Appendix F
Future plus Project Synchro Output

FRESNO FUTURE PLUS PROJECT CONDITIONS

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	58	0	0	255	0	0	0	0	0	0	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	63	0	0	277	0	0	0	0	0	0	65
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	277			63			340	340	63	340	340	277
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	277			63			340	340	63	340	340	277
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			100			100	100	100	100	100	91
cM capacity (veh/h)	1286			1540			561	581	1002	614	581	762

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total	63	277	0	0	65
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	65
cSH	1286	1540	1700	1700	762
Volume to Capacity	0.00	0.00	0.00	0.00	0.09
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	10.2
Lane LOS			A	A	B
Approach Delay (s)	0.0	0.0	0.0	10.2	
Approach LOS			A	B	

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	23.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	46	0	0	402	0	0	0	0	0	0	157
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	50	0	0	437	0	0	0	0	0	0	171
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	437			50			487	487	50	487	487	437
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	437			50			487	487	50	487	487	437
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			100			100	100	100	100	100	72
cM capacity (veh/h)	1123			1557			356	481	1018	491	481	620

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total	50	437	0	0	171
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	171
cSH	1123	1557	1700	1700	620
Volume to Capacity	0.00	0.00	0.00	0.00	0.28
Queue Length 95th (ft)	0	0	0	0	28
Control Delay (s)	0.0	0.0	0.0	0.0	13.0
Lane LOS			A	A	B
Approach Delay (s)	0.0	0.0	0.0	13.0	
Approach LOS			A	B	

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	37.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	19	268	0	0	196	47	480	112	90	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	291	0	0	213	51	522	122	98	0	0	0

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	118	194	142	122	583	159
Volume Left (vph)	21	0	0	0	522	0
Volume Right (vph)	0	0	0	51	0	98
Hadj (s)	0.12	0.03	0.03	-0.26	0.48	-0.40
Departure Headway (s)	7.2	7.1	7.2	6.9	6.7	5.8
Degree Utilization, x	0.23	0.38	0.28	0.23	1.09	0.26
Capacity (veh/h)	492	501	493	513	529	602
Control Delay (s)	11.1	13.1	11.7	10.7	88.1	9.6
Approach Delay (s)	12.4		11.3		71.3	
Approach LOS	B		B		F	

Intersection Summary			
Delay	45.3		
HCM Level of Service	E		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBL2	SBL	SBR	NWL	NWR	NWR2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop		Stop				Stop			Stop	
Volume (vph)	92	275	0	0	495	118	271	61	112	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	299	0	0	538	128	295	66	122	0	0	0

Direction, Lane #	SB 1	SB 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	200	199	359	308	328	155
Volume Left (vph)	100	0	0	0	295	0
Volume Right (vph)	0	0	0	128	0	122
Hadj (s)	0.28	0.03	0.03	-0.26	0.48	-0.52
Departure Headway (s)	7.6	7.3	7.0	6.7	7.7	6.7
Degree Utilization, x	0.42	0.41	0.70	0.57	0.70	0.29
Capacity (veh/h)	458	474	502	518	446	513
Control Delay (s)	14.8	14.0	23.2	17.0	25.9	11.2
Approach Delay (s)	14.4		20.3		21.2	
Approach LOS	B		C		C	

Intersection Summary			
Delay	19.1		
HCM Level of Service	C		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	666	59	0	6	808
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	724	64	0	7	878
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1131				
pX, platoon unblocked						
vC, conflicting volume	64				788	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64				788	64
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				98	12
cM capacity (veh/h)	1538				360	1000

Direction, Lane #	SE 1	NW 1	SW 1	SW 2
Volume Total	724	64	7	878
Volume Left	0	0	7	0
Volume Right	0	0	0	878
cSH	1700	1700	360	1000
Volume to Capacity	0.43	0.04	0.02	0.88
Queue Length 95th (ft)	0	0	1	302
Control Delay (s)	0.0	0.0	15.2	27.8
Lane LOS			C	D
Approach Delay (s)	0.0	0.0	27.7	
Approach LOS			D	

Intersection Summary			
Average Delay	14.7		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	710	120	0	267	759
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	772	130	0	290	825
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1132				
pX, platoon unblocked					0.96	
vC, conflicting volume	130				902	130
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				879	130
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				5	10
cM capacity (veh/h)	1455				306	919

Direction, Lane #	SE 1	NW 1	SW 1	SW 2
Volume Total	772	130	290	825
Volume Left	0	0	290	0
Volume Right	0	0	0	825
cSH	1700	1700	306	919
Volume to Capacity	0.45	0.08	0.95	0.90
Queue Length 95th (ft)	0	0	237	317
Control Delay (s)	0.0	0.0	76.8	31.8
Lane LOS			F	D
Approach Delay (s)	0.0	0.0	43.5	
Approach LOS			E	

Intersection Summary			
Average Delay	24.1		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: Van Ness Ave & 41 SB Off-Ramp

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	272	335	102	469	0	0	0	0	170	452	575
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	296	364	111	510	0	0	0	0	185	491	625
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		735										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	510			660			1200	1209	478	1209	1391	255
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	510			607			1181	1191	413	1191	1384	255
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			88			0	100	100	0	0	16
cM capacity (veh/h)	1052			910			0	154	553	122	118	744

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total	660	281	340	884	417
Volume Left	0	111	0	185	0
Volume Right	364	0	0	208	417
cSH	1700	910	1700	148	744
Volume to Capacity	0.39	0.12	0.20	5.98	0.56
Queue Length 95th (ft)	0	10	0	Err	88
Control Delay (s)	0.0	4.5	0.0	Err	15.8
Lane LOS		A		F	C
Approach Delay (s)	0.0	2.0		6801.9	
Approach LOS				F	

Intersection Summary			
Average Delay	3428.7		
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	197	591	275	488	0	0	0	0	91	655	693
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	214	642	299	530	0	0	0	0	99	712	753
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		735										
pX, platoon unblocked				0.86			0.86	0.86	0.86	0.86	0.86	
vC, conflicting volume	530			857			1754	1664	535	1664	1985	265
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			748			1797	1691	372	1691	2067	265
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			59			0	100	100	0	0	0
cM capacity (veh/h)	1033			733			0	47	535	35	27	733

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total	857	476	354	1062	502
Volume Left	0	299	0	99	0
Volume Right	642	0	0	251	502
cSH	1700	733	1700	36	733
Volume to Capacity	0.50	0.41	0.21	29.31	0.69
Queue Length 95th (ft)	0	50	0	Err	137
Control Delay (s)	0.0	10.6	0.0	Err	19.9
Lane LOS		B		F	C
Approach Delay (s)	0.0	6.1		6795.1	
Approach LOS				F	

Intersection Summary			
Average Delay	3271.9		
Intersection Capacity Utilization	131.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	316	0	317	0	0	0	0	997	223	226	555	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2						5.2		5.2	5.2	
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)	1770	1583						3442		1770	3539	
Flt Permitted	0.95	1.00						1.00		0.17	1.00	
Satd. Flow (perm)	1770	1583						3442		322	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	343	0	345	0	0	0	0	1084	242	246	603	0
RTOR Reduction (vph)	0	282	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	343	63	0	0	0	0	0	1310	0	246	603	0
Turn Type	Split									Perm		
Protected Phases	4	4						2			2	
Permitted Phases										2		
Actuated Green, G (s)	21.8	21.8						88.8		88.8	88.8	
Effective Green, g (s)	21.8	21.8						88.8		88.8	88.8	
Actuated g/C Ratio	0.18	0.18						0.74		0.74	0.74	
Clearance Time (s)	4.2	4.2						5.2		5.2	5.2	
Vehicle Extension (s)	5.2	5.2						0.2		0.2	0.2	
Lane Grp Cap (vph)	322	288						2547		238	2619	
v/s Ratio Prot	c0.19	0.04						0.38			0.17	
v/s Ratio Perm										c0.76		
v/c Ratio	1.07	0.22						0.51		1.03	0.23	
Uniform Delay, d1	49.1	41.8						6.5		15.6	4.9	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	68.5	0.9						0.1		67.4	0.0	
Delay (s)	117.6	42.7						6.6		83.0	4.9	
Level of Service	F	D						A		F	A	
Approach Delay (s)		80.0			0.0			6.6			27.5	
Approach LOS		F			A			A			C	

Intersection Summary

HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	160	6	535	0	0	0	0	1073	183	442	1261	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2						5.2		5.2	5.2	
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)	1770	1587						3462		1770	3539	
Flt Permitted	0.95	1.00						1.00		0.16	1.00	
Satd. Flow (perm)	1770	1587						3462		301	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	7	582	0	0	0	0	1166	199	480	1371	0
RTOR Reduction (vph)	0	75	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	174	514	0	0	0	0	0	1356	0	480	1371	0
Turn Type	Split									Perm		
Protected Phases	4	4						2			2	
Permitted Phases										2		
Actuated Green, G (s)	29.8	29.8						110.8		110.8	110.8	
Effective Green, g (s)	29.8	29.8						110.8		110.8	110.8	
Actuated g/C Ratio	0.20	0.20						0.74		0.74	0.74	
Clearance Time (s)	4.2	4.2						5.2		5.2	5.2	
Vehicle Extension (s)	5.2	5.2						0.2		0.2	0.2	
Lane Grp Cap (vph)	352	315						2557		222	2614	
v/s Ratio Prot	0.10	c0.32						0.39			0.39	
v/s Ratio Perm										c1.60		
v/c Ratio	0.49	1.63						0.53		2.16	0.52	
Uniform Delay, d1	53.4	60.1						8.4		19.6	8.4	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	2.4	299.0						0.1		537.6	0.1	
Delay (s)	55.8	359.1						8.5		557.2	8.4	
Level of Service	E	F						A		F	A	
Approach Delay (s)		290.0			0.0			8.5			150.8	
Approach LOS		F			A			A			F	

Intersection Summary

HCM Average Control Delay	128.7	HCM Level of Service	F
HCM Volume to Capacity ratio	2.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	115	24	426	386	931	0	0	676	214
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	125	26	463	420	1012	0	0	735	233
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								284			1117	
pX, platoon unblocked												
vC, conflicting volume	2672	2702	484	2218	2818	506	967			1012		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2672	2702	484	2218	2818	506	967			1012		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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	100	0	0	9	41			100		
cM capacity (veh/h)	0	9	529	13	7	512	708			681		

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	138	476	420	506	506	490	478
Volume Left	125	0	420	0	0	0	0
Volume Right	0	463	0	0	0	0	233
cSH	12	175	708	1700	1700	1700	1700
Volume to Capacity	11.67	2.73	0.59	0.30	0.30	0.29	0.28
Queue Length 95th (ft)	Err	1048	98	0	0	0	0
Control Delay (s)	Err	833.3	17.2	0.0	0.0	0.0	0.0
Lane LOS	F	F	C				
Approach Delay (s)	2893.6		5.0			0.0	
Approach LOS	F						

Intersection Summary				
Average Delay	592.2			
Intersection Capacity Utilization	85.6%	ICU Level of Service	E	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
6: SR99 N On-Ramp & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	300	5	374	314	917	0	0	1330	408
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	326	5	407	341	997	0	0	1446	443
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								284			1117	
pX, platoon unblocked	0.85	0.85	0.79	0.85	0.85	0.87	0.79			0.87		
vC, conflicting volume	3258	3347	945	2402	3568	498	1889			997		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2612	2717	396	1612	2976	122	1593			695		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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	0	100	0	0	48	0			100		
cM capacity (veh/h)	0	0	476	0	0	788	322			779		

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	329	409	341	498	498	964	925
Volume Left	326	0	341	0	0	0	0
Volume Right	0	407	0	0	0	0	443
cSH	0	0	322	1700	1700	1700	1700
Volume to Capacity	Err	Err	1.06	0.29	0.29	0.57	0.54
Queue Length 95th (ft)	Err	Err	315	0	0	0	0
Control Delay (s)	Err	Err	104.0	0.0	0.0	0.0	0.0
Lane LOS	F	F	F				
Approach Delay (s)	Err		26.5			0.0	
Approach LOS	F						

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	105.6%	ICU Level of Service	G	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
7: E St & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	21	4	38	49	19	13	190	1156	3	1	814	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	4	41	53	21	14	207	1257	3	1	885	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								595			806	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1969	2576	459	2159	2591	630	917			1260		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1932	2561	368	2129	2576	630	843			1260		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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	76	93	0	0	97	73			100		
cM capacity (veh/h)	0	18	607	16	18	424	761			548		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	68	88	835	632	443	475
Volume Left	23	53	207	0	1	0
Volume Right	41	14	0	3	0	33
cSH	0	20	761	1700	548	1700
Volume to Capacity	Err	4.43	0.27	0.37	0.00	0.28
Queue Length 95th (ft)	Err	Err	27	0	0	0
Control Delay (s)	Err	Err	6.6	0.0	0.1	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	Err	Err	3.7		0.0	
Approach LOS	F	F				

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	79.0%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
7: E St & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	33	5	93	250	162	153	274	998	82	6	1238	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	5	101	272	176	166	298	1085	89	7	1346	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								595			806	
pX, platoon unblocked	0.78	0.78	0.73	0.78	0.78	0.90	0.73			0.90		
vC, conflicting volume	2767	3145	689	2515	3116	587	1378			1174		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2149	2635	0	1823	2598	333	773			982		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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	40	87	0	0	72	51			99		
cM capacity (veh/h)	0	9	790	11	10	599	610			632		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	142	614	840	632	679	705
Volume Left	36	272	298	0	7	0
Volume Right	101	166	0	89	0	33
cSH	0	14	610	1700	632	1700
Volume to Capacity	Err	43.05	0.49	0.37	0.01	0.41
Queue Length 95th (ft)	Err	Err	67	0	1	0
Control Delay (s)	Err	Err	13.4	0.0	0.3	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	Err	Err	7.6		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	121.9%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	34	82	33	50	107	72	50	1043	48	38	741	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1782		1770	1750		1770	3516		1770	3515	
Flt Permitted	0.63	1.00		0.68	1.00		0.30	1.00		0.18	1.00	
Satd. Flow (perm)	1178	1782		1261	1750		561	3516		332	3515	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	89	36	54	116	78	54	1134	52	41	805	39
RTOR Reduction (vph)	0	27	0	0	42	0	0	5	0	0	6	0
Lane Group Flow (vph)	37	98	0	54	152	0	54	1181	0	41	838	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	13.0	13.0		13.0	13.0		29.1	29.1		29.1	29.1	
Effective Green, g (s)	13.0	13.0		13.0	13.0		29.1	29.1		29.1	29.1	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.57	0.57		0.57	0.57	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	301	456		323	448		321	2014		190	2014	
v/s Ratio Prot		0.06			c0.09			c0.34			0.24	
v/s Ratio Perm	0.03			0.04			0.10			0.12		
v/c Ratio	0.12	0.22		0.17	0.34		0.17	0.59		0.22	0.42	
Uniform Delay, d1	14.5	14.9		14.7	15.4		5.1	7.0		5.3	6.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.5		0.5	0.9		0.5	0.7		1.2	0.3	
Delay (s)	14.9	15.4		15.2	16.3		5.6	7.7		6.5	6.4	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.3			16.1			7.6			6.4	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	8.7
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	130	147	97	69	255	88	109	978	54	99	1101	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1752		1770	1791		1770	3511		1770	3471	
Flt Permitted	0.38	1.00		0.53	1.00		0.14	1.00		0.17	1.00	
Satd. Flow (perm)	716	1752		993	1791		263	3511		325	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	160	105	75	277	96	118	1063	59	108	1197	176
RTOR Reduction (vph)	0	32	0	0	23	0	0	7	0	0	21	0
Lane Group Flow (vph)	141	233	0	75	350	0	118	1115	0	108	1352	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	18.0	18.0		18.0	18.0		28.3	28.3		28.3	28.3	
Effective Green, g (s)	18.0	18.0		18.0	18.0		28.3	28.3		28.3	28.3	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.51	0.51		0.51	0.51	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	234	573		325	586		135	1807		167	1786	
v/s Ratio Prot		0.13			0.20			0.32			0.39	
v/s Ratio Perm	c0.20			0.08			c0.45			0.33		
v/c Ratio	0.60	0.41		0.23	0.60		0.87	0.62		0.65	0.76	
Uniform Delay, d1	15.5	14.4		13.5	15.5		11.8	9.5		9.7	10.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.3	1.0		0.8	2.5		44.7	0.9		11.2	2.2	
Delay (s)	21.8	15.3		14.2	17.9		56.5	10.4		20.9	12.9	
Level of Service	C	B		B	B		E	B		C	B	
Approach Delay (s)		17.6			17.3			14.8			13.5	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Broadway St & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	221	501	49	326	553	28	27	711	383	57	715	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3492		1770	1849		1770	3353		1770	3499	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3492		1770	1849		1770	3353		1770	3499	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	545	53	354	601	30	29	773	416	62	777	64
RTOR Reduction (vph)	0	5	0	0	1	0	0	49	0	0	4	0
Lane Group Flow (vph)	240	593	0	354	630	0	29	1140	0	62	837	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	23.8	23.8		45.5	45.5		4.7	49.2		6.3	50.8	
Effective Green, g (s)	23.8	23.8		45.5	45.5		4.7	49.2		6.3	50.8	
Actuated g/C Ratio	0.17	0.17		0.32	0.32		0.03	0.34		0.04	0.35	
Clearance Time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	292	576		558	583		58	1144		77	1233	
v/s Ratio Prot	0.14	c0.17		0.20	c0.34		0.02	c0.34		c0.04	0.24	
v/s Ratio Perm												
v/c Ratio	0.82	1.03		0.63	1.08		0.50	1.00		0.81	0.68	
Uniform Delay, d1	58.2	60.2		42.2	49.3		68.6	47.4		68.3	39.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.0	45.3		1.7	60.7		2.5	25.6		41.9	1.2	
Delay (s)	74.2	105.5		44.0	110.1		71.1	73.0		110.2	40.9	
Level of Service	E	F		D	F		E	E		F	D	
Approach Delay (s)		96.5			86.3			73.0			45.7	
Approach LOS		F			F			E			D	

Intersection Summary

HCM Average Control Delay	75.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	144.2	Sum of lost time (s)	19.4
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	197	769	79	273	386	57	154	815	342	121	996	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3490		1770	1827		1770	3382		1770	3479	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3490		1770	1827		1770	3382		1770	3479	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	214	836	86	297	420	62	167	886	372	132	1083	138
RTOR Reduction (vph)	0	5	0	0	4	0	0	34	0	0	7	0
Lane Group Flow (vph)	214	917	0	297	478	0	167	1224	0	132	1214	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	30.4	30.4		31.4	31.4		10.0	45.8		8.0	43.8	
Effective Green, g (s)	30.4	30.4		31.4	31.4		10.0	45.8		8.0	43.8	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.07	0.34		0.06	0.32	
Clearance Time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	399	786		412	425		131	1147		105	1129	
v/s Ratio Prot	0.12	c0.26		0.17	c0.26		c0.09	c0.36		0.07	0.35	
v/s Ratio Perm												
v/c Ratio	0.54	1.17		0.72	1.13		1.27	1.07		1.26	1.07	
Uniform Delay, d1	46.1	52.3		47.8	51.8		62.5	44.6		63.5	45.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	88.4		5.2	82.3		170.0	46.3		172.1	49.3	
Delay (s)	46.8	140.7		53.0	134.1		232.5	90.9		235.6	94.9	
Level of Service	D	F		D	F		F	F		F	F	
Approach Delay (s)		123.0			103.2			107.5			108.7	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	110.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	216	56	254	522	194	61	706	159	189	543	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.96		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3430		1770	3395		1770	3442		1770	3449	
Flt Permitted	0.20	1.00		0.57	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	369	3430		1061	3395		1770	3442		1770	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	235	61	276	567	211	66	767	173	205	590	121
RTOR Reduction (vph)	0	36	0	0	60	0	0	29	0	0	24	0
Lane Group Flow (vph)	38	260	0	276	718	0	66	911	0	205	687	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	20.2	20.2		20.2	20.2		5.0	23.7		8.8	27.5	
Effective Green, g (s)	20.2	20.2		20.2	20.2		5.0	23.7		8.8	27.5	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.08	0.36		0.14	0.42	
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	4.8	4.8		4.8	4.8		2.0	4.8		2.0	4.8	
Lane Grp Cap (vph)	114	1064		329	1053		136	1253		239	1457	
v/s Ratