Sum of lost time (s)		12.0			
Intersection Capacity Utilization		76.1%					ICU Level of Service					D
Analysis Period (min)		15										
c Critical Lane Group												

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕	↖	↗		↕		↕
Volume (vph)	3	390	196	395	47	1	1	0
Lane Group Flow (vph)	0	533	211	425	0	340	0	8
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	33.0	33.0	12.0	45.0	15.0	15.0	15.0	15.0
Total Split (%)	55.0%	55.0%	20.0%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.66	0.41	0.38		0.67		0.03
Control Delay		13.8	6.1	4.9		11.9		13.6
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		13.8	6.1	4.9		11.9		13.6
Queue Length 50th (ft)		118	19	44		17		0
Queue Length 95th (ft)		191	41	86		44		10
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)			100					
Base Capacity (vph)		959	520	1247		553		312
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		0.56	0.41	0.34		0.61		0.03

Intersection Summary

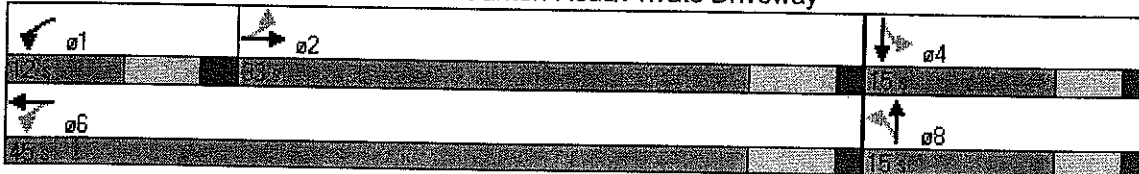
Cycle Length: 60

Actuated Cycle Length: 48

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway



2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.99		0.88	
Flt Protected		0.97	1.00		0.99	
Satd. Flow (prot)		1756	1769		1773	
Flt Permitted		0.51	1.00		0.99	
Satd. Flow (perm)		910	1769		1773	
Volume (vph)	301	284	270	17	38	321
Peak-hour factor, PHF	0.79	0.79	0.84	0.84	0.81	0.81
Adj. Flow (vph)	381	359	321	20	47	396
RTOR Reduction (vph)	0	0	3	0	343	0
Lane Group Flow (vph)	0	740	338	0	100	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		51.3	30.5		7.4	
Effective Green, g (s)		53.3	32.5		9.4	
Actuated g/C Ratio		0.75	0.46		0.13	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		887	813		236	
v/s Ratio Prot		c0.20	0.19		c0.06	
v/s Ratio Perm		c0.43				
v/c Ratio		0.83	0.42		0.42	
Uniform Delay, d1		5.8	12.8		28.2	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		7.9	1.0		1.2	
Delay (s)		13.7	13.7		29.4	
Level of Service		B	B		C	
Approach Delay (s)		13.7	13.7		29.4	
Approach LOS		B	B		C	
<b>Discard Summary</b>						
HCM Average Control Delay		18.3		HCM Level of Service		B
HCM Volume to Capacity ratio		0.76				
Actuated Cycle Length (s)		70.7		Sum of lost time (s)		8.0
Intersection Capacity Utilization		78.8%		ICU Level of Service		D
Analysis Period (min)		15				

c Critical Lane Group

2007 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390

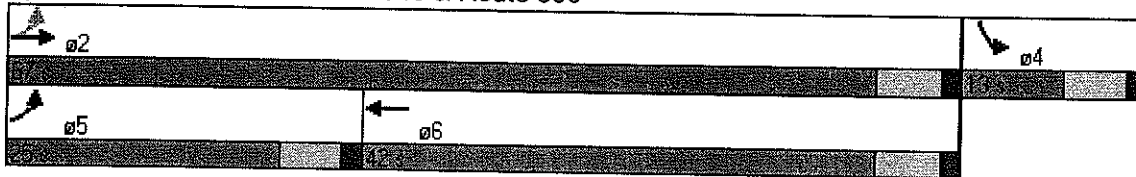


Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↕	↕	↕
Volume (vph)	301	284	270	38
Lane Group Flow (vph)	0	740	341	443
Turn Type	pm+pl			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2.5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	25.0	67.0	42.0	13.0
Total Split (%)	31.3%	83.8%	52.5%	16.3%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		0.83	0.43	0.76
Control Delay		9.0	14.2	16.5
Queue Delay		0.0	0.0	0.0
Total Delay		9.0	14.2	16.5
Queue Length 50th (ft)		98	93	22
Queue Length 95th (ft)		118	153	75
Internal Link Dist (ft)		491	1298	1509
Turn Bay Length (ft)				
Base Capacity (vph)		1003	897	580
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		0.74	0.38	0.76

Phase Diagram Summary

Cycle Length: 80  
 Actuated Cycle Length: 71.4  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord

Splits and Phases: 11: Route 940 & Route 390



2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)	-2%			2%			-3%			-1%		
Turning Speed (mph)	15		9	15		9	15		9	15		9
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	0.999			0.966			0.973			0.970		
Flt Protected	0.994			0.999			0.983			0.967		
Satd. Flow (prot)	0	1788	0	0	1720	0	0	1567	0	0	1697	0
Flt Permitted	0.994			0.999			0.983			0.967		
Satd. Flow (perm)	0	1788	0	0	1720	0	0	1567	0	0	1697	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)	45			45			35			45		
Link Distance (ft)	1662			865			282			1220		
Travel Time (s)	25.2			13.1			5.5			18.5		
Volume (vph)	37	281	4	4	256	89	3	4	2	87	11	28
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	42	316	4	5	316	110	7	9	4	99	13	32
Lane Group Flow (vph)	0	362	0	0	431	0	0	20	0	0	143	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 59.2%

ICU Level of Service B

Analysis Period (min): 15

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			-1%	
Volume (veh/h)	37	281	4	4	256	89	3	4	2	87	11	28
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Hourly flow rate (vph)	42	316	4	5	316	110	7	9	4	99	12	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	426			320			820	837	318	791	784	371
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426			320			820	837	318	791	784	371
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			97	97	99	66	96	95
cM capacity (veh/h)	1128			1240			263	291	723	289	312	675
Direction Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	362	431	20	143								
Volume Left	42	5	7	99								
Volume Right	4	110	4	32								
cSH	1128	1240	322	334								
Volume to Capacity	0.04	0.00	0.06	0.43								
Queue Length 95th (ft)	3	0	5	52								
Control Delay (s)	1.3	0.1	16.9	23.6								
Lane LOS	A	A	C	C								
Approach Delay (s)	1.3	0.1	16.9	23.6								
Approach LOS			C	C								
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization		59.2%				ICU Level of Service				B		
Analysis Period (min)			15									

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

13: Woodland Road & Western Site Driveway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
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)	1891	1714	1752	1967	1770	1689
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	863			1227	233	
Travel Time (s)	14.7			20.9	7.9	
Volume (vph)	208	408	26	285	216	35
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Adj. Flow (vph)	245	453	29	339	240	39
Lane Group Flow (vph)	245	453	29	339	240	39
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	36.2%
Analysis Period (min)	15
ICU Level of Service	A



2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

13: Woodland Road & Western Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	208	408	26	285	216	35
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Hourly flow rate (vph)	245	453	29	339	240	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			245		642	245
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			245		642	245
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		44	95
cM capacity (veh/h)			1321		429	794

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	245	453	29	339	240	39
Volume Left	0	0	29	0	240	0
Volume Right	0	453	0	0	0	39
cSH	1700	1700	1321	1700	429	794
Volume to Capacity	0.14	0.27	0.02	0.20	0.56	0.05
Queue Length 95th (ft)	0	0	2	0	83	4
Control Delay (s)	0.0	0.0	7.8	0.0	23.5	9.8
Lane LOS			A		C	A
Approach Delay (s)	0.0		0.6		21.6	
Approach LOS					C	

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization	36.2%		ICU Level of Service
Analysis Period (min)		15	A

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%		2%		0%	
Storage Length (ft)	250		100		0	0
Storage Lanes	1		1		1	1
Turning Speed (mph)	9		15		15	9
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)	1891	1714	1752	1967	1770	1689
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	1227			2146	250	
Travel Time (s)	20.9			36.6	8.5	
Volume (vph)	103	140	64	95	216	35
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Adj. Flow (vph)	121	156	71	113	240	39
Lane Group Flow (vph)	121	156	71	113	240	39
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.8%
ICU Level of Service	A
Analysis Period (min)	15

2007 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	103	140	64	95	216	35
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Hourly flow rate (vph)	121	156	71	113	240	39
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			121			376 121
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			121			376 121
tC, single (s)			4.1			6.4 6.2
tC, 2 stage (s)						
tF (s)			2.2			3.5 3.3
p0 queue free %			95			60 96
cM capacity (veh/h)			1466			595 930
<b>Direction Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NE 1</b>	<b>NE 2</b>
Volume Total	121	156	71	113	240	39
Volume Left	0	0	71	0	240	0
Volume Right	0	156	0	0	0	39
cSH	1700	1700	1466	1700	595	930
Volume to Capacity	0.07	0.09	0.05	0.07	0.40	0.04
Queue Length 95th (ft)	0	0	4	0	49	3
Control Delay (s)	0.0	0.0	7.6	0.0	15.1	9.0
Lane LOS			A			C A
Approach Delay (s)	0.0	2.9		14.2		
Approach LOS					B	
<b>Intersection Summary</b>						
Average Delay			6.1			
Intersection Capacity Utilization			28.8%	ICU Level of Service		A
Analysis Period (min)			15			

***2017 BASE CONDITIONS***





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↘		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Fr <sub>t</sub>	1.00	0.85		1.00	1.00	
Fl <sub>t</sub> Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2026	1813		1792	1810	
Fl <sub>t</sub> Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2026	1813		1792	1810	
Volume (vph)	834	17	0	1203	1236	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	948	19	0	1322	1405	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	948	19	0	1322	1405	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.0	14.0		33.0	33.0	
Effective Green, g (s)	16.0	16.0		36.0	36.0	
Actuated g/C Ratio	0.27	0.27		0.60	0.60	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	540	483		1075	1086	
v/s Ratio Prot	c0.47			0.74	c0.78	
v/s Ratio Perm		0.01				
v/c Ratio	1.76	0.04		1.23	1.29	
Uniform Delay, d <sub>1</sub>	22.0	16.3		12.0	12.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d <sub>2</sub>	347.6	0.0		111.7	139.1	
Delay (s)	369.6	16.3		123.7	151.1	
Level of Service	F	B		F	F	
Approach Delay (s)	362.6			123.7	151.1	
Approach LOS	F			F	F	

**Intersection Summary**

HCM Average Control Delay	196.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	184.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

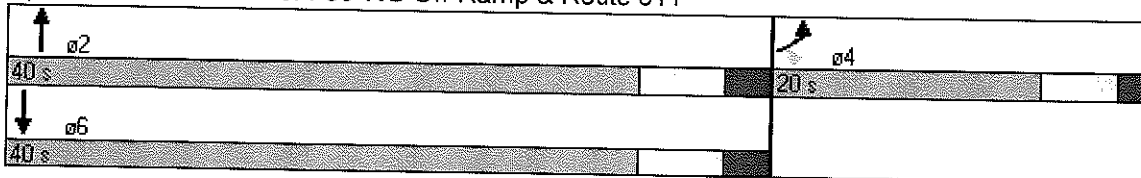


Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↑
Volume (vph)	834	17	1203	1236
Lane Group Flow (vph)	948	19	1322	1405
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	20.0	20.0	40.0	40.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag	Lead-Lag Optimize?			
Recall Mode	None	None	Min	Min
v/c Ratio	1.76	0.04	1.23	1.29
Control Delay	369.4	16.7	129.2	157.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	369.4	16.7	129.2	157.0
Queue Length 50th (ft)	~528	5	~611	~671
Queue Length 95th (ft)	#708	18	#833	#867
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	540	483	1075	1086
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	1.76	0.04	1.23	1.29

**Intersection Summary**

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Natural Cycle: 150  
 Control Type: Semi Act-Uncoord  
 ~ 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: I-80 WB Off-Ramp & Route 611





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↕	↕	↘	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3330		1753	3628
Flt Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1883	1631	3330		217	3628
Volume (vph)	365	169	1580	343	142	1183
Peak-hour factor, PHF	0.83	0.83	0.98	0.98	0.83	0.83
Adj. Flow (vph)	440	204	1612	350	171	1425
RTOR Reduction (vph)	0	86	0	0	0	0
Lane Group Flow (vph)	440	118	1962	0	171	1425
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	21.4	21.4	26.1		39.0	39.0
Effective Green, g (s)	24.4	24.4	30.1		43.0	43.0
Actuated g/C Ratio	0.32	0.32	0.40		0.57	0.57
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	609	528	1329		305	2069
v/s Ratio Prot	c0.23		c0.59		0.07	c0.39
v/s Ratio Perm		0.07			0.25	
v/c Ratio	0.72	0.22	1.48		0.56	0.69
Uniform Delay, d1	22.5	18.6	22.7		32.5	11.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.2	218.5		2.4	1.5
Delay (s)	26.7	18.8	241.1		34.8	12.9
Level of Service	C	B	F		C	B
Approach Delay (s)	24.2		241.1			15.3
Approach LOS	C		F			B

Intersection Summary			
HCM Average Control Delay	122.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



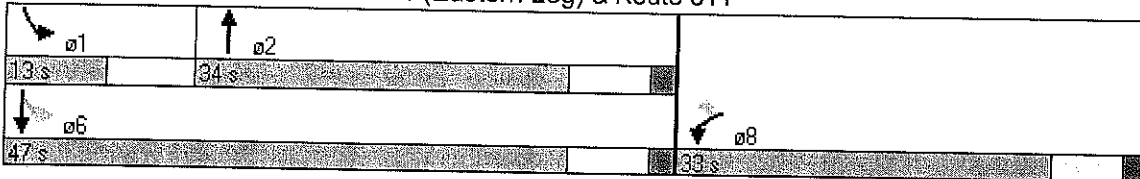


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↖	↗	↕	↘	↙
Volume (vph)	365	169	1580	142	1183
Lane Group Flow (vph)	440	204	1962	171	1425
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	33.0	33.0	34.0	13.0	47.0
Total Split (%)	41.3%	41.3%	42.5%	16.3%	58.8%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.72	0.33	1.48	0.56	0.69
Control Delay	29.9	9.2	241.6	18.3	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	9.2	241.6	18.3	14.5
Queue Length 50th (ft)	180	25	~711	38	246
Queue Length 95th (ft)	247	61	#879	78	299
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	684	673	1329	307	2070
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	0.30	1.48	0.56	0.69

**Intersection Summary**

Cycle Length: 80  
 Actuated Cycle Length: 75.5  
 Natural Cycle: 100  
 Control Type: Semi Act-Uncoord  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611**





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↶↷	↶↷	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frnt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3588	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3588	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	14	197	401	1348	1128	51
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	21	294	422	1419	1484	67
Lane Group Flow (vph)	21	294	422	1419	1551	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 68.4% ICU Level of Service C  
 Analysis Period (min) 15



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	14	197	401	1348	1128	51
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Hourly flow rate (vph)	21	294	422	1419	1484	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.65					
vC, conflicting volume	3071	776	1551			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3652	776	1551			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	12	0			
cM capacity (veh/h)	0	336	423			

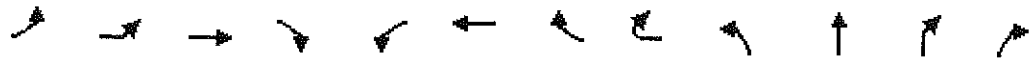
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	21	294	422	709	709	989	562
Volume Left	21	0	422	0	0	0	0
Volume Right	0	294	0	0	0	0	67
cSH	0	336	423	1700	1700	1700	1700
Volume to Capacity	3886.94	0.88	1.00	0.42	0.42	0.58	0.33
Queue Length 95th (ft)	Err	205	313	0	0	0	0
Control Delay (s)	Err	58.5	74.8	0.0	0.0	0.0	0.0
Lane LOS	F	F	F				
Approach Delay (s)	718.1		17.1			0.0	
Approach LOS	F						

**Intersection Summary**

Average Delay	69.5
Intersection Capacity Utilization	68.4%
ICU Level of Service	C
Analysis Period (min)	15

2017 Base Conditions  
Friday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations			↕			↕			↙	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	15	13	13	13	13	11	12	12	12
Grade (%)			6%			5%				3%		
Total Lost time (s)			4.0			4.0			4.0	4.0		
Lane Util. Factor			1.00			1.00			1.00	0.95		
Fr <sub>t</sub>			0.96			0.94			1.00	0.99		
Fl <sub>t</sub> Protected			0.98			0.97			0.95	1.00		
Satd. Flow (prot)			1861			1722			1685	3445		
Fl <sub>t</sub> Permitted			0.87			0.82			0.17	1.00		
Satd. Flow (perm)			1655			1453			309	3445		
Volume (vph)	5	1	3	4	121	9	98	1	6	1248	1	107
Peak-hour factor, PHF	0.56	0.56	0.56	0.56	0.89	0.89	0.89	0.89	0.99	0.99	0.99	0.99
Adj. Flow (vph)	9	2	5	7	136	10	110	1	6	1261	1	108
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	5	0	0
Lane Group Flow (vph)	0	0	18	0	0	257	0	0	6	1365	0	0
Turn Type	Perm	Perm			Perm				Perm			
Protected Phases			4			8				2		
Permitted Phases	4	4			8				2			
Actuated Green, G (s)			17.2			17.2			31.6	31.6		
Effective Green, g (s)			19.2			19.2			35.1	35.1		
Actuated g/C Ratio			0.24			0.24			0.44	0.44		
Clearance Time (s)			6.0			6.0			7.5	7.5		
Vehicle Extension (s)			3.0			3.0			5.0	5.0		
Lane Grp Cap (vph)			398			349			136	1513		
v/s Ratio Prot										c0.40		
v/s Ratio Perm			0.01			c0.18			0.02			
v/c Ratio			0.04			0.74			0.04	0.90		
Uniform Delay, d1			23.3			28.0			12.8	20.8		
Progression Factor			1.00			1.00			1.00	1.00		
Incremental Delay, d2			0.0			7.9			0.3	8.3		
Delay (s)			23.4			35.9			13.1	29.1		
Level of Service			C			D			B	C		
Approach Delay (s)			23.4			35.9				29.0		
Approach LOS			C			D				C		

**Intersection Summary**

HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2017 Base Conditions 3: Woodland Road/Private Driveway/Stricklands Road & Route 611  
 Friday P.M. Peak Hour



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↖	↕			↗		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11	11	11
Grade (%)			-7%			-2%		
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00		
Frt		1.00	1.00			0.93		
Flt Protected		0.95	1.00			0.98		
Satd. Flow (prot)		1770	3658			1655		
Flt Permitted		0.10	1.00			0.98		
Satd. Flow (perm)		191	3658			1655		
Volume (vph)	1	63	1054	9	1	1	1	1
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	77	1285	11	1	1	1	1
RTOR Reduction (vph)	0	0	0	0	0	1	0	0
Lane Group Flow (vph)	0	78	1296	0	0	3	0	0
Turn Type	pm+pt	pm+pt			Perm			
Protected Phases	1	1	6			9		
Permitted Phases	6	6			9			
Actuated Green, G (s)		42.1	42.1			1.1		
Effective Green, g (s)		45.6	45.6			3.1		
Actuated g/C Ratio		0.57	0.57			0.04		
Clearance Time (s)		5.5	7.5			6.0		
Vehicle Extension (s)		3.0	5.0			3.0		
Lane Grp Cap (vph)		237	2088			64		
v/s Ratio Prot		0.03	0.35					
v/s Ratio Perm		0.16				0.00		
v/c Ratio		0.33	0.62			0.05		
Uniform Delay, d1		13.9	11.4			37.0		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.8	0.8			0.3		
Delay (s)		14.7	12.2			37.3		
Level of Service		B	B			D		
Approach Delay (s)			12.4			37.3		
Approach LOS			B			D		

Intersection Summary

2017 Base Conditions  
Friday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBL	SBT	SWL
Lane Configurations			↕		↕	↙	↕		↙	↕	↘
Volume (vph)	5	1	3	121	9	6	1248	1	63	1054	1
Lane Group Flow (vph)	0	0	23	0	257	6	1370	0	78	1296	4
Turn Type	Perm	Perm		Perm		Perm		pm+pt	pm+pt		
Protected Phases			4		8		2	1	1	6	9
Permitted Phases	4	4		8		2		6	6		
Detector Phases	4	4	4	8	8	2	2	1	1	6	9
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	10.0	4.0	4.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	17.5	17.5	9.5	9.5	17.5	13.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	36.0	36.0	12.0	12.0	48.0	19.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	36.0%	36.0%	12.0%	12.0%	48.0%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0
Lead/Lag						Lag	Lag	Lead	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min	None	None	Min	None
v/c Ratio			0.05		0.68	0.06	0.83		0.28	0.59	0.02
Control Delay			17.0		34.2	19.3	26.6		11.7	12.6	34.5
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay			17.0		34.2	19.3	26.6		11.7	12.6	34.5
Queue Length 50th (ft)			5		100	1	277		12	158	1
Queue Length 95th (ft)			14		206	12	#650		46	349	12
Internal Link Dist (ft)			105		2012		2203			2327	625
Turn Bay Length (ft)						73			183		
Base Capacity (vph)			576		509	106	1644		286	2209	277
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		0.50	0.06	0.83		0.27	0.59	0.01

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 73.8

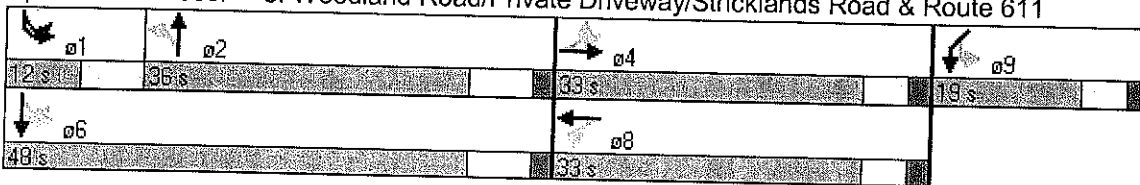
Natural Cycle: 90

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Lanes, Volumes, Timings

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Traffic Planning & Design Inc.

Synchro 6 Report  
EMM 11/30/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↗		↗	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%			-1%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor		0.865			0.883							
Fit Protected					0.997		0.950			0.950		
Satd. Flow (prot)	0	1648	0	0	1574	0	1702	3522	0	1670	3455	0
Fit Permitted					0.997		0.950			0.950		
Satd. Flow (perm)	0	1648	0	0	1574	0	1702	3522	0	1670	3455	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		158			1027			2407			3261	
Travel Time (s)		3.1			20.0			36.5			49.4	
Volume (vph)	0	0	4	1	1	13	4	1346	1	6	1121	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	5	2	2	26	4	1388	1	7	1351	1
Lane Group Flow (vph)	0	5	0	0	30	0	4	1389	0	7	1352	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 47.2% ICU Level of Service A  
 Analysis Period (min) 15



2017 Base Conditions  
Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↖	↗		↖	↗	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%			-1%	
Volume (veh/h)	0	0	4	1	1	13	4	1346	1	6	1121	1
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	5	2	2	26	4	1388	1	7	1351	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2095	2763	676	2091	2763	694	1352			1389		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2095	2763	676	2091	2763	694	1352			1389		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	93	89	93	99			98		
cM capacity (veh/h)	25	19	396	29	18	384	505			474		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	5	30	4	925	464	7	900	451
Volume Left	0	2	4	0	0	7	0	0
Volume Right	5	26	0	0	1	0	0	1
cSH	396	122	505	1700	1700	474	1700	1700
Volume to Capacity	0.01	0.25	0.01	0.54	0.27	0.02	0.53	0.27
Queue Length 95th (ft)	1	23	1	0	0	1	0	0
Control Delay (s)	14.2	43.7	12.2	0.0	0.0	12.7	0.0	0.0
Lane LOS	B	E	B			B		
Approach Delay (s)	14.2	43.7	0.0			0.1		
Approach LOS	B	E						

Intersection Summary

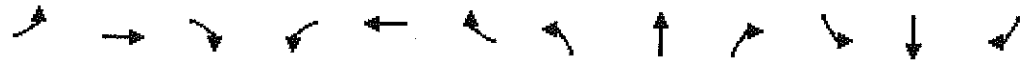
Average Delay	0.5
Intersection Capacity Utilization	47.2%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.938			0.934			0.998			0.996	
Frt Protected		0.978			0.983		0.950			0.950		
Satd. Flow (prot)	0	1709	0	0	1524	0	1694	3497	0	1753	3613	0
Frt Permitted		0.978			0.983		0.950			0.950		
Satd. Flow (perm)	0	1709	0	0	1524	0	1694	3497	0	1753	3613	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		294			1492			3261			2754	
Travel Time (s)		6.7			33.9			49.4			41.7	
Volume (vph)	20	4	20	13	7	18	31	1308	20	22	1095	31
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	4	22	17	8	24	34	1348	21	29	1422	34
Lane Group Flow (vph)	0	48	0	0	49	0	34	1369	0	29	1456	0
Sign Control		Stop			Stop			Free			Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 47.2%      ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%			-5%	
Volume (veh/h)	20	4	20	13	7	18	31	1308	20	22	1095	31
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Hourly flow rate (vph)	22	4	22	17	8	24	34	1348	21	29	1422	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2267	2934	728	2220	2941	685	1457			1369		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2267	2934	728	2220	2941	685	1457			1369		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	65	94	0	38	94	93			94		
cM capacity (veh/h)	10	13	366	15	13	390	460			497		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	49	34	899	470	29	948	508
Volume Left	22	17	34	0	0	29	0	0
Volume Right	22	24	0	0	21	0	0	34
cSH	18	26	460	1700	1700	497	1700	1700
Volume to Capacity	2.73	1.85	0.07	0.53	0.28	0.06	0.56	0.30
Queue Length 95th (ft)	166	148	6	0	0	5	0	0
Control Delay (s)	1229.0	720.4	13.5	0.0	0.0	12.7	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	1229.0	720.4	0.3			0.2		
Approach LOS	F	F						

**Intersection Summary**

Average Delay	32.2
Intersection Capacity Utilization	47.2%
Analysis Period (min)	15
ICU Level of Service	A



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↓	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971				0.960	
Frt Protected				0.993	0.966	
Satd. Flow (prot)	1464	0	0	1625	1670	0
Frt Permitted				0.993	0.966	
Satd. Flow (perm)	1464	0	0	1625	1670	0
Headway Factor	1.10	1.10	1.07	1.07	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	136	37	25	164	64	27
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	17%	10%	10%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	181	49	34	222	114	48
Lane Group Flow (vph)	230	0	0	256	162	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 34.6% ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕		↔		↕	
Sign Control	Free		Free		Stop	
Grade	1%		-3%		0%	
Volume (veh/h)	136	37	25	164	64	27
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Hourly flow rate (vph)	181	49	34	222	114	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			231		495	206
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			231		495	206
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			97		78	94
cM capacity (veh/h)			1291		520	835

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	231	255	162
Volume Left	0	34	114
Volume Right	49	0	48
cSH	1700	1291	585
Volume to Capacity	0.14	0.03	0.28
Queue Length 95th (ft)	0	2	28
Control Delay (s)	0.0	1.2	13.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	13.5
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.972				0.964	
Flt Protected				0.997	0.965	
Satd. Flow (prot)	1741	0	0	1752	1625	0
Flt Permitted				0.997	0.965	
Satd. Flow (perm)	1741	0	0	1752	1625	0
Headway Factor	1.05	1.05	1.05	1.05	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	129	34	10	151	38	14
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.72	0.72	0.80	0.80	0.25	0.25
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	179	47	13	189	152	56
Lane Group Flow (vph)	226	0	0	201	208	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 26.2%      ICU Level of Service A  
 Analysis Period (min) 15

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	129	34	10	151	38	14
Peak Hour Factor	0.72	0.72	0.80	0.80	0.25	0.25
Hourly flow rate (vph)	179	47	12	189	152	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			226		417	203
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			226		417	203
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		74	93
cM capacity (veh/h)			1330		587	838
<b>Direction Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	226	201	208			
Volume Left	0	12	152			
Volume Right	47	0	56			
cSH	1700	1330	639			
Volume to Capacity	0.13	0.01	0.33			
Queue Length 95th (ft)	0	1	35			
Control Delay (s)	0.0	0.6	13.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.6	13.3			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			4.5			
Intersection Capacity Utilization		26.2%		ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr <sub>t</sub>			0.999		0.932	
Fl <sub>t</sub> Protected		0.999			0.976	
Satd. Flow (prot)	0	1835	1747	0	1629	0
Fl <sub>t</sub> Permitted		0.999			0.976	
Satd. Flow (perm)	0	1835	1747	0	1629	0
Headway Factor	1.02	1.02	1.06	1.06	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	819		1342	
Travel Time (s)		16.0	14.0		26.1	
Volume (vph)	3	140	158	1	3	3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	4	167	205	1	6	6
Lane Group Flow (vph)	0	171	206	0	12	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 19.8%      ICU Level of Service A  
 Analysis Period (min) 15





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	3	140	158	1	3	3
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Hourly flow rate (vph)	4	167	205	1	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	206				380	206
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	206				380	206
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1365				622	835

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	170	206	12
Volume Left	4	0	6
Volume Right	0	1	6
cSH	1365	1700	713
Volume to Capacity	0.00	0.12	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.2	0.0	10.1
Lane LOS	A		B
Approach Delay (s)	0.2	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization	19.8%		ICU Level of Service A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.993				0.934	
Flt Protected	0.955			0.998		
Satd. Flow (prot)	1673	0	0	1842	1632	0
Flt Permitted	0.955			0.998		
Satd. Flow (perm)	1673	0	0	1842	1632	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	136	7	7	190	159	152
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	166	9	7	198	196	188
Lane Group Flow (vph)	175	0	0	205	384	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 32.3%      ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↓	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	136	7	7	190	159	152
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Hourly flow rate (vph)	166	9	7	198	196	188
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	503	290	384			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	503	290	384			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	99	99			
cM capacity (veh/h)	526	749	1175			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	174	205	384
Volume Left	166	7	0
Volume Right	9	0	188
cSH	533	1175	1700
Volume to Capacity	0.33	0.01	0.23
Queue Length 95th (ft)	35	0	0
Control Delay (s)	15.0	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	15.0	0.3	0.0
Approach LOS	B		

Intersection Summary		
Average Delay		3.5
Intersection Capacity Utilization	32.3%	ICU Level of Service
Analysis Period (min)		15
		A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
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	8	8	8
Grade (%)		-4%			4%			1%			-1%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.88			0.96	
Flt Protected		1.00			0.98			0.99			0.99	
Satd. Flow (prot)		1814			1737			1543			1551	
Flt Permitted		1.00			0.50			0.95			0.83	
Satd. Flow (perm)		1807			879			1473			1303	
Volume (vph)	4	578	56	246	523	1	43	3	280	3	9	4
Peak-hour factor, PHF	0.86	0.86	0.86	0.98	0.98	0.98	0.87	0.87	0.87	0.60	0.60	0.60
Adj. Flow (vph)	5	672	65	251	534	1	49	3	322	5	15	7
RTOR Reduction (vph)	0	4	0	0	0	0	0	272	0	0	6	0
Lane Group Flow (vph)	0	738	0	0	786	0	0	102	0	0	21	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		42.1			61.1			10.1			10.1	
Effective Green, g (s)		44.1			63.1			11.1			11.1	
Actuated g/C Ratio		0.54			0.77			0.14			0.14	
Clearance Time (s)		6.0			6.0			5.0			5.0	
Vehicle Extension (s)		6.0			6.0			3.0			3.0	
Lane Grp Cap (vph)		969			831			199			176	
v/s Ratio Prot					c0.17							
v/s Ratio Perm		0.41			c0.55			c0.07			0.02	
v/c Ratio		0.76			0.95			0.51			0.12	
Uniform Delay, d1		14.9			8.1			33.0			31.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.6			20.0			2.2			0.3	
Delay (s)		19.6			28.1			35.3			31.6	
Level of Service		B			C			D			C	
Approach Delay (s)		19.6			28.1			35.3			31.6	
Approach LOS		B			C			D			C	

**Intersection Summary**

HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	109.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

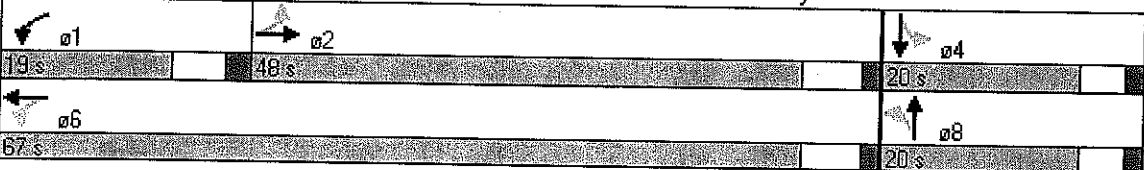


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Volume (vph)	4	578	246	523	43	3	3	9
Lane Group Flow (vph)	0	742	0	786	0	374	0	27
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	48.0	48.0	19.0	67.0	20.0	20.0	20.0	20.0
Total Split (%)	55.2%	55.2%	21.8%	77.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.76		0.99		0.79		0.15
Control Delay		22.3		39.3		20.4		26.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		22.3		39.3		20.4		26.4
Queue Length 50th (ft)		273		126		28		9
Queue Length 95th (ft)		442		#512		110		20
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)								
Base Capacity (vph)		973		796		529		250
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		0.76		0.99		0.71		0.11

Intersection Summary

Cycle Length: 87  
 Actuated Cycle Length: 82.2  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Fr <sub>t</sub>		1.00	0.99		0.87	
Fl <sub>t</sub> Protected		0.97	1.00		1.00	
Satd. Flow (prot)		1766	1770		1724	
Fl <sub>t</sub> Permitted		0.44	1.00		1.00	
Satd. Flow (perm)		809	1770		1724	
Volume (vph)	518	343	330	18	12	440
Peak-hour factor, PHF	0.89	0.89	0.93	0.93	0.80	0.80
Adj. Flow (vph)	582	385	355	19	15	550
RTOR Reduction (vph)	0	0	2	0	494	0
Lane Group Flow (vph)	0	967	372	0	71	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		81.0	45.0		8.4	
Effective Green, g (s)		83.0	47.0		10.4	
Actuated g/C Ratio		0.82	0.46		0.10	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		964	820		177	
v/s Ratio Prot		c0.32	0.21		c0.04	
v/s Ratio Perm		c0.50				
v/c Ratio		1.00	0.45		0.40	
Uniform Delay, d1		9.2	18.5		42.6	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		29.7	1.1		1.5	
Delay (s)		38.9	19.6		44.1	
Level of Service		D	B		D	
Approach Delay (s)		38.9	19.6		44.1	
Approach LOS		D	B		D	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↕	↕	↕
Volume (vph)	518	343	330	12
Lane Group Flow (vph)	0	967	374	565
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2 5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	36.0	87.0	51.0	16.0
Total Split (%)	35.0%	84.5%	49.5%	15.5%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		1.01	0.45	0.84
Control Delay		42.6	20.8	17.3
Queue Delay		0.0	0.0	0.0
Total Delay		42.6	20.8	17.3
Queue Length 50th (ft)		~315	157	9
Queue Length 95th (ft)		#564	244	54
Internal Link Dist (ft)		491	1298	1509
Turn Bay Length (ft)				
Base Capacity (vph)		960	822	687
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		1.01	0.45	0.82

**Intersection Summary**

Cycle Length: 103

Actuated Cycle Length: 101.4

Natural Cycle: 150

Control Type: Semi Act-Uncoord

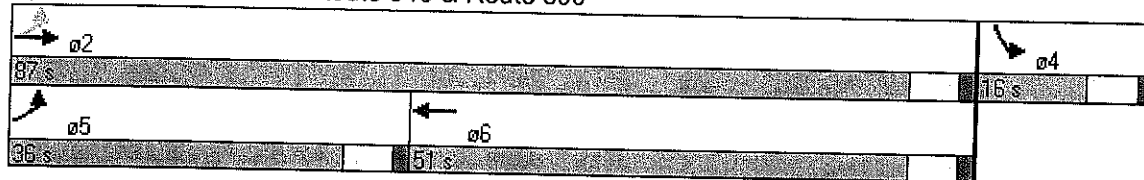
~ Volume exceeds capacity, queue is theoretically infinite.













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: 11: Route 940 & Route 390



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.961			0.979			0.974	
Flt Protected		0.994			0.999			0.989			0.963	
Satd. Flow (prot)	0	1804	0	0	1711	0	0	1587	0	0	1697	0
Flt Permitted		0.994			0.999			0.989			0.963	
Satd. Flow (perm)	0	1804	0	0	1711	0	0	1587	0	0	1697	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	46	304	5	6	317	132	5	13	3	103	5	26
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	51	338	6	7	377	157	6	16	4	118	6	30
Lane Group Flow (vph)	0	395	0	0	541	0	0	26	0	0	154	0
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 66.0%      ICU Level of Service C  
 Analysis Period (min) 15





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			-1%	
Volume (veh/h)	46	304	5	6	317	132	5	13	3	103	5	26
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Hourly flow rate (vph)	51	338	6	7	377	157	6	16	4	118	6	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	535			343			946	992	341	925	916	456
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	535			343			946	992	341	925	916	456
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			97	93	99	47	98	95
cM capacity (veh/h)	1033			1216			217	233	702	225	258	605

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	394	542	26	154
Volume Left	51	7	6	118
Volume Right	6	157	4	30
cSH	1033	1216	252	258
Volume to Capacity	0.05	0.01	0.10	0.60
Queue Length 95th (ft)	4	0	9	88
Control Delay (s)	1.6	0.2	20.9	37.7
Lane LOS	A	A	C	E
Approach Delay (s)	1.6	0.2	20.9	37.7
Approach LOS			C	E

Intersection Summary			
Average Delay		6.3	
Intersection Capacity Utilization		66.0%	ICU Level of Service C
Analysis Period (min)		15	

2017 Base Conditions  
Saturday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Flt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2046	1830		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2046	1830		1792	1810	
Volume (vph)	528	19	0	1244	1050	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	550	20	0	1309	1129	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	550	20	0	1309	1129	0
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.0	16.0		41.0	41.0	
Effective Green, g (s)	18.0	18.0		44.0	44.0	
Actuated g/C Ratio	0.26	0.26		0.63	0.63	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	526	471		1126	1138	
v/s Ratio Prot	c0.27			c0.73	0.62	
v/s Ratio Perm		0.01				
v/c Ratio	1.05	0.04		1.16	0.99	
Uniform Delay, d1	26.0	19.5		13.0	12.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	51.7	0.0		83.2	24.8	
Delay (s)	77.7	19.6		96.2	37.6	
Level of Service	E	B		F	D	
Approach Delay (s)	75.6			96.2	37.6	
Approach LOS	E			F	D	

Intersection Summary

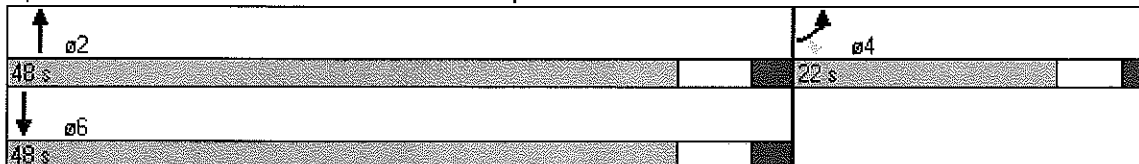
HCM Average Control Delay	70.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	160.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Volume (vph)	528	19	1244	1050
Lane Group Flow (vph)	550	20	1309	1129
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	22.0	22.0	48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	Min	Min
v/c Ratio	1.05	0.04	1.16	0.99
Control Delay	80.5	19.9	100.6	40.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	80.5	19.9	100.6	40.3
Queue Length 50th (ft)	~263	6	~684	418
Queue Length 95th (ft)	#441	22	#916	#738
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	526	471	1126	1138
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	1.05	0.04	1.16	0.99

**Intersection Summary**

Cycle Length: 70  
 Actuated Cycle Length: 70  
 Natural Cycle: 140  
 Control Type: Semi Act-Uncoord  
 ~ 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: I-80 WB Off-Ramp & Route 611



2017 Base Conditions  
Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶	↕	↷	↷	↶
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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
Fr <sub>t</sub>	1.00	0.85	0.98		1.00	1.00
Fl <sub>t</sub> Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3393		1753	3628
Fl <sub>t</sub> Permitted	0.95	1.00	1.00		0.09	1.00
Satd. Flow (perm)	1883	1631	3393		167	3628
Volume (vph)	122	75	1435	197	79	1201
Peak-hour factor, PHF	0.90	0.90	0.94	0.94	0.94	0.94
Adj. Flow (vph)	136	83	1527	210	84	1278
RTOR Reduction (vph)	0	69	0	0	0	0
Lane Group Flow (vph)	136	14	1737	0	84	1278
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.5	9.5	36.1		47.9	47.9
Effective Green, g (s)	12.5	12.5	40.1		51.9	51.9
Actuated g/C Ratio	0.17	0.17	0.55		0.72	0.72
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	325	282	1879		291	2601
v/s Ratio Prot	c0.07		c0.51		0.03	c0.35
v/s Ratio Perm		0.01			0.18	
v/c Ratio	0.42	0.05	0.92		0.29	0.49
Uniform Delay, d <sub>1</sub>	26.7	25.0	14.8		11.8	4.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d <sub>2</sub>	0.9	0.1	8.9		0.6	0.4
Delay (s)	27.6	25.1	23.6		12.3	4.9
Level of Service	C	C	C		B	A
Approach Delay (s)	26.6		23.6			5.4
Approach LOS	C		C			A

Intersection Summary

HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

2017 Base Conditions  
 Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↕	↙	↗
Volume (vph)	122	75	1435	79	1201
Lane Group Flow (vph)	136	83	1737	84	1278
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	33.0	33.0	34.0	13.0	47.0
Total Split (%)	41.3%	41.3%	42.5%	16.3%	58.8%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.38	0.22	0.89	0.25	0.48
Control Delay	24.5	7.0	26.5	5.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	7.0	26.5	5.9	5.9
Queue Length 50th (ft)	45	0	~404	9	106
Queue Length 95th (ft)	89	30	#590	26	184
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	632	602	1943	347	2652
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	0.14	0.89	0.24	0.48

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 71.2

Natural Cycle: 60

Control Type: Semi Act-Uncoord

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611

↙ σ1	↗ σ2	
13 s	34 s	
↙ σ6		↗ σ8
47 s		33 s

2017 Base Conditions  
 Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↙	↖	↑↑	↑↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.850			0.997	
Fit Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3634	0
Fit Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3634	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	22	160	187	1323	1120	23
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	23	167	195	1378	1155	24
Lane Group Flow (vph)	23	167	195	1378	1179	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization: 55.4%      ICU Level of Service: B  
 Analysis Period (min): 15

2017 Base Conditions  
 Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	22	160	187	1323	1120	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Hourly flow rate (vph)	23	167	195	1378	1155	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.61					
vC, conflicting volume	2245	589	1178			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2401	589	1178			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	63	67			
cM capacity (veh/h)	11	446	588			

Direction / Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	23	167	195	689	689	770	409
Volume Left	23	0	195	0	0	0	0
Volume Right	0	167	0	0	0	0	24
cSH	11	446	588	1700	1700	1700	1700
Volume to Capacity	2.09	0.37	0.33	0.41	0.41	0.45	0.24
Queue Length 95th (ft)	94	43	36	0	0	0	0
Control Delay (s)	1183.2	17.8	14.1	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	158.7		1.7			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay		11.2	
Intersection Capacity Utilization	55.4%		ICU Level of Service B
Analysis Period (min)		15	

2017 Base Conditions  
 Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations			↕			↕			↗	↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	15	13	13	13	13	11	12	12	12
Grade (%)			6%			5%				3%		
Total Lost time (s)			4.0			4.0			4.0	4.0		
Lane Util. Factor			1.00			1.00			1.00	0.95		
Fr <sub>t</sub>			0.91			0.98			1.00	0.99		
Fl <sub>t</sub> Protected			0.99			0.96			0.95	1.00		
Satd. Flow (prot)			1786			1774			1685	3452		
Fl <sub>t</sub> Permitted			0.90			0.74			0.25	1.00		
Satd. Flow (perm)			1641			1374			436	3452		
Volume (vph)	6	1	1	16	66	5	8	1	17	1242	3	83
Peak-hour factor, PHF	0.61	0.61	0.61	0.61	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	2	2	26	72	5	9	1	17	1267	3	85
RTOR Reduction (vph)	0	0	22	0	0	1	0	0	0	3	0	0
Lane Group Flow (vph)	0	0	18	0	0	86	0	0	17	1352	0	0
Turn Type	Perm	Perm			Perm				Perm			
Protected Phases			4			8				2		
Permitted Phases	4	4			8				2			
Actuated Green, G (s)			10.6			10.6			47.7	47.7		
Effective Green, g (s)			12.6			12.6			51.2	51.2		
Actuated g/C Ratio			0.15			0.15			0.60	0.60		
Clearance Time (s)			6.0			6.0			7.5	7.5		
Vehicle Extension (s)			3.0			3.0			5.0	5.0		
Lane Grp Cap (vph)			241			202			260	2062		
v/s Ratio Prot										0.39		
v/s Ratio Perm			0.01			0.06			0.04			
v/c Ratio			0.07			0.43			0.07	0.66		
Uniform Delay, d1			31.5			33.3			7.2	11.4		
Progression Factor			1.00			1.00			1.00	1.00		
Incremental Delay, d2			0.1			1.4			0.2	1.0		
Delay (s)			31.7			34.7			7.4	12.4		
Level of Service			C			C			A	B		
Approach Delay (s)			31.7			34.7				12.4		
Approach LOS			C			C				B		

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



2017 Base Conditions  
 Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↕	↕↕			↕↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11	11	11
Grade (%)			-7%			-2%		
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			1.00		
Flt Protected		1.00	1.00			0.93		
Flt Permitted		0.95	1.00			0.98		
Satd. Flow (prot)		1770	3655			1655		
Satd. Flow (perm)		221	3655			1655		
Volume (vph)	1	5	1061	17	1	1	1	1
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	5	1083	17	1	1	1	1
RTOR Reduction (vph)	0	0	1	0	0	1	0	0
Lane Group Flow (vph)	0	6	1099	0	0	3	0	0
Turn Type	pm+pt	pm+pt			Perm			
Protected Phases	1	1	6			9		
Permitted Phases	6	6			9			
Actuated Green, G (s)		54.3	54.3			1.3		
Effective Green, g (s)		57.8	57.8			3.3		
Actuated g/C Ratio		0.67	0.67			0.04		
Clearance Time (s)		5.5	7.5			6.0		
Vehicle Extension (s)		3.0	5.0			3.0		
Lane Grp Cap (vph)		196	2465			64		
v/s Ratio Prot		0.00	0.30					
v/s Ratio Perm		0.02				0.00		
v/c Ratio		0.03	0.45			0.05		
Uniform Delay, d1		7.6	6.5			39.7		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		0.1	0.3			0.3		
Delay (s)		7.7	6.8			40.0		
Level of Service		A	A			D		
Approach Delay (s)			6.8			40.0		
Approach LOS			A			D		
<b>Intersection Summary</b>								

2017 Base Conditions  
Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway/Stricklands Road & Route 611



Lane Group	EBL2	EBL	EBT	WBL	WBT	NBL	NBT	SBL2	SBL	SBT	SWL
Lane Configurations			↕		↕	↙	↘		↙	↘	↙
Volume (vph)	6	1	1	66	5	17	1242	1	5	1061	1
Lane Group Flow (vph)	0	0	40	0	87	17	1355	0	6	1100	4
Turn Type	Perm	Perm		Perm		Perm		pm+pt	pm+pt		
Protected Phases			4		8		2	1	1	6	9
Permitted Phases	4	4		8		2		6	6		
Detector Phases	4	4	4	8	8	2	2	1	1	6	9
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	10.0	4.0	4.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	17.5	17.5	9.5	9.5	17.5	13.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	39.0	39.0	12.0	12.0	51.0	19.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	39.0%	39.0%	12.0%	12.0%	51.0%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0
Lead/Lag						Lag	Lag	Lead	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	Min	Min	None	None	Min	None
v/c Ratio			0.13		0.37	0.07	0.59		0.02	0.43	0.02
Control Delay			14.0		27.1	11.0	11.6		8.2	6.8	28.5
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay			14.0		27.1	11.0	11.6		8.2	6.8	28.5
Queue Length 50th (ft)			4		25	2	103		1	72	1
Queue Length 95th (ft)			18		81	20	#506		7	238	11
Internal Link Dist (ft)			105		2012		2203			2327	625
Turn Bay Length (ft)						73			183		
Base Capacity (vph)			524		423	227	2295		271	2618	279
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			0.08		0.21	0.07	0.59		0.02	0.42	0.01

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.5

Natural Cycle: 70

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Woodland Road/Private Driveway/Stricklands Road & Route 611

01	02	04	09
12s	39s	30s	19s
06	08		
51s	30s		



2017 Base Conditions  
Saturday P.M. Peak Hour

4: Meadows Road/Trinity Hill Road & Route 611

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↗		↖	↖	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%			-1%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.892			0.938					0.950		0.950
Flt Protected		0.990			0.991		0.950			0.950		0.950
Satd. Flow (prot)	0	1683	0	0	1662	0	1702	3522	0	1719	3557	0
Flt Permitted		0.990			0.991		0.950			0.950		0.950
Satd. Flow (perm)	0	1683	0	0	1662	0	1702	3522	0	1719	3557	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		158			1027			2407			3261	
Travel Time (s)		3.1			20.0			36.5			49.4	
Volume (vph)	1	0	4	4	8	10	8	1247	1	1	1075	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	8	10	21	26	9	1355	1	1	1208	1
Lane Group Flow (vph)	0	10	0	0	57	0	9	1356	0	1	1209	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 44.5%  
 Analysis Period (min) 15  
 ICU Level of Service A

2017 Base Conditions  
Saturday P.M. Peak Hour

4: Meadows Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↕		↙	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%				
Volume (veh/h)	1	0	4	4	8	10	8	1247	1	1	1075	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	2	0	8	10	21	26	9	1355	1	1	1208	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1942	2585	604	1988	2585	678	1209			1357		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1942	2585	604	1988	2585	678	1209			1357		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	100	98	70	16	93	98			100		
cM capacity (veh/h)	10	25	441	35	24	394	573			503		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	10	56	9	904	453	1	805	404
Volume Left	2	10	9	0	0	1	0	0
Volume Right	8	26	0	0	1	0	0	1
cSH	48	47	573	1700	1700	503	1700	1700
Volume to Capacity	0.21	1.21	0.02	0.53	0.27	0.00	0.47	0.24
Queue Length 95th (ft)	17	131	1	0	0	0	0	0
Control Delay (s)	99.6	337.5	11.4	0.0	0.0	12.2	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	99.6	337.5	0.1			0.0		
Approach LOS	F	F						

Intersection Summary	
Average Delay	7.6
Intersection Capacity Utilization	44.5%
ICU Level of Service	A
Analysis Period (min)	15

2017 Base Conditions  
 Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.940			0.958			0.996			0.996	
Flt Protected		0.978			0.971		0.950			0.950		
Satd. Flow (prot)	0	1712	0	0	1544	0	1694	3490	0	1753	3613	0
Flt Permitted		0.978			0.971		0.950			0.950		
Satd. Flow (perm)	0	1712	0	0	1544	0	1694	3490	0	1753	3613	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		485			1492			3261			2754	
Travel Time (s)		11.0			33.9			49.4			41.7	
Volume (vph)	28	6	27	34	6	17	25	1197	36	16	1016	26
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	7	30	47	7	24	28	1273	38	17	1069	29
Lane Group Flow (vph)	0	68	0	0	78	0	28	1311	0	17	1098	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 45.5% ICU Level of Service A  
 Analysis Period (min) 15

2017 Base Conditions  
Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↗		↖	↗	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%			-5%	
Volume (veh/h)	28	6	27	34	6	17	25	1197	36	16	1016	26
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Hourly flow rate (vph)	31	7	30	47	7	24	28	1273	38	17	1069	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1837	2485	549	1950	2480	656	1098			1312		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1837	2485	549	1950	2480	656	1098			1312		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	8	75	94	0	75	94	96			97		
cM capacity (veh/h)	34	27	479	27	27	407	631			523		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	68	78	28	849	463	17	713	385
Volume Left	31	47	28	0	0	17	0	0
Volume Right	30	24	0	0	38	0	0	29
cSH	55	38	631	1700	1700	523	1700	1700
Volume to Capacity	1.23	2.03	0.04	0.50	0.27	0.03	0.42	0.23
Queue Length 95th (ft)	147	210	3	0	0	2	0	0
Control Delay (s)	319.8	706.6	11.0	0.0	0.0	12.1	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	319.8	706.6	0.2			0.2		
Approach LOS	F	F						

Intersection Summary

Average Delay	29.6
Intersection Capacity Utilization	45.5%
ICU Level of Service	A
Analysis Period (min)	15

2017 Base Conditions  
 Saturday P.M. Peak Hour

6: Woodland Road & School Access



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990					
Flt Protected				0.999	0.950	
Satd. Flow (prot)	1713	0	0	1763	1711	0
Flt Permitted				0.999	0.950	
Satd. Flow (perm)	1713	0	0	1763	1711	0
Headway Factor	1.10	1.10	1.07	1.07	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	82	6	2	75	5	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	89	7	2	83	8	0
Lane Group Flow (vph)	96	0	0	85	8	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 15.6%      ICU Level of Service A  
 Analysis Period (min) 15



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	82	6	2	75	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Hourly flow rate (vph)	89	7	2	83	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			96	180	92	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			96	180	92	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	99	100	
cM capacity (veh/h)			1498	808	965	
Direction	Lane #	EB 1	WB 1	NB 1		
Volume Total		96	86	8		
Volume Left		0	2	8		
Volume Right		7	0	0		
cSH		1700	1498	808		
Volume to Capacity		0.06	0.00	0.01		
Queue Length 95th (ft)		0	0	1		
Control Delay (s)		0.0	0.2	9.5		
Lane LOS			A	A		
Approach Delay (s)		0.0	0.2	9.5		
Approach LOS			A			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			15.6%	ICU Level of Service		A
Analysis Period (min)			15			

2017 Base Conditions  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖		↗		↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.910	
Flt Protected				0.997	0.984	
Satd. Flow (prot)	1783	0	0	1786	1565	0
Flt Permitted				0.997	0.984	
Satd. Flow (perm)	1783	0	0	1786	1565	0
Headway Factor	1.05	1.05	1.05	1.05	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	79	3	5	74	3	6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	98	4	6	87	6	12
Lane Group Flow (vph)	102	0	0	93	18	0
Sign Control	Free			Free	Stop	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 18.0%      ICU Level of Service A  
 Analysis Period (min) 15

2017 Base Conditions  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕		↕
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	79	3	5	74	3	6
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Hourly flow rate (vph)	98	4	6	87	6	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			101		198	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			101		198	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1491		787	956

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	101	93	18
Volume Left	0	6	6
Volume Right	4	0	12
cSH	1700	1491	893
Volume to Capacity	0.06	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.5	9.1
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.1
Approach LOS			A

Intersection Summary			
Average Delay		1.0	
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

2017 Base Conditions  
 Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↘	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.939	
Flt Protected		0.998			0.973	
Satd. Flow (prot)	0	1833	1754	0	1636	0
Flt Permitted		0.998			0.973	
Satd. Flow (perm)	0	1833	1754	0	1636	0
Headway Factor	1.02	1.02	1.06	1.06	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	819		1342	
Travel Time (s)		16.0	14.0		26.1	
Volume (vph)	3	82	76	10	4	3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	3	86	82	11	6	5
Lane Group Flow (vph)	0	89	93	0	11	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 16.7% ICU Level of Service A  
 Analysis Period (min) 15

2017 Base Conditions  
Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	3	82	76	10	4	3
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	3	86	82	11	6	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	92				180	87
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92				180	87
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1502				809	972

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	89	92	11
Volume Left	3	0	6
Volume Right	0	11	5
cSH	1502	1700	871
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.3	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	16.7%		ICU Level of Service A
Analysis Period (min)	15		

2017 Base Conditions  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr <sub>t</sub>	0.999				0.947	
Fl <sub>t</sub> Protected	0.953			0.999		
Satd. Flow (prot)	1680	0	0	1844	1671	0
Fl <sub>t</sub> Permitted	0.953			0.999		
Satd. Flow (perm)	1680	0	0	1844	1671	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	85	1	4	136	128	82
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	104	1	5	181	149	95
Lane Group Flow (vph)	105	0	0	186	244	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 23.2%      ICU Level of Service A  
 Analysis Period (min) 15

2017 Base Conditions  
Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙			↑	↓	↘
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	85	1	4	136	128	82
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Hourly flow rate (vph)	104	1	5	181	149	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	389	197	244			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	389	197	244			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	100	100			
cM capacity (veh/h)	613	845	1322			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	105	187	244			
Volume Left	104	5	0			
Volume Right	1	0	95			
cSH	615	1322	1700			
Volume to Capacity	0.17	0.00	0.14			
Queue Length 95th (ft)	15	0	0			
Control Delay (s)	12.1	0.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.1	0.3	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay		2.4				
Intersection Capacity Utilization		23.2%		ICU Level of Service		A
Analysis Period (min)		15				

2017 Base Conditions  
 Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
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	8	8	8
Grade (%)		-4%			4%			1%			-1%	
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.88			0.88	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1825			1740			1567			1418	
Flt Permitted		0.99			0.60			0.97			0.92	
Satd. Flow (perm)		1815			1053			1521			1318	
Volume (vph)	4	459	22	188	469	0	22	1	198	1	0	8
Peak-hour factor, PHF	0.84	0.84	0.84	0.93	0.93	0.93	0.71	0.71	0.71	0.88	0.88	0.88
Adj. Flow (vph)	5	546	26	202	504	0	31	1	279	1	0	9
RTOR Reduction (vph)	0	2	0	0	0	0	0	236	0	0	8	0
Lane Group Flow (vph)	0	575	0	0	706	0	0	75	0	0	2	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		26.9			45.1			9.0			9.0	
Effective Green, g (s)		28.9			47.1			10.0			10.0	
Actuated g/C Ratio		0.44			0.72			0.15			0.15	
Clearance Time (s)		6.0			6.0			5.0			5.0	
Vehicle Extension (s)		6.0			6.0			3.0			3.0	
Lane Grp Cap (vph)		806			912			234			202	
v/s Ratio Prot					c0.17							
v/s Ratio Perm		0.32			c0.39			c0.05			0.00	
v/c Ratio		0.71			0.77			0.32			0.01	
Uniform Delay, d1		14.7			5.7			24.5			23.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.3			5.2			0.8			0.0	
Delay (s)		19.0			10.9			25.3			23.4	
Level of Service		B			B			C			C	
Approach Delay (s)		19.0			10.9			25.3			23.4	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



2017 Base Conditions  
Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Volume (vph)	4	459	188	469	22	1	1	0
Lane Group Flow (vph)	0	577	0	706	0	311	0	10
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6 1	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	47.0	47.0	20.0	67.0	20.0	20.0	20.0	20.0
Total Split (%)	54.0%	54.0%	23.0%	77.0%	23.0%	23.0%	23.0%	23.0%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.73		0.78		0.66		0.05
Control Delay		21.3		12.5		13.9		18.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		21.3		12.5		13.9		18.1
Queue Length 50th (ft)		176		84		12		0
Queue Length 95th (ft)		297		#231		36		13
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)								
Base Capacity (vph)		994		1054		571		327
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		0.58		0.67		0.54		0.03

Intersection Summary

Cycle Length: 87  
 Actuated Cycle Length: 66  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway

↙ ø1 20 s	→ ø2 47 s	↓ ø4 20 s
↖ ø6 67 s		↑ ø8 20 s

2017 Base Conditions  
Saturday P.M. Peak Hour

11: Route 940 & Route 390



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Fr <sub>t</sub>		1.00	0.99		0.88	
Fl <sub>t</sub> Protected		0.98	1.00		0.99	
Satd. Flow (prot)		1756	1768		1774	
Fl <sub>t</sub> Permitted		0.46	1.00		0.99	
Satd. Flow (perm)		828	1768		1774	
Volume (vph)	336	322	305	19	45	352
Peak-hour factor, PHF	0.79	0.79	0.84	0.84	0.81	0.81
Adj. Flow (vph)	425	408	363	23	56	435
RTOR Reduction (vph)	0	0	2	0	280	0
Lane Group Flow (vph)	0	833	384	0	211	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		74.1	44.1		13.9	
Effective Green, g (s)		76.1	46.1		15.9	
Actuated g/C Ratio		0.76	0.46		0.16	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		871	815		282	
v/s Ratio Prot		c0.25	0.22		c0.12	
v/s Ratio Perm		c0.48				
v/c Ratio		0.96	0.47		0.75	
Uniform Delay, d1		10.5	18.6		40.1	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		21.2	1.2		10.3	
Delay (s)		31.6	19.8		50.5	
Level of Service		C	B		D	
Approach Delay (s)		31.6	19.8		50.5	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2017 Base Conditions  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390



Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↖	↗	↘
Volume (vph)	336	322	305	45
Lane Group Flow (vph)	0	833	386	491
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2 5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	30.0	80.0	50.0	23.0
Total Split (%)	29.1%	77.7%	48.5%	22.3%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		0.97	0.47	0.87
Control Delay		34.1	21.5	30.6
Queue Delay		0.0	0.0	0.0
Total Delay		34.1	21.5	30.6
Queue Length 50th (ft)		249	173	99
Queue Length 95th (ft)		#308	234	171
Internal Link Dist (ft)		491	1298	1730
Turn Bay Length (ft)				
Base Capacity (vph)		861	816	599
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		0.97	0.47	0.82

Intersection Summary

Cycle Length: 103

Actuated Cycle Length: 100.1

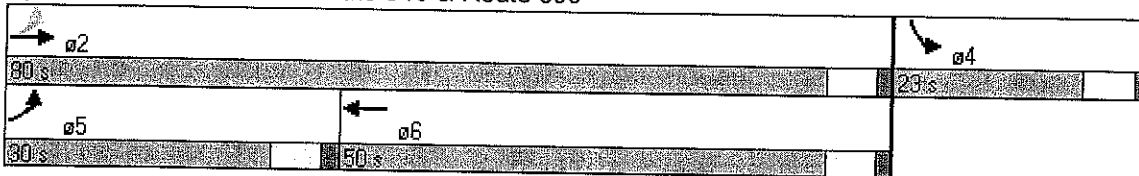
Natural Cycle: 80

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Route 940 & Route 390



2017 Base Conditions  
Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.964			0.965			0.969	
Flt Protected		0.994			0.999			0.984			0.967	
Satd. Flow (prot)	0	1787	0	0	1717	0	0	1556	0	0	1696	0
Flt Permitted		0.994			0.999			0.984			0.967	
Satd. Flow (perm)	0	1787	0	0	1717	0	0	1556	0	0	1696	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	45	317	5	5	285	106	4	5	3	103	14	35
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	51	356	6	6	352	131	9	11	7	117	16	40
Lane Group Flow (vph)	0	413	0	0	489	0	0	27	0	0	173	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 66.4%      ICU Level of Service C  
 Analysis Period (min) 15

2017 Base Conditions  
Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			Stop	
Volume (veh/h)	45	317	5	5	285	106	4	5	3	103	14	35
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Hourly flow rate (vph)	51	356	6	6	352	131	9	11	7	117	16	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None				None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	483			362			937	955	359	902	893	417
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	483			362			937	955	359	902	893	417
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			96	95	99	51	94	94
cM capacity (veh/h)	1075			1197			211	245	686	238	267	636

Direction Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	412	489	27	173
Volume Left	51	6	9	117
Volume Right	6	131	7	40
cSH	1075	1197	274	281
Volume to Capacity	0.05	0.01	0.10	0.61
Queue Length 95th (ft)	4	0	8	94
Control Delay (s)	1.5	0.2	19.5	36.3
Lane LOS	A	A	C	E
Approach Delay (s)	1.5	0.2	19.5	36.3
Approach LOS			C	E

**Intersection Summary**

Average Delay	6.8
Intersection Capacity Utilization	66.4%
ICU Level of Service	C
Analysis Period (min)	15

***2017 PROJECTED CONDITIONS***



2017 Projected Conditions  
Friday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2026	1813		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2026	1813		1792	1810	
Volume (vph)	1159	17	0	1263	1279	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	1317	19	0	1388	1453	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1317	19	0	1388	1453	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.0	14.0		33.0	33.0	
Effective Green, g (s)	16.0	16.0		36.0	36.0	
Actuated g/C Ratio	0.27	0.27		0.60	0.60	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	540	483		1075	1086	
v/s Ratio Prot	c0.65			0.77	c0.80	
v/s Ratio Perm		0.01				
v/c Ratio	2.44	0.04		1.29	1.34	
Uniform Delay, d1	22.0	16.3		12.0	12.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	653.1	0.0		138.1	158.4	
Delay (s)	675.1	16.3		150.1	170.4	
Level of Service	F	B		F	F	
Approach Delay (s)	665.7			150.1	170.4	
Approach LOS	F			F	F	

Intersection Summary

HCM Average Control Delay	322.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	208.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



2017 Projected Conditions  
Friday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↓
Volume (vph)	1159	17	1263	1279
Lane Group Flow (vph)	1317	19	1388	1453
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	20.0	20.0	40.0	40.0
Total Split (%)	33.3%	33.3%	66.7%	66.7%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag	Lead-Lag Optimize?			
Recall Mode	None	None	Min	Min
v/c Ratio	2.44	0.04	1.29	1.34
Control Delay	671.3	16.7	155.9	176.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	671.3	16.7	155.9	176.4
Queue Length 50th (ft)	~815	5	~662	~708
Queue Length 95th (ft)	#1009	18	#887	#905
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	540	483	1075	1086
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	2.44	0.04	1.29	1.34

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Natural Cycle: 140

Control Type: Semi Act-Uncoord

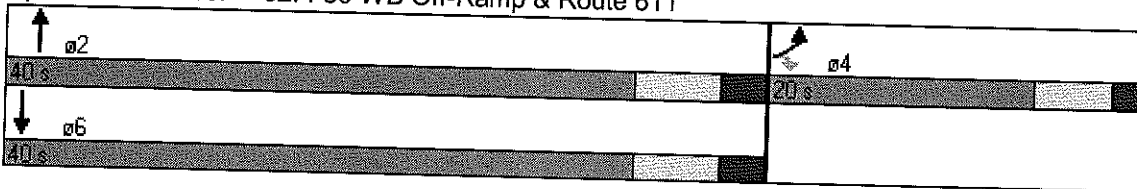
~ Volume exceeds capacity, queue is theoretically infinite.

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: 62: I-80 WB Off-Ramp & Route 611



2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↘			↑↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	0.97			0.95	1.00	
Fr <sub>t</sub>	1.00			1.00	1.00	
Fl <sub>t</sub> Protected	0.95			1.00	1.00	
Satd. Flow (prot)	3471			3404	1810	
Fl <sub>t</sub> Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	3471			3404	1810	
Volume (vph)	1159	17	0	1263	1279	0
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.88	0.88
Adj. Flow (vph)	1317	19	0	1388	1453	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1336	0	0	1388	1453	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	16.0			41.0	41.0	
Effective Green, g (s)	18.0			44.0	44.0	
Actuated g/C Ratio	0.26			0.63	0.63	
Clearance Time (s)	6.0			7.0	7.0	
Vehicle Extension (s)	3.0			6.0	6.0	
Lane Grp Cap (vph)	893			2140	1138	
v/s Ratio Prot	c0.38			0.41	c0.80	
v/s Ratio Perm						
v/c Ratio	1.50			0.65	1.28	
Uniform Delay, d <sub>1</sub>	26.0			8.2	13.0	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d <sub>2</sub>	229.2			1.1	131.5	
Delay (s)	255.2			9.3	144.5	
Level of Service	F			A	F	
Approach Delay (s)	255.2			9.3	144.5	
Approach LOS	F			A	F	

Intersection Summary

HCM Average Control Delay	134.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	145.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Lane Group	EBL	NBT	SBT
Lane Configurations	↘↘↘	↑↑	↑
Volume (vph)	1159	1263	1279
Lane Group Flow (vph)	1336	1388	1453
Turn Type			
Protected Phases	4	2	6
Permitted Phases			
Detector Phases	4	2	6
Minimum Initial (s)	4.0	12.0	12.0
Minimum Split (s)	10.0	19.0	19.0
Total Split (s)	22.0	48.0	48.0
Total Split (%)	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.5	4.5
All-Red Time (s)	2.0	2.5	2.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
v/c Ratio	1.50	0.65	1.28
Control Delay	254.1	10.0	149.7
Queue Delay	0.0	0.0	0.0
Total Delay	254.1	10.0	149.7
Queue Length 50th (ft)	~420	171	~811
Queue Length 95th (ft)	#524	233	#1015
Internal Link Dist (ft)	648	2214	366
Turn Bay Length (ft)			
Base Capacity (vph)	893	2140	1138
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.50	0.65	1.28

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Natural Cycle: 140

Control Type: Semi Act-Uncoord

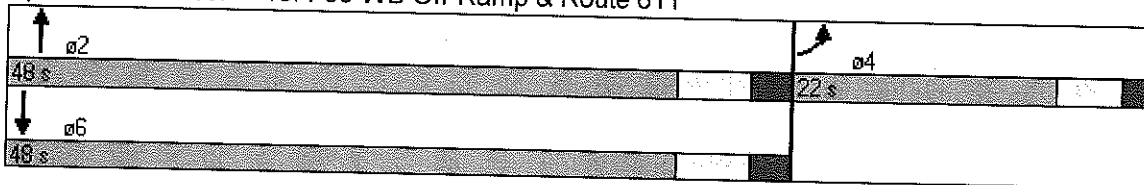
~ Volume exceeds capacity, queue is theoretically infinite.

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: I-80 WB Off-Ramp & Route 611



2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕↗	↕↗	↙	↕↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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
Flt	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)	1883	1631	3332		1753	3628
Flt Permitted	0.95	1.00	1.00		0.08	1.00
Satd. Flow (perm)	1883	1631	3332		142	3628
Volume (vph)	408	169	1905	403	142	1418
Peak-hour factor, PHF	0.83	0.83	0.98	0.98	0.83	0.83
Adj. Flow (vph)	492	204	1944	411	171	1708
RTOR Reduction (vph)	0	59	0	0	0	0
Lane Group Flow (vph)	492	145	2355	0	171	1708
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	26.1	26.1	44.1		57.9	57.9
Effective Green, g (s)	29.1	29.1	48.1		61.9	61.9
Actuated g/C Ratio	0.29	0.29	0.49		0.63	0.63
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	553	479	1619		248	2268
v/s Ratio Prot	c0.26		c0.71		0.07	c0.47
v/s Ratio Perm		0.09			0.36	
v/c Ratio	0.89	0.30	1.45		0.69	0.75
Uniform Delay, d1	33.4	27.1	25.4		25.2	13.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	16.0	0.4	208.1		7.8	1.9
Delay (s)	49.4	27.5	233.5		32.9	15.1
Level of Service	D	C	F		C	B
Approach Delay (s)	43.0		233.5			16.7
Approach LOS	D		F			B

Intersection Summary			
HCM Average Control Delay	124.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↙	↕↗	↙	↕↕
Volume (vph)	408	169	1905	142	1418
Lane Group Flow (vph)	492	204	2355	171	1708
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	34.0	34.0	52.0	14.0	66.0
Total Split (%)	34.0%	34.0%	52.0%	14.0%	66.0%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.89	0.38	1.46	0.69	0.75
Control Delay	53.3	18.3	233.5	32.7	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	18.3	233.5	32.7	16.1
Queue Length 50th (ft)	296	58	~1092	54	377
Queue Length 95th (ft)	#410	105	#1229	109	398
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	566	548	1618	251	2270
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	0.87	0.37	1.46	0.68	0.75

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99

Natural Cycle: 110

Control Type: Semi Act-Uncoord

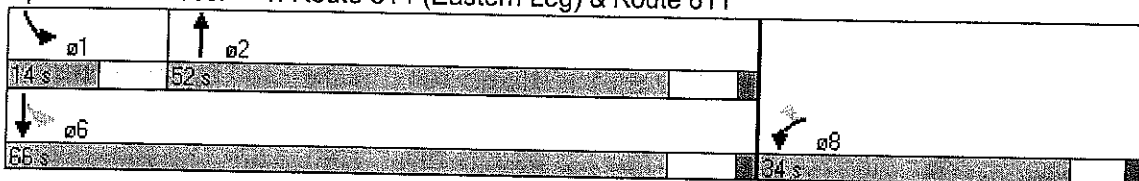
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611



2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷↷	↷↷	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3581	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3581	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	44	197	401	1673	1363	73
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	66	294	422	1761	1793	96
Lane Group Flow (vph)	66	294	422	1761	1889	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 75.5% ICU Level of Service D  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↘	↙	↑↑	↑↑	
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	44	197	401	1673	1363	73
Peak Hour Factor	0.67	0.67	0.95	0.95	0.76	0.76
Hourly flow rate (vph)	66	294	422	1761	1793	96
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.54					
vC, conflicting volume	3566	945	1889			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4878	945	1889			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	0	0			
cM capacity (veh/h)	0	259	313			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	66	294	422	881	881	1196	694
Volume Left	66	0	422	0	0	0	0
Volume Right	0	294	0	0	0	0	96
cSH	0	259	313	1700	1700	1700	1700
Volume to Capacity	Err	1.14	1.35	0.52	0.52	0.70	0.41
Queue Length 95th (ft)	Err	323	529	0	0	0	0
Control Delay (s)	Err	139.1	210.3	0.0	0.0	0.0	0.0
Lane LOS	F	F	F				
Approach Delay (s)	Err		40.7			0.0	
Approach LOS	F						

Intersection Summary

Average Delay	Err
Intersection Capacity Utilization	75.5%
Analysis Period (min)	15
ICU Level of Service	D

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↘	↗	↖	↕	↗	↖	↕	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	12	12	14	11	12	14	11	12	12
Grade (%)		6%			5%			3%				
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	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.95
Flt Protected		0.98		0.95	0.95	1.00	0.95	1.00	0.85	1.00	1.00	0.95
Satd. Flow (prot)		1858		1639	1647	1647	1685	3486	1664	1770	3658	
Flt Permitted		0.98		0.95	0.95	1.00	0.20	1.00	1.00	0.13	1.00	
Satd. Flow (perm)		1858		1639	1647	1647	363	3486	1664	245	3658	
Volume (vph)	5	3	4	378	9	158	6	1249	462	146	1054	9
Peak-hour factor, PHF	0.56	0.56	0.56	0.89	0.89	0.89	0.99	0.99	0.99	0.82	0.82	0.82
Adj. Flow (vph)	9	5	7	425	10	178	6	1262	467	178	1285	11
RTOR Reduction (vph)	0	7	0	0	0	103	0	0	193	0	1	0
Lane Group Flow (vph)	0	14	0	213	222	75	6	1262	274	178	1295	0
Turn Type	Split			Split		pm+ov	Perm		pm+ov	pm+pt		
Protected Phases	4	4		8	8	1		2	8	1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)		1.4		10.4	10.4	16.8	22.9	22.9	33.3	34.8	34.8	
Effective Green, g (s)		3.4		12.4	12.4	20.3	26.4	26.4	38.8	38.3	38.3	
Actuated g/C Ratio		0.05		0.19	0.19	0.31	0.40	0.40	0.59	0.58	0.58	
Clearance Time (s)		6.0		6.0	6.0	5.5	7.5	7.5	6.0	5.5	7.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	5.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		96		307	309	605	145	1392	977	324	2120	
v/s Ratio Prot		c0.01		0.13	c0.13	0.01		c0.36	0.05	0.07	c0.35	
v/s Ratio Perm						0.03	0.02		0.11	0.25		
v/c Ratio		0.15		0.69	0.72	0.12	0.04	0.91	0.28	0.55	0.61	
Uniform Delay, d1		30.0		25.1	25.2	16.5	12.1	18.7	6.7	11.4	9.0	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7		6.6	7.8	0.1	0.2	9.3	0.2	1.9	0.8	
Delay (s)		30.7		31.7	33.0	16.6	12.4	27.9	6.9	13.3	9.8	
Level of Service		C		C	C	B	B	C	A	B	A	
Approach Delay (s)		30.7		27.8				22.2			10.2	
Approach LOS		C		C				C			B	

Intersection Summary

HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

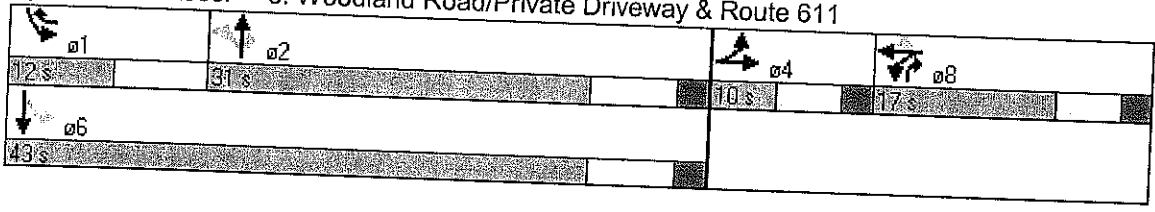
3: Woodland Road/Private Driveway & Route 611

Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↗	↖	↗	↖	↕	↗	↖	↕
Volume (vph)	3	378	9	158	6	1249	462	146	1054
Lane Group Flow (vph)	21	213	222	178	6	1262	467	178	1296
Turn Type		Split		pm+ov	Perm		pm+ov	pm+pt	
Protected Phases	4	8	8	1		2	8	1	6
Permitted Phases				8	2		2	6	
Detector Phases	4	8	8	1	2	2	8	1	6
Minimum Initial (s)	4.0	7.0	7.0	4.0	10.0	10.0	7.0	4.0	10.0
Minimum Split (s)	10.0	13.0	13.0	9.5	17.5	17.5	13.0	9.5	17.5
Total Split (s)	10.0	17.0	17.0	12.0	31.0	31.0	17.0	12.0	43.0
Total Split (%)	14.3%	24.3%	24.3%	17.1%	44.3%	44.3%	24.3%	17.1%	61.4%
Yellow Time (s)	4.0	4.0	4.0	5.5	5.5	5.5	4.0	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Lead/Lag				Lead	Lag	Lag		Lead	
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	
Recall Mode	None	None	None	None	Min	Min	None	None	Min
v/c Ratio	0.12	0.65	0.68	0.24	0.04	0.86	0.37	0.52	0.58
Control Delay	25.5	36.1	37.3	5.3	14.2	25.5	1.3	13.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	36.1	37.3	5.3	14.2	25.5	1.3	13.7	9.4
Queue Length 50th (ft)	5	73	76	6	1	195	0	21	110
Queue Length 95th (ft)	14	#184	#194	44	9	#405	14	66	210
Internal Link Dist (ft)	105		2012			2203			2327
Turn Bay Length (ft)		250		250	73		350	183	
Base Capacity (vph)	170	341	342	714	145	1501	1265	345	2269
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	0.12	0.62	0.65	0.25	0.04	0.84	0.37	0.52	0.57

Intersection Summary

Cycle Length: 70  
 Actuated Cycle Length: 62.5  
 Natural Cycle: 70  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Woodland Road/Private Driveway & Route 611



2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

4: Meadows Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%				-1%
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Fr <sub>t</sub>		0.865			0.879							
Fl <sub>t</sub> Protected					0.997		0.950			0.950		
Satd. Flow (prot)	0	1648	0	0	1567	0	1702	3522	0	1670	3455	0
Fl <sub>t</sub> Permitted					0.997		0.950			0.950		
Satd. Flow (perm)	0	1648	0	0	1567	0	1702	3522	0	1670	3455	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45		45		
Link Distance (ft)		158			1027			2407		3261		
Travel Time (s)		3.1			20.0			36.5		49.4		
Volume (vph)	0	0	4	1	1	17	4	1406	1	12	1204	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	5	2	2	34	4	1449	1	14	1451	1
Lane Group Flow (vph)	0	5	0	0	38	0	4	1450	0	14	1452	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 48.9% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↕		↖	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		2%			8%			1%				
Volume (veh/h)	0	0	4	1	1	17	4	1406	1	12	1204	1
Peak Hour Factor	0.75	0.75	0.75	0.50	0.50	0.50	0.97	0.97	0.97	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	5	2	2	34	4	1449	1	14	1451	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2248	2939	726	2218	2939	725	1452			1451		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2248	2939	726	2218	2939	725	1452			1451		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	91	86	91	99			97		
cM capacity (veh/h)	18	14	367	23	14	367	462			448		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	5	38	4	966	484	14	967	485
Volume Left	0	2	4	0	0	14	0	0
Volume Right	5	34	0	0	1	0	0	1
cSH	367	117	462	1700	1700	448	1700	1700
Volume to Capacity	0.01	0.32	0.01	0.57	0.28	0.03	0.57	0.29
Queue Length 95th (ft)	1	32	1	0	0	2	0	0
Control Delay (s)	15.0	49.9	12.9	0.0	0.0	13.3	0.0	0.0
Lane LOS	B	E	B			B		
Approach Delay (s)	15.0	49.9	0.0			0.1		
Approach LOS	B	E						

Intersection Summary		
Average Delay		0.7
Intersection Capacity Utilization	48.9%	ICU Level of Service
Analysis Period (min)	15	A

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frnt		0.938			0.934			0.998			0.997	
Fit Protected		0.978			0.983		0.950			0.950		
Satd. Flow (prot)	0	1709	0	0	1524	0	1694	3497	0	1753	3617	0
Fit Permitted		0.978			0.983		0.950			0.950		
Satd. Flow (perm)	0	1709	0	0	1524	0	1694	3497	0	1753	3617	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45		45		
Link Distance (ft)		294			1492			3261		2754		
Travel Time (s)		6.7			33.9			49.4		41.7		
Volume (vph)	20	4	20	13	7	18	31	1372	20	22	1184	31
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	22	4	22	17	8	24	34	1414	21	29	1538	34
Lane Group Flow (vph)	0	48	0	0	49	0	34	1435	0	29	1572	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.0%

ICU Level of Service A

Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↖	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%			Free	
Volume (veh/h)	20	4	20	13	7	18	31	1372	20	22	1184	31
Peak Hour Factor	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.97	0.97	0.77	0.77	0.90
Hourly flow rate (vph)	22	4	22	17	8	24	34	1414	21	29	1538	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2416	3116	786	2344	3123	718	1572			1435		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2416	3116	786	2344	3123	718	1572			1435		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	54	93	0	17	94	92			94		
cM capacity (veh/h)	4	10	335	10	9	371	415			469		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	49	34	943	492	29	1025	547
Volume Left	22	17	34	0	0	29	0	0
Volume Right	22	24	0	0	21	0	0	34
cSH	9	19	415	1700	1700	469	1700	1700
Volume to Capacity	5.55	2.59	0.08	0.55	0.29	0.06	0.60	0.32
Queue Length 95th (ft)	Err	164	7	0	0	5	0	0
Control Delay (s)	Err	1142.2	14.4	0.0	0.0	13.2	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	Err	1142.2	0.3			0.2		
Approach LOS	F	F						

Intersection Summary

Average Delay	172.3
Intersection Capacity Utilization	49.0%
Analysis Period (min)	15
ICU Level of Service	A

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

6: Woodland Road & School Access

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↘	↑	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.960	
Fit Protected			0.950		0.966	
Satd. Flow (prot)	1616	1465	1666	1870	1670	0
Fit Permitted			0.950		0.966	
Satd. Flow (perm)	1616	1465	1666	1870	1670	0
Headway Factor	1.01	0.92	0.98	0.90	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	574	37	25	481	64	27
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	17%	10%	10%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	765	49	34	650	114	48
Lane Group Flow (vph)	765	49	34	650	162	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 42.1% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↓	↓
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	574	37	25	481	64	27
Peak Hour Factor	0.75	0.75	0.74	0.74	0.56	0.56
Hourly flow rate (vph)	765	49	34	650	114	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh				TWLT		
Upstream signal (ft)				1		
pX, platoon unblocked						
vC, conflicting volume			815	1483	765	
vC1, stage 1 conf vol				765		
vC2, stage 2 conf vol				718		
vCu, unblocked vol			815	1483	765	
tC, single (s)			4.2	6.4	6.2	
tC, 2 stage (s)				5.4		
tF (s)			2.3	3.5	3.3	
p0 queue free %			96	58	88	
cM capacity (veh/h)			779	270	403	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	765	49	34	650	162
Volume Left	0	0	34	0	114
Volume Right	0	49	0	0	48
cSH	1700	1700	779	1700	300
Volume to Capacity	0.45	0.03	0.04	0.38	0.54
Queue Length 95th (ft)	0	0	3	0	76
Control Delay (s)	0.0	0.0	9.8	0.0	30.4
Lane LOS			A		D
Approach Delay (s)	0.0		0.5		30.4
Approach LOS					D

Intersection Summary			
Average Delay		3.2	
Intersection Capacity Utilization		42.1%	ICU Level of Service
Analysis Period (min)		15	A

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frnt		0.850			0.908	
Flt Protected			0.950		0.984	
Satd. Flow (prot)	1853	1680	1727	1939	1561	0
Flt Permitted			0.950		0.984	
Satd. Flow (perm)	1853	1680	1727	1939	1561	0
Headway Factor	1.01	0.92	1.01	0.92	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	567	34	57	468	38	80
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.72	0.72	0.80	0.80	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	788	47	71	585	42	89
Lane Group Flow (vph)	788	47	71	585	131	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 50.2%      ICU Level of Service A  
 Analysis Period (min) 15



2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	567	34	57	468	38	80
Peak Hour Factor	0.72	0.72	0.80	0.80	0.90	0.90
Hourly flow rate (vph)	788	47	71	585	42	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh					TWLTL	
Upstream signal (ft)					1	
pX, platoon unblocked						
vC, conflicting volume			835		1515	788
vC1, stage 1 conf vol					788	
vC2, stage 2 conf vol					728	
vCu, unblocked vol			835		1515	788
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		84	77
cM capacity (veh/h)			790		256	391

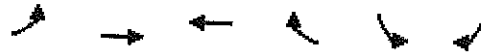
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	788	47	71	585	131
Volume Left	0	0	71	0	42
Volume Right	0	47	0	0	89
cSH	1700	1700	790	1700	335
Volume to Capacity	0.46	0.03	0.09	0.34	0.39
Queue Length 95th (ft)	0	0	7	0	45
Control Delay (s)	0.0	0.0	10.0	0.0	22.5
Lane LOS			B		C
Approach Delay (s)	0.0		1.1		22.5
Approach LOS					C

Intersection Summary

Average Delay	2.3				
Intersection Capacity Utilization	50.2%			ICU Level of Service	A
Analysis Period (min)	15				

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.966	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1805	2027	1927	0	1668	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1805	2027	1927	0	1668	0
Headway Factor	0.97	0.89	0.93	0.93	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	400		1342	
Travel Time (s)		16.0	6.8		26.1	
Volume (vph)	3	644	522	5	9	3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	4	767	678	6	18	6
Lane Group Flow (vph)	4	767	684	0	24	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 43.9%      ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	3	644	522	5	9	3
Peak Hour Factor	0.84	0.84	0.77	0.77	0.50	0.50
Hourly flow rate (vph)	4	767	678	6	18	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL		
Median storage (veh)				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	684			1455	681	
vC1, stage 1 conf vol				681		
vC2, stage 2 conf vol				774		
vCu, unblocked vol	684			1455	681	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)				5.4		
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			94	99	
cM capacity (veh/h)	909			283	451	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	4	767	684	24		
Volume Left	4	0	0	18		
Volume Right	0	0	6	6		
cSH	909	1700	1700	312		
Volume to Capacity	0.00	0.45	0.40	0.08		
Queue Length 95th (ft)	0	0	0	6		
Control Delay (s)	9.0	0.0	0.0	17.5		
Lane LOS	A			C		
Approach Delay (s)	0.0		0.0	17.5		
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization	43.9%			ICU Level of Service	A	
Analysis Period (min)	15					

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↕	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.993				0.920	
Flt Protected	0.955			0.997		
Satd. Flow (prot)	1673	0	0	1840	1608	0
Flt Permitted	0.955			0.997		
Satd. Flow (perm)	1673	0	0	1840	1608	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	192	11	12	190	159	229
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	234	13	13	198	196	283
Lane Group Flow (vph)	247	0	0	210	479	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 40.4% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Sign Control	Stop			Free	Free	
Grade	-3%			-5%	4%	
Volume (veh/h)	192	11	12	190	159	229
Peak Hour Factor	0.82	0.82	0.96	0.96	0.81	0.81
Hourly flow rate (vph)	234	13	12	198	196	283
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	561	338	479			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	561	338	479			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	52	98	99			
cM capacity (veh/h)	484	705	1083			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	248	210	479			
Volume Left	234	12	0			
Volume Right	13	0	283			
cSH	492	1083	1700			
Volume to Capacity	0.50	0.01	0.28			
Queue Length 95th (ft)	70	1	0			
Control Delay (s)	19.5	0.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	19.5	0.6	0.0			
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay		5.3				
Intersection Capacity Utilization		40.4%		ICU Level of Service		A
Analysis Period (min)		15				

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	8	8	8
Grade (%)		-4%			4%			1%				
Total Lost time (s)		4.0		4.0	4.0			4.0			-1%	
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	
Frt		0.98		1.00	1.00			0.89			0.96	
Flt Protected		1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)		1802		1619	1764			1550			1551	
Flt Permitted		1.00		0.23	1.00			0.93			0.85	
Satd. Flow (perm)		1797		397	1764			1455			1335	
Volume (vph)	4	578	92	287	523	1	69	3	310	3	9	4
Peak-hour factor, PHF	0.86	0.86	0.86	0.98	0.98	0.98	0.87	0.87	0.87	0.60	0.60	0.60
Adj. Flow (vph)	5	672	107	293	534	1	79	3	356	5	15	7
RTOR Reduction (vph)	0	9	0	0	0	0	0	262	0	0	6	0
Lane Group Flow (vph)	0	775	0	293	535	0	0	176	0	0	21	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6							4	
Actuated Green, G (s)		25.5		37.5	37.5			9.3			9.3	
Effective Green, g (s)		27.5		39.5	39.5			10.3			10.3	
Actuated g/C Ratio		0.48		0.68	0.68			0.18			0.18	
Clearance Time (s)		6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)		6.0		3.0	6.0			3.0			3.0	
Lane Grp Cap (vph)		855		440	1206			259			238	
v/s Ratio Prot				0.09	0.30							
v/s Ratio Perm	0.43			0.36				0.12			0.02	
v/c Ratio	0.91			0.67	0.44			0.68			0.09	
Uniform Delay, d1	14.0			7.4	4.2			22.2			19.8	
Progression Factor	1.00			1.00	1.00			1.00			1.00	
Incremental Delay, d2	14.3			3.8	0.7			6.9			0.2	
Delay (s)	28.2			11.2	4.9			29.1			20.0	
Level of Service	C			B	A			C			B	
Approach Delay (s)	28.2			7.1				29.1			20.0	
Approach LOS	C			A				C			B	

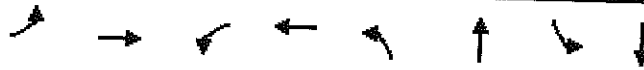
Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕	↗	↖		↕		↕
Volume (vph)	4	578	287	523	69	3	3	9
Lane Group Flow (vph)	0	784	293	535	0	438	0	27
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	33.0	33.0	12.0	45.0	15.0	15.0	15.0	15.0
Total Split (%)	55.0%	55.0%	20.0%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.91	0.66	0.44		0.84		0.11
Control Delay		31.3	12.7	5.6		24.6		18.2
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		31.3	12.7	5.6		24.6		18.2
Queue Length 50th (ft)		235	32	69		39		6
Queue Length 95th (ft)		#421	#67	117		#166		15
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)			100					
Base Capacity (vph)		889	445	1221		533		258
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		0.88	0.66	0.44		0.82		0.10

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 57.8

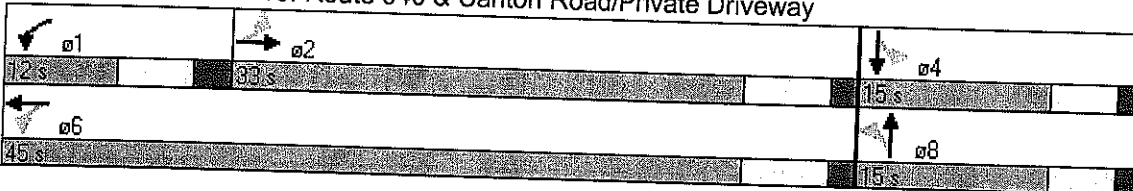
Natural Cycle: 65

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

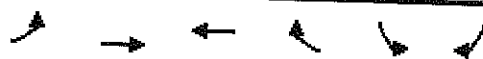
Queue shown is maximum after two cycles.

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway



2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

11: Route 940 & Route 390



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Fr <sub>t</sub>		1.00	0.99		0.87	
Fl <sub>t</sub> Protected		0.97	1.00		1.00	
Satd. Flow (prot)		1765	1771		1724	
Fl <sub>t</sub> Permitted		0.47	1.00		1.00	
Satd. Flow (perm)		854	1771		1724	
Volume (vph)	539	352	342	18	12	469
Peak-hour factor, PHF	0.89	0.89	0.93	0.93	0.80	0.80
Adj. Flow (vph)	606	396	368	19	15	586
RTOR Reduction (vph)	0	0	1	0	526	0
Lane Group Flow (vph)	0	1002	386	0	75	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		94.1	59.1		9.9	
Effective Green, g (s)		96.1	61.1		11.9	
Actuated g/C Ratio		0.83	0.53		0.10	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		951	933		177	
v/s Ratio Prot		c0.28	0.22		c0.04	
v/s Ratio Perm		c0.59				
v/c Ratio		1.05	0.41		0.42	
Uniform Delay, d <sub>1</sub>		10.0	16.6		48.8	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d <sub>2</sub>		44.4	0.8		1.6	
Delay (s)		54.3	17.4		50.5	
Level of Service		D	B		D	
Approach Delay (s)		54.3	17.4		50.5	
Approach LOS		D	B		D	

Intersection Summary

HCM Average Control Delay	46.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

11: Route 940 & Route 390



Lane Group	EBL	EBT	W/BT	SBL
Lane Configurations		↑	↑	↑
Volume (vph)	539	352	342	12
Lane Group Flow (vph)	0	1002	387	601
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2.5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	35.0	100.0	65.0	20.0
Total Split (%)	29.2%	83.3%	54.2%	16.7%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio		1.06	0.41	0.85
Control Delay		60.1	18.7	17.6
Queue Delay		0.0	0.0	0.0
Total Delay		60.1	18.7	17.6
Queue Length 50th (ft)		~422	159	10
Queue Length 95th (ft)		#830	261	51
Internal Link Dist (ft)		491	1298	1509
Turn Bay Length (ft)				
Base Capacity (vph)		941	933	738
Starvation Cap Reductn		0	0	0
Spillback Cap Reductn		0	0	0
Storage Cap Reductn		0	0	0
Reduced v/c Ratio		1.06	0.41	0.81

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 116

Natural Cycle: 150

Control Type: Semi Act-Uncoord

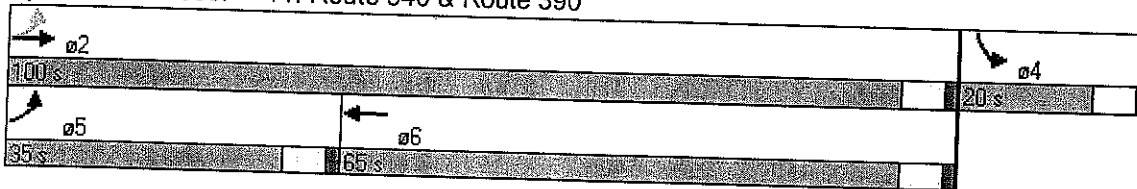
- Volume exceeds capacity, queue is theoretically infinite.

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: 11: Route 940 & Route 390



2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%			-1%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.962			0.979			0.974	
Flt Protected		0.994			0.999			0.989			0.963	
Satd. Flow (prot)	0	1804	0	0	1713	0	0	1587	0	0	1697	0
Flt Permitted		0.994			0.999			0.989			0.963	
Satd. Flow (perm)	0	1804	0	0	1713	0	0	1587	0	0	1697	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	46	313	5	6	329	132	5	13	3	103	5	26
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	51	348	6	7	392	157	6	16	4	118	6	30
Lane Group Flow (vph)	0	405	0	0	556	0	0	26	0	0	154	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 66.7% ICU Level of Service C  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		-2%			2%			-3%			Stop	
Volume (veh/h)	46	313	5	6	329	132	5	13	3	103	5	26
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.80	0.80	0.80	0.87	0.87	0.87
Hourly flow rate (vph)	51	348	6	7	392	157	6	16	4	118	6	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)							None				None	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	549			353			970	1016	351	949	940	470
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	549			353			970	1016	351	949	940	470
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			97	93	99	45	98	95
cM capacity (veh/h)	1021			1205			208	225	693	216	249	593

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	404	556	26	154
Volume Left	51	7	6	118
Volume Right	6	157	4	30
cSH	1021	1205	244	248
Volume to Capacity	0.05	0.01	0.11	0.62
Queue Length 95th (ft)	4	0	9	93
Control Delay (s)	1.6	0.2	21.5	40.6
Lane LOS	A	A	C	E
Approach Delay (s)	1.6	0.2	21.5	40.6
Approach LOS			C	E

Intersection Summary			
Average Delay		6.6	
Intersection Capacity Utilization		66.7%	ICU Level of Service
Analysis Period (min)		15	C

2017 Projected Conditions - With Site-Related Recommendations  
 Friday P.M. Peak Hour

13: Woodland Road & Western Site Driveway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1891	1714	1752	1967	1770	1689
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	863			1227	233	
Travel Time (s)	14.7			20.9	7.9	
Volume (vph)	273	380	24	343	184	30
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	333	422	27	457	204	33
Lane Group Flow (vph)	333	422	27	457	204	33
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 36.8% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

13: Woodland Road & Western Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	273	380	24	343	184	30
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Hourly flow rate (vph)	333	422	27	457	204	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			333		844	333
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			333		844	333
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		37	95
cM capacity (veh/h)			1226		327	709

Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	333	422	27	457	204	33
Volume Left	0	0	27	0	204	0
Volume Right	0	422	0	0	0	33
cSH	1700	1700	1226	1700	327	709
Volume to Capacity	0.20	0.25	0.02	0.27	0.63	0.05
Queue Length 95th (ft)	0	0	2	0	100	4
Control Delay (s)	0.0	0.0	8.0	0.0	32.8	10.3
Lane LOS			A		D	B
Approach Delay (s)	0.0		0.4		29.7	
Approach LOS					D	

Intersection Summary	
Average Delay	4.9
Intersection Capacity Utilization	36.8%
Analysis Period (min)	15
ICU Level of Service	A

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1891	1714	1752	1967	1770	1689
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	1227			2146	250	
Travel Time (s)	20.9			36.6	8.5	
Volume (vph)	173	130	58	183	184	30
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	211	144	64	244	204	33
Lane Group Flow (vph)	211	144	64	244	204	33
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 32.6%  
 Analysis Period (min) 15

ICU Level of Service A

2017 Projected Conditions - With Site-Related Recommendations

Friday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	173	130	58	183	184	30
Peak Hour Factor	0.82	0.90	0.90	0.75	0.90	0.90
Hourly flow rate (vph)	211	144	64	244	204	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			211		584	211
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			211		584	211
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		55	96
cM capacity (veh/h)			1360		452	829

Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	211	144	64	244	204	33
Volume Left	0	0	64	0	204	0
Volume Right	0	144	0	0	0	33
cSH	1700	1700	1360	1700	452	829
Volume to Capacity	0.12	0.08	0.05	0.14	0.45	0.04
Queue Length 95th (ft)	0	0	4	0	58	3
Control Delay (s)	0.0	0.0	7.8	0.0	19.4	9.5
Lane LOS			A		C	A
Approach Delay (s)	0.0		1.6		18.0	
Approach LOS					C	

Intersection Summary						
Average Delay			5.3			
Intersection Capacity Utilization			32.6%		ICU Level of Service	A
Analysis Period (min)			15			

2017 Projected Conditions  
Saturday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	11	11	11	11
Grade (%)	-4%			1%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	2046	1830		1792	1810	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	2046	1830		1792	1810	
Volume (vph)	879	19	0	1308	1100	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	916	20	0	1377	1183	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	916	20	0	1377	1183	0
Turn Type	Perm					
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.0	16.0		41.0	41.0	
Effective Green, g (s)	18.0	18.0		44.0	44.0	
Actuated g/C Ratio	0.26	0.26		0.63	0.63	
Clearance Time (s)	6.0	6.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		6.0	6.0	
Lane Grp Cap (vph)	526	471		1126	1138	
v/s Ratio Prot	c0.45			c0.77	0.65	
v/s Ratio Perm	0.01					
v/c Ratio	1.74	0.04		1.22	1.04	
Uniform Delay, d1	26.0	19.5		13.0	13.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	341.5	0.0		108.4	37.5	
Delay (s)	367.5	19.6		121.4	50.5	
Level of Service	F	B		F	D	
Approach Delay (s)	360.1			121.4	50.5	
Approach LOS	F			F	D	
<b>Intersection Summary</b>						
HCM Average Control Delay	161.3		HCM Level of Service		F	
HCM Volume to Capacity ratio	1.37					
Actuated Cycle Length (s)	70.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	185.4%		ICU Level of Service		H	
Analysis Period (min)	15					
c Critical Lane Group						



2017 Projected Conditions  
Saturday P.M. Peak Hour

62: I-80 WB Off-Ramp & Route 611



Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖	↗	↑	↑
Volume (vph)	879	19	1308	1100
Lane Group Flow (vph)	916	20	1377	1183
Turn Type	Perm			
Protected Phases	4		2	6
Permitted Phases		4		
Detector Phases	4	4	2	6
Minimum Initial (s)	4.0	4.0	12.0	12.0
Minimum Split (s)	10.0	10.0	19.0	19.0
Total Split (s)	22.0	22.0	48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%	68.6%
Yellow Time (s)	4.0	4.0	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5
Lead/Lag	Lead-Lag Optimize?			
Recall Mode	None	None	Min	Min
v/c Ratio	1.74	0.04	1.22	1.04
Control Delay	364.7	19.9	126.4	53.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	364.7	19.9	126.4	53.7
Queue Length 50th (ft)	~599	6	~747	~563
Queue Length 95th (ft)	#810	22	#982	#790
Internal Link Dist (ft)	648		2214	366
Turn Bay Length (ft)		50		
Base Capacity (vph)	526	471	1126	1138
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	1.74	0.04	1.22	1.04

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Natural Cycle: 150

Control Type: Semi Act-Uncoord

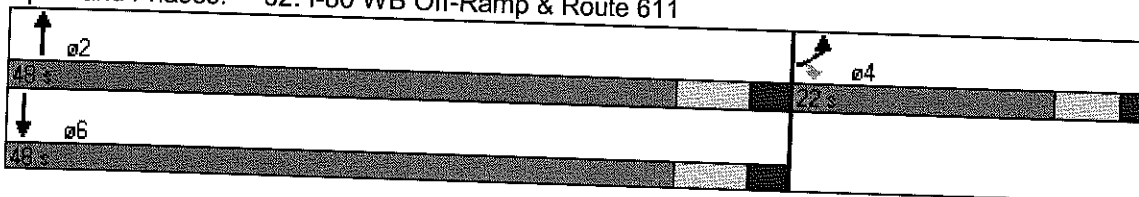
~ Volume exceeds capacity, queue is theoretically infinite.

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: 62: I-80 WB Off-Ramp & Route 611



2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↙			↑↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	11	11
Grade (%)	-4%		1%		-1%	
Total Lost time (s)	4.0		4.0		4.0	
Lane Util. Factor	0.97		0.95		1.00	
Frt	1.00		1.00		1.00	
Flt Protected	0.95		1.00		1.00	
Satd. Flow (prot)	3503		3404		1810	
Flt Permitted	0.95		1.00		1.00	
Satd. Flow (perm)	3503		3404		1810	
Volume (vph)	879	19	0	1308	1100	0
Peak-hour factor, PHF	0.96	0.96	0.95	0.95	0.93	0.93
Adj. Flow (vph)	916	20	0	1377	1183	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	936	0	0	1377	1183	0
Turn Type						
Protected Phases	4		2		6	
Permitted Phases						
Actuated Green, G (s)	20.0		52.0		52.0	
Effective Green, g (s)	22.0		55.0		55.0	
Actuated g/C Ratio	0.26		0.65		0.65	
Clearance Time (s)	6.0		7.0		7.0	
Vehicle Extension (s)	3.0		6.0		6.0	
Lane Grp Cap (vph)	907		2203		1171	
v/s Ratio Prot	c0.27		0.40		c0.65	
v/s Ratio Perm						
v/c Ratio	1.03		0.63		1.01	
Uniform Delay, d1	31.5		8.9		15.0	
Progression Factor	1.00		1.00		1.00	
Incremental Delay, d2	38.4		1.0		28.8	
Delay (s)	69.9		9.8		43.8	
Level of Service	E		A		D	
Approach Delay (s)	69.9		9.8		43.8	
Approach LOS	E		A		D	

Intersection Summary

HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	129.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

15: I-80 WB Off-Ramp & Route 611

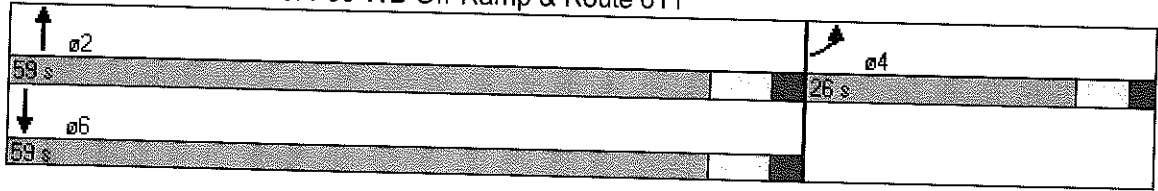


Lane Group	EBL	NBT	SBT
Lane Configurations	TTT	TT	T
Volume (vph)	879	1308	1100
Lane Group Flow (vph)	936	1377	1183
Turn Type			
Protected Phases	4	2	6
Permitted Phases			
Detector Phases	4	2	6
Minimum Initial (s)	4.0	12.0	12.0
Minimum Split (s)	10.0	19.0	19.0
Total Split (s)	26.0	59.0	59.0
Total Split (%)	30.6%	69.4%	69.4%
Yellow Time (s)	4.0	4.5	4.5
All-Red Time (s)	2.0	2.5	2.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
v/c Ratio	1.03	0.63	1.01
Control Delay	71.4	10.5	45.9
Queue Delay	0.0	0.0	0.0
Total Delay	71.4	10.5	45.9
Queue Length 50th (ft)	~280	203	~587
Queue Length 95th (ft)	#397	264	#912
Internal Link Dist (ft)	648	2214	366
Turn Bay Length (ft)			
Base Capacity (vph)	906	2203	1171
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.03	0.63	1.01

Intersection Summary

Cycle Length: 85  
 Actuated Cycle Length: 85  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 ~ 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: I-80 WB Off-Ramp & Route 611



2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕		↙	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	11	11	11	12
Grade (%)	-6%		-2%			-5%
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
Fr <sub>t</sub>	1.00	0.85	0.98		1.00	1.00
Fl <sub>t</sub> Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1883	1631	3389		1753	3628
Fl <sub>t</sub> Permitted	0.95	1.00	1.00		0.06	1.00
Satd. Flow (perm)	1883	1631	3389		116	3628
Volume (vph)	172	75	1786	261	79	1477
Peak-hour factor, PHF	0.90	0.90	0.94	0.94	0.94	0.94
Adj. Flow (vph)	191	83	1900	278	84	1571
RTOR Reduction (vph)	0	68	0	0	0	0
Lane Group Flow (vph)	191	15	2178	0	84	1571
Turn Type	Perm				pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.0	9.0	55.4		65.3	65.3
Effective Green, g (s)	12.0	12.0	59.4		69.3	69.3
Actuated g/C Ratio	0.13	0.13	0.67		0.78	0.78
Clearance Time (s)	7.0	7.0	8.0		6.0	8.0
Vehicle Extension (s)	3.0	3.0	6.0		3.0	6.0
Lane Grp Cap (vph)	253	219	2254		198	2815
v/s Ratio Prot	c0.10		c0.64		0.03	c0.43
v/s Ratio Perm		0.01			0.30	
v/c Ratio	0.75	0.07	0.97		0.42	0.56
Uniform Delay, d1	37.2	33.8	14.0		19.9	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.1	0.1	12.3		1.5	0.5
Delay (s)	49.3	33.9	26.3		21.4	4.5
Level of Service	D	C	C		C	A
Approach Delay (s)	44.6		26.3			5.3
Approach LOS	D		C			A

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

1: Route 314 (Eastern Leg) & Route 611

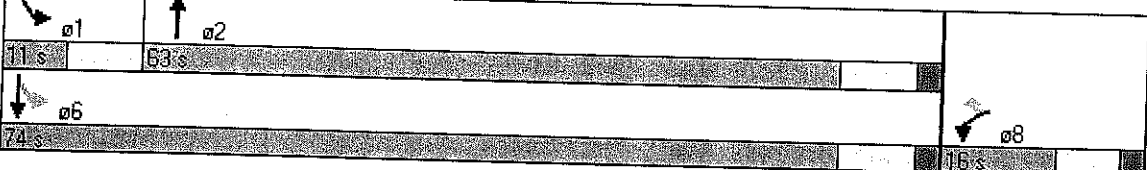


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↘	↗	↑↑	↘	↑↑
Volume (vph)	172	75	1786	79	1477
Lane Group Flow (vph)	191	83	2178	84	1571
Turn Type		Perm		pm+pt	
Protected Phases	8		2	1	6
Permitted Phases		8		6	
Detector Phases	8	8	2	1	6
Minimum Initial (s)	1.0	1.0	15.0	1.0	15.0
Minimum Split (s)	8.0	8.0	23.0	7.0	23.0
Total Split (s)	16.0	16.0	63.0	11.0	74.0
Total Split (%)	17.8%	17.8%	70.0%	12.2%	82.2%
Yellow Time (s)	5.0	5.0	6.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
v/c Ratio	0.75	0.29	0.95	0.39	0.56
Control Delay	56.1	12.7	25.6	11.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	12.7	25.6	11.5	4.9
Queue Length 50th (ft)	106	3	557	9	142
Queue Length 95th (ft)	#211	43	#809	39	180
Internal Link Dist (ft)	1091		2024		1031
Turn Bay Length (ft)		72		175	
Base Capacity (vph)	257	290	2288	215	2823
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	0.74	0.29	0.95	0.39	0.56

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 88  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 314 (Eastern Leg) & Route 611



2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕	↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	4%			7%	-6%	
Storage Length (ft)	50	0	143			0
Storage Lanes	1	1	1			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1587	1420	1708	3415	3627	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1587	1420	1708	3415	3627	0
Headway Factor	1.12	1.12	1.05	1.05	0.96	0.96
Link Speed (mph)	40			45	45	
Link Distance (ft)	3960			1111	2283	
Travel Time (s)	67.5			16.8	34.6	
Volume (vph)	54	160	187	1674	1396	48
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	56	167	195	1744	1439	49
Lane Group Flow (vph)	56	167	195	1744	1488	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 63.8% ICU Level of Service B  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

2: Route 314 (Western Leg) & Route 611



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	4%			7%	-6%	
Volume (veh/h)	54	160	187	1674	1396	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.97	0.97
Hourly flow rate (vph)	56	167	195	1744	1439	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				1111		
pX, platoon unblocked	0.43					
vC, conflicting volume	2725	744	1489			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3674	744	1489			
tC, single (s)	6.9	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	53	56			
cM capacity (veh/h)	1	352	447			

Direction Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	56	167	195	872	872	959	529
Volume Left	56	0	195	0	0	0	0
Volume Right	0	167	0	0	0	0	49
cSH	1	352	447	1700	1700	1700	1700
Volume to Capacity	68.71	0.47	0.44	0.51	0.51	0.56	0.31
Queue Length 95th (ft)	Err	61	54	0	0	0	0
Control Delay (s)	Err	24.1	19.1	0.0	0.0	0.0	0.0
Lane LOS	F	C	C				
Approach Delay (s)	2541.1		1.9			0.0	
Approach LOS	F						

Intersection Summary			
Average Delay		156.2	
Intersection Capacity Utilization	63.8%		ICU Level of Service
Analysis Period (min)		15	B

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗	↗	↖	↕	↖	↖	↕	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	12	12	14	11	12	14	11	12	12
Grade (%)		6%			5%			3%				-7%
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	1.00	0.95	1.00	1.00	0.95	
Frnt		0.91		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	0.95	1.00	0.95	1.00	0.85	1.00	1.00	
Satd. Flow (prot)		1781		1639	1645	1647	1685	3486	1664	1770	3655	
Flt Permitted		0.99		0.95	0.95	1.00	0.26	1.00	1.00	0.13	1.00	
Satd. Flow (perm)		1781		1639	1645	1647	460	3486	1664	244	3655	
Volume (vph)	6	1	16	367	5	79	17	1245	466	94	1061	17
Peak-hour factor, PHF	0.61	0.61	0.61	0.92	0.92	0.92	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	2	26	399	5	86	17	1270	476	96	1083	17
RTOR Reduction (vph)	0	24	0	0	0	62	0	0	192	0	2	0
Lane Group Flow (vph)	0	14	0	200	204	24	17	1270	284	96	1098	0
Turn Type	Split			Split	pm+ov	Perm		pm+ov	pm+pt			
Protected Phases	4	4		8	8	1		2	8	1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)		2.1		10.3	10.3	15.0	23.0	23.0	33.3	33.2	33.2	
Effective Green, g (s)		4.1		12.3	12.3	18.5	26.5	26.5	38.8	36.7	36.7	
Actuated g/C Ratio		0.06		0.19	0.19	0.28	0.41	0.41	0.60	0.56	0.56	
Clearance Time (s)		6.0		6.0	6.0	5.5	7.5	7.5	6.0	5.5	7.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	5.0	5.0	3.0	3.0	5.0	
Lane Grp Cap (vph)		112		310	311	569	187	1419	992	283	2060	
v/s Ratio Prot		c0.01		0.12	c0.12	0.00		c0.36	0.05	0.03	c0.30	
v/s Ratio Perm						0.01	0.04		0.12	0.16		
v/c Ratio		0.12		0.65	0.66	0.04	0.09	0.89	0.29	0.34	0.53	
Uniform Delay, d1		28.8		24.4	24.4	16.9	11.9	18.0	6.4	11.0	8.9	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5		4.6	4.9	0.0	0.4	8.2	0.2	0.7	0.5	
Delay (s)		29.3		28.9	29.4	16.9	12.3	26.2	6.6	11.7	9.3	
Level of Service		C		C	C	B	B	C	A	B	A	
Approach Delay (s)		29.3			27.0			20.8			9.5	
Approach LOS		C			C			C			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		17.9										
HCM Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		65.1										
Intersection Capacity Utilization		66.6%							16.0			
Analysis Period (min)		15										
c Critical Lane Group												



2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

3: Woodland Road/Private Driveway & Route 611



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↕	↗	↖	↗	↖	↕	↗	↖	↕
Volume (vph)	1	367	5	79	17	1245	466	94	1061
Lane Group Flow (vph)	38	200	204	86	17	1270	476	96	1100
Turn Type		Split		pm+ov	Perm		pm+ov	pm+pt	
Protected Phases	4	8	8	1		2	8	1	6
Permitted Phases				8	2		2	6	
Detector Phases	4	8	8	1	2	2	8	1	6
Minimum Initial (s)	4.0	7.0	7.0	4.0	10.0	10.0	7.0	4.0	10.0
Minimum Split (s)	10.0	13.0	13.0	9.5	17.5	17.5	13.0	9.5	17.5
Total Split (s)	10.0	17.0	17.0	12.0	31.0	31.0	17.0	12.0	43.0
Total Split (%)	14.3%	24.3%	24.3%	17.1%	44.3%	44.3%	24.3%	17.1%	61.4%
Yellow Time (s)	4.0	4.0	4.0	5.5	5.5	5.5	4.0	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Lead/Lag				Lead	Lag	Lag		Lead	
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	
Recall Mode	None	None	None	None	Min	Min	None	None	Min
v/c Ratio	0.20	0.60	0.61	0.13	0.09	0.84	0.37	0.30	0.52
Control Delay	19.1	34.8	35.2	4.7	15.4	25.3	1.3	9.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	34.8	35.2	4.7	15.4	25.3	1.3	9.4	9.6
Queue Length 50th (ft)	5	85	87	0	5	270	0	18	143
Queue Length 95th (ft)	17	#171	#175	26	17	#410	14	37	193
Internal Link Dist (ft)	105		2012			2203			2327
Turn Bay Length (ft)		250		250	73		350	183	
Base Capacity (vph)	190	354	355	635	204	1551	1296	326	2208
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	0.20	0.56	0.57	0.14	0.08	0.82	0.37	0.29	0.50

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 61.6

Natural Cycle: 65

Control Type: Semi Act-Uncoord

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Woodland Road/Private Driveway & Route 611

 12 s	 31 s	 10 s	 17 s
 43 s			

2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	12	12	12	11	12	12	11	12	12
Grade (%)		2%			8%			1%				
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.892			0.923							
Flt Protected		0.990			0.993		0.950			0.950		
Satd. Flow (prot)	0	1683	0	0	1639	0	1702	3522	0	1719	3557	0
Flt Permitted		0.990			0.993		0.950			0.950		
Satd. Flow (perm)	0	1683	0	0	1639	0	1702	3522	0	1719	3557	0
Headway Factor	0.97	0.97	0.97	1.05	1.05	1.05	1.05	1.01	1.01	1.04	0.99	0.99
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		158			1027			2407			3261	
Travel Time (s)		3.1			20.0			36.5			49.4	
Volume (vph)	1	0	4	4	8	16	8	1317	1	7	1164	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	0	8	10	21	41	9	1432	1	8	1308	1
Lane Group Flow (vph)	0	10	0	0	72	0	9	1433	0	8	1309	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 46.4% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

4: Meadowside Road/Trinity Hill Road & Route 611



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↗		↗	↗	
Sign Control		Stop			Stop		Free	Free		Free	Free	
Grade		2%			8%		1%					
Volume (veh/h)	1	0	4	4	8	16	8	1317	1	7	1164	1
Peak Hour Factor	0.50	0.50	0.50	0.39	0.39	0.39	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	2	0	8	10	21	41	9	1432	1	8	1308	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2109	2774	654	2127	2774	716	1309			1433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2109	2774	654	2127	2774	716	1309			1433		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	98	62	0	89	98			98		
cM capacity (veh/h)	0	18	409	27	18	372	525			470		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	10	72	9	954	478	8	872	437
Volume Left	2	10	9	0	0	8	0	0
Volume Right	8	41	0	0	1	0	0	1
cSH	0	44	525	1700	1700	470	1700	1700
Volume to Capacity	Err	1.64	0.02	0.56	0.28	0.02	0.51	0.26
Queue Length 95th (ft)	Err	180	1	0	0	1	0	0
Control Delay (s)	Err	514.3	12.0	0.0	0.0	12.8	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	Err	514.3	0.1			0.1		
Approach LOS	F	F						

Intersection Summary

Average Delay		Err	
Intersection Capacity Utilization	46.4%		ICU Level of Service
Analysis Period (min)	15		A

2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	12	12	11	12	12
Grade (%)		0%			9%			2%			-5%	
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Turning Speed (mph)	15		9	15		9	15		9	15		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
Ped Bike Factor												
Frt		0.940			0.958			0.996			0.996	
Flt Protected		0.978			0.971		0.950			0.950		0.950
Satd. Flow (prot)	0	1712	0	0	1544	0	1694	3490	0	1753	3613	0
Flt Permitted		0.978			0.971		0.950			0.950		0.950
Satd. Flow (perm)	0	1712	0	0	1544	0	1694	3490	0	1753	3613	0
Headway Factor	1.00	1.00	1.00	1.16	1.16	1.16	1.06	1.01	1.01	1.01	0.97	0.97
Link Speed (mph)		30			30			45		45		45
Link Distance (ft)		294			1492			3261		2754		41.7
Travel Time (s)		6.7			33.9			49.4		41.7		26
Volume (vph)	28	6	27	34	6	17	25	1273	36	16	1111	26
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	7	30	47	7	24	28	1354	38	17	1169	29
Lane Group Flow (vph)	0	68	0	0	78	0	28	1392	0	17	1198	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 47.6% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

5: Grange Road/Green Springs Driveway & Route 611



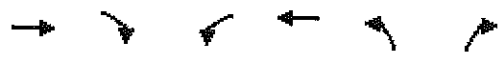
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↖	↕		↖	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			9%			2%			-5%	
Volume (veh/h)	28	6	27	34	6	17	25	1273	36	16	1111	26
Peak Hour Factor	0.90	0.90	0.90	0.72	0.90	0.72	0.90	0.94	0.94	0.95	0.95	0.90
Hourly flow rate (vph)	31	7	30	47	7	24	28	1354	38	17	1169	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1977	2666	599	2081	2661	696	1198			1393		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1977	2666	599	2081	2661	696	1198			1393		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	67	93	0	67	94	95			97		
cM capacity (veh/h)	24	20	445	20	20	383	578			487		

Direction Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	68	78	28	903	490	17	780	419
Volume Left	31	47	28	0	0	17	0	0
Volume Right	30	24	0	0	38	0	0	29
cSH	40	28	578	1700	1700	487	1700	1700
Volume to Capacity	1.68	2.77	0.05	0.53	0.29	0.03	0.46	0.25
Queue Length 95th (ft)	176	233	4	0	0	3	0	0
Control Delay (s)	549.3	1095.2	11.5	0.0	0.0	12.7	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	549.3	1095.2	0.2			0.2		
Approach LOS	F	F						

Intersection Summary		
Average Delay		44.1
Intersection Capacity Utilization	47.6%	ICU Level of Service
Analysis Period (min)		15
		A

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

6: Woodland Road & School Access



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	11	11
Grade (%)	1%			-3%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1853	1680	1796	2017	1711	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1853	1680	1796	2017	1711	0
Headway Factor	1.01	0.92	0.98	0.90	1.04	1.04
Link Speed (mph)	40			40	25	
Link Distance (ft)	2092			650	499	
Travel Time (s)	35.7			11.1	13.6	
Volume (vph)	554	6	2	446	5	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	602	7	2	496	8	0
Lane Group Flow (vph)	602	7	2	496	8	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 39.2% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

6: Woodland Road & School Access



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Sign Control	Free			Free	Stop	
Grade	1%			-3%	0%	
Volume (veh/h)	554	6	2	446	5	0
Peak Hour Factor	0.92	0.92	0.90	0.90	0.63	0.63
Hourly flow rate (vph)	602	7	2	496	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLT	
Median storage (veh)					1	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			609		1102	602
vC1, stage 1 conf vol					602	
vC2, stage 2 conf vol					500	
vCu, unblocked vol			609		1102	602
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			970		369	499

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	602	7	2	496	8
Volume Left	0	0	2	0	8
Volume Right	0	7	0	0	0
cSH	1700	1700	970	1700	369
Volume to Capacity	0.35	0.00	0.00	0.29	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	8.7	0.0	15.0
Lane LOS			A		B
Approach Delay (s)	0.0		0.0		15.0
Approach LOS					B

Intersection Summary	
Average Delay	0.1
Intersection Capacity Utilization	39.2%
Analysis Period (min)	15
ICU Level of Service	A

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	10	10
Grade (%)	1%			1%	-1%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	0
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.870	
Flt Protected			0.950		0.998	
Satd. Flow (prot)	1853	1680	1761	1977	1517	0
Flt Permitted			0.950		0.998	
Satd. Flow (perm)	1853	1680	1761	1977	1517	0
Headway Factor	1.01	0.92	1.01	0.92	1.09	1.09
Link Speed (mph)	40			40	35	
Link Distance (ft)	650			936	704	
Travel Time (s)	11.1			16.0	13.7	
Volume (vph)	551	3	60	445	3	76
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	680	4	71	524	6	152
Lane Group Flow (vph)	680	4	71	524	158	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 47.2% ICU Level of Service A  
 Analysis Period (min) 15



2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

7: Woodland Road & Bowman Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Sign Control	Free			Free	Stop	
Grade	1%			1%	-1%	
Volume (veh/h)	551	3	60	445	3	76
Peak Hour Factor	0.81	0.81	0.85	0.85	0.50	0.50
Hourly flow rate (vph)	680	4	71	524	6	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL		
Median storage veh				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			684	1345	680	
vC1, stage 1 conf vol				680		
vC2, stage 2 conf vol				665		
vCu, unblocked vol			684	1345	680	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)				5.4		
tF (s)			2.2	3.5	3.3	
p0 queue free %			92	98	66	
cM capacity (veh/h)			909	293	451	

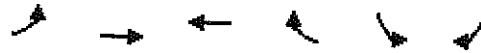
Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	680	4	71	524	158
Volume Left	0	0	71	0	6
Volume Right	0	4	0	0	152
cSH	1700	1700	909	1700	442
Volume to Capacity	0.40	0.00	0.08	0.31	0.36
Queue Length 95th (ft)	0	0	6	0	40
Control Delay (s)	0.0	0.0	9.3	0.0	17.6
Lane LOS			A		C
Approach Delay (s)	0.0		1.1		17.6
Approach LOS					C

Intersection Summary	
Average Delay	2.4
Intersection Capacity Utilization	47.2%
ICU Level of Service	A
Analysis Period (min)	15

2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↓	↓		↓	↓
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	10	10
Grade (%)		-4%	2%		-6%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996		0.968	
Frt Protected	0.950				0.963	
Satd. Flow (prot)	1805	2027	1959	0	1669	0
Frt Permitted	0.950				0.963	
Satd. Flow (perm)	1805	2027	1959	0	1669	0
Headway Factor	0.97	0.89	0.93	0.93	1.05	1.05
Link Speed (mph)		40	40		35	
Link Distance (ft)		936	400		1342	
Travel Time (s)		16.0	6.8		26.1	
Volume (vph)	3	624	502	16	10	3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	3	657	540	17	16	5
Lane Group Flow (vph)	3	657	557	0	21	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 42.8% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

8: Woodland Road & Meadowside Road



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	
Sign Control		Free	Free		Stop	
Grade		-4%	2%		-6%	
Volume (veh/h)	3	624	502	16	10	3
Peak Hour Factor	0.95	0.95	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	3	657	540	17	16	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL		
Median storage (veh)				1		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	557				1212	548
vC1, stage 1 conf vol					548	
vC2, stage 2 conf vol					663	
vCu, unblocked vol	557				1212	548
iC, single (s)	4.1				6.4	6.2
iC, 2 stage (s)					5.4	
iF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1014				340	536
<b>Direction Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>SB 1</b>		
Volume Total	3	657	557	21		
Volume Left	3	0	0	16		
Volume Right	0	0	17	5		
cSH	1014	1700	1700	371		
Volume to Capacity	0.00	0.39	0.33	0.06		
Queue Length 95th (ft)	0	0	0	4		
Control Delay (s)	8.6	0.0	0.0	15.3		
Lane LOS	A			C		
Approach Delay (s)	0.0		0.0	15.3		
Approach LOS				C		
<b>Intersection Summary</b>						
Average Delay			0.3			
Intersection Capacity Utilization		42.8%		ICU Level of Service	A	
Analysis Period (min)		15				

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↑	↓	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-3%			-5%	4%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.924	
Flt Protected	0.954			0.996		
Satd. Flow (prot)	1675	0	0	1838	1631	0
Flt Permitted	0.954			0.996		
Satd. Flow (perm)	1675	0	0	1838	1631	0
Headway Factor	1.07	1.07	1.01	1.01	1.07	1.07
Link Speed (mph)	40			45	45	
Link Distance (ft)	1794			1439	1446	
Travel Time (s)	30.6			21.8	21.9	
Volume (vph)	150	6	11	136	128	165
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	183	7	15	181	149	192
Lane Group Flow (vph)	190	0	0	196	341	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 32.2% ICU Level of Service A  
 Analysis Period (min) 15

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

9: Woodland Road & Carlton Road



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Sign Control	Stop		Free		Free	
Grade	-3%		-5%		4%	
Volume (veh/h)	150	6	11	136	128	165
Peak Hour Factor	0.82	0.82	0.75	0.75	0.86	0.86
Hourly flow rate (vph)	183	7	15	181	149	192
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	455	245	341			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	455	245	341			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	67	99	99			
cM capacity (veh/h)	556	794	1218			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	190	196	341			
Volume Left	183	15	0			
Volume Right	7	0	192			
cSH	563	1218	1700			
Volume to Capacity	0.34	0.01	0.20			
Queue Length 95th (ft)	37	1	0			
Control Delay (s)	14.6	0.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.6	0.7	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	4.0					
Intersection Capacity Utilization	32.2%					
Analysis Period (min)	15					
ICU Level of Service	A					

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

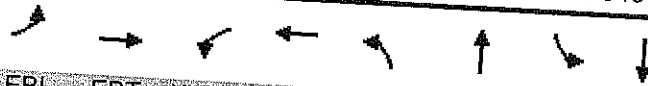
10: Route 940 & Carlton Road/Private Driveway

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	11	11	11	11	11	8	8	8
Grade (%)		-4%			4%			1%			-1%	
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		0.98		1.00	1.00			0.89			0.88	
Flt Protected		1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1808		1619	1765			1580			1418	
Flt Permitted		1.00		0.28	1.00			0.93			0.93	
Satd. Flow (perm)		1801		483	1765			1489			1330	
Volume (vph)	4	459	60	233	469	0	52	1	233	1	0	8
Peak-hour factor, PHF	0.84	0.84	0.84	0.93	0.93	0.93	0.71	0.71	0.71	0.88	0.88	0.88
Adj. Flow (vph)	5	546	71	251	504	0	73	1	328	1	0	9
RTOR Reduction (vph)	0	8	0	0	0	0	0	264	0	0	7	0
Lane Group Flow (vph)	0	614	0	251	504	0	0	138	0	0	3	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1	6		8			4		
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		20.6		31.0	31.0		8.7			8.7		
Effective Green, g (s)		22.6		33.0	33.0		9.7			9.7		
Actuated g/C Ratio		0.45		0.65	0.65		0.19			0.19		
Clearance Time (s)		6.0		6.0	6.0		5.0			5.0		
Vehicle Extension (s)		6.0		3.0	6.0		3.0			3.0		
Lane Grp Cap (vph)		803		458	1149		285			254		
v/s Ratio Prot				c0.07	0.29							
v/s Ratio Perm		c0.34		0.29			c0.09			0.00		
v/c Ratio		0.76		0.55	0.44		0.49			0.01		
Uniform Delay, d1		11.8		6.2	4.3		18.3			16.6		
Progression Factor		1.00		1.00	1.00		1.00			1.00		
Incremental Delay, d2		5.6		1.3	0.8		1.3			0.0		
Delay (s)		17.4		7.5	5.1		19.6			16.6		
Level of Service		B		A	A		B			B		
Approach Delay (s)		17.4			5.9		19.6			16.6		
Approach LOS		B			A		B			B		

Intersection Summary		
HCM Average Control Delay	13.0	HCM Level of Service
HCM Volume to Capacity ratio	0.67	B
Actuated Cycle Length (s)	50.7	Sum of lost time (s)
Intersection Capacity Utilization	86.7%	12.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		E

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

10: Route 940 & Carlton Road/Private Driveway

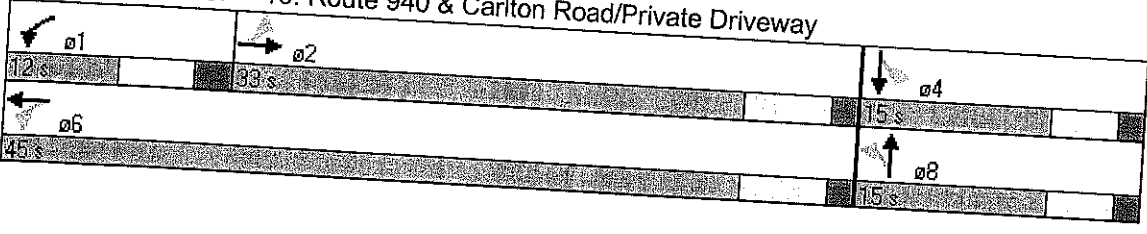


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕	↕	↕		↕		↕
Volume (vph)	4	459	233	469	52	1	1	0
Lane Group Flow (vph)	0	622	251	504	0	402	0	10
Turn Type	Perm		pm+pt		Perm		Perm	
Protected Phases		2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phases	2	2	1	6	8	8	4	4
Minimum Initial (s)	10.0	10.0	4.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	16.0	16.0	10.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	33.0	33.0	12.0	45.0	15.0	15.0	15.0	15.0
Total Split (%)	55.0%	55.0%	20.0%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.5	4.5	4.0	4.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Min	Min	None	Min	None	None	None	None
v/c Ratio		0.75	0.52	0.45		0.73		0.04
Control Delay		18.4	7.9	5.8		15.4		13.2
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		18.4	7.9	5.8		15.4		13.2
Queue Length 50th (ft)		159	26	63		22		0
Queue Length 95th (ft)		238	49	108		46		11
Internal Link Dist (ft)		1322		1070		1366		73
Turn Bay Length (ft)			100					
Base Capacity (vph)		953	484	1240		590		311
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		0.65	0.52	0.41		0.68		0.03

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 50.1  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord

Splits and Phases: 10: Route 940 & Carlton Road/Private Driveway



2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	14	14
Grade (%)		-2%	2%		-4%	
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.99		0.88	
Flt Protected		0.97	1.00		0.99	
Satd. Flow (prot)		1755	1769		1773	
Flt Permitted		0.46	1.00		0.99	
Satd. Flow (perm)		820	1769		1773	
Volume (vph)	361	332	318	19	45	384
Peak-hour factor, PHF	0.79	0.79	0.84	0.84	0.81	0.81
Adj. Flow (vph)	457	420	379	23	56	474
RTOR Reduction (vph)	0	0	3	0	381	0
Lane Group Flow (vph)	0	877	399	0	149	0
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	pm+pt					
Protected Phases	5	2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		61.0	36.0		7.0	
Effective Green, g (s)		63.0	38.0		9.0	
Actuated g/C Ratio		0.79	0.48		0.11	
Clearance Time (s)		6.0	6.0		6.0	
Vehicle Extension (s)		6.0	6.0		3.0	
Lane Grp Cap (vph)		891	840		199	
v/s Ratio Prot		c0.26	0.23		c0.08	
v/s Ratio Perm		c0.52				
v/c Ratio		0.98	0.48		0.75	
Uniform Delay, d1		8.0	14.2		34.4	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		26.4	1.2		14.7	
Delay (s)		34.4	15.4		49.1	
Level of Service		C	B		D	
Approach Delay (s)		34.4	15.4		49.1	
Approach LOS		C	B		D	
<b>Intersection Summary</b>						
HCM Average Control Delay		34.5		HCM Level of Service		C
HCM Volume to Capacity ratio		0.94				
Actuated Cycle Length (s)		80.0		Sum of lost time (s)		8.0
Intersection Capacity Utilization		91.6%		ICU Level of Service		F
Analysis Period (min)		15				
c Critical Lane Group						



2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

11: Route 940 & Route 390

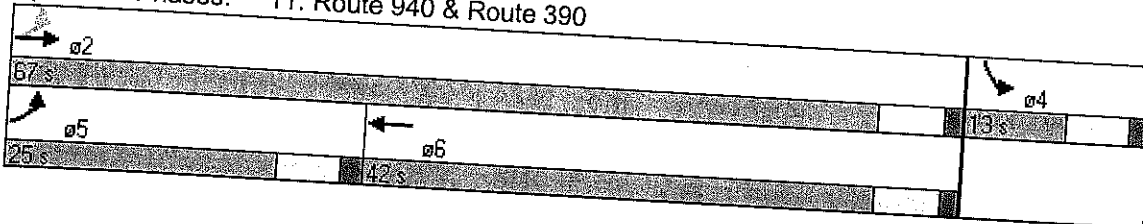


Lane Group	EBL	EBT	WBT	SBL
Lane Configurations		↕	↕	↕
Volume (vph)	361	332	318	45
Lane Group Flow (vph)	0	877	402	530
Turn Type	pm+pt			
Protected Phases	5	2	6	4
Permitted Phases	2			
Detector Phases	5	2.5	6	4
Minimum Initial (s)	4.0	10.0	10.0	7.0
Minimum Split (s)	10.0	16.0	16.0	13.0
Total Split (s)	25.0	67.0	42.0	13.0
Total Split (%)	31.3%	83.8%	52.5%	16.3%
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	Min	Min	None
v/c Ratio	0.98	0.48	0.91	
Control Delay	35.7	16.4	30.9	
Queue Delay	0.0	0.0	0.0	
Total Delay	35.7	16.4	30.9	
Queue Length 50th (ft)	168	128	48	
Queue Length 95th (ft)	#207	184	#154	
Internal Link Dist (ft)	491	1298	1509	
Turn Bay Length (ft)				
Base Capacity (vph)	891	842	580	
Starvation Cap Reductn	0	0	0	
Spillback Cap Reductn	0	0	0	
Storage Cap Reductn	0	0	0	
Reduced v/c Ratio	0.98	0.48	0.91	

Intersection Summary

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

Splits and Phases: 11: Route 940 & Route 390



2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

12: Route 940 & Route 191/Red Rock Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	8	8	8	11	11	11
Grade (%)		-2%			2%			-3%				-1%
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
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
Ped Bike Factor												
Frt		0.998			0.965			0.965			0.969	
Fit Protected		0.994			0.999			0.984			0.967	
Satd. Flow (prot)	0	1787	0	0	1719	0	0	1556	0	0	1696	0
Fit Permitted		0.994			0.999			0.984			0.967	
Satd. Flow (perm)	0	1787	0	0	1719	0	0	1556	0	0	1696	0
Headway Factor	1.03	1.03	1.03	1.06	1.06	1.06	1.18	1.18	1.18	1.04	1.04	1.04
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		1662			865			282			1220	
Travel Time (s)		25.2			13.1			5.5			18.5	
Volume (vph)	45	327	5	5	298	106	4	5	3	103	14	35
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.45	0.45	0.45	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	51	367	6	6	368	131	9	11	7	117	16	40
Lane Group Flow (vph)	0	424	0	0	505	0	0	27	0	117	16	40
Sign Control		Free			Free			Stop		Stop		Stop

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 67.7%  
 Analysis Period (min) 15  
 ICU Level of Service C



2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

13: Woodland Road & Western Site Driveway

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1891	1714	1752	1967	1770	1689
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	863			1227	233	
Travel Time (s)	14.7			20.9	7.9	
Volume (vph)	226	408	26	302	216	35
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	266	453	29	360	240	39
Lane Group Flow (vph)	266	453	29	360	240	39
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 37.2%  
 Analysis Period (min) 15  
 ICU Level of Service A

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

13: Woodland Road & Western Site Driveway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	226	408	26	302	216	35
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Hourly flow rate (vph)	266	453	29	360	240	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh				None		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			266		683	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			266		683	266
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		41	95
cM capacity (veh/h)			1298		406	773

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	266	453	29	360	240	39
Volume Left	0	0	29	0	240	0
Volume Right	0	453	0	0	0	39
cSH	1700	1700	1298	1700	406	773
Volume to Capacity	0.16	0.27	0.02	0.21	0.59	0.05
Queue Length 95th (ft)	0	0	2	0	92	4
Control Delay (s)	0.0	0.0	7.8	0.0	26.0	9.9
Lane LOS			A		D	A
Approach Delay (s)	0.0		0.6		23.7	
Approach LOS					C	

Intersection Summary	
Average Delay	4.9
Intersection Capacity Utilization	37.2%
Analysis Period (min)	15
ICU Level of Service	A

2017 Projected Conditions - With Site-Related Recommendations  
 Saturday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↖	↑	↖	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	14	12	14
Grade (%)	-3%			2%	0%	
Storage Length (ft)		250	100		0	0
Storage Lanes		1	1		1	1
Turning Speed (mph)		9	15		15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Frt Protected			0.950		0.950	
Satd. Flow (prot)	1891	1714	1752	1967	1770	1689
Frt Permitted			0.950		0.950	
Satd. Flow (perm)	1891	1714	1752	1967	1770	1689
Headway Factor	0.98	0.90	1.01	0.93	1.00	0.92
Link Speed (mph)	40			40	20	
Link Distance (ft)	1227			2146	250	
Travel Time (s)	20.9			36.6	8.5	
Volume (vph)	121	140	64	112	216	35
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	142	156	71	133	240	39
Lane Group Flow (vph)	142	156	71	133	240	39
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 31.9%  
 Analysis Period (min) 15  
 ICU Level of Service A

2017 Projected Conditions - With Site-Related Recommendations

Saturday P.M. Peak Hour

14: Woodland Road & Eastern Site Driveway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Sign Control	Free			Free	Stop	
Grade	-3%			2%	0%	
Volume (veh/h)	121	140	64	112	216	35
Peak Hour Factor	0.85	0.90	0.90	0.84	0.90	0.90
Hourly flow rate (vph)	142	156	71	133	240	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			142		418	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			142		418	142
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		57	96
cM capacity (veh/h)			1440		562	905

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	142	156	71	133	240	39
Volume Left	0	0	71	0	240	0
Volume Right	0	156	0	0	0	39
cSH	1700	1700	1440	1700	562	905
Volume to Capacity	0.08	0.09	0.05	0.08	0.43	0.04
Queue Length 95th (ft)	0	0	4	0	53	3
Control Delay (s)	0.0	0.0	7.6	0.0	16.1	9.2
Lane LOS			A		C	A
Approach Delay (s)	0.0		2.7		15.1	
Approach LOS					C	

Intersection Summary						
Average Delay			6.1			
Intersection Capacity Utilization			31.9%		ICU Level of Service	A
Analysis Period (min)			15			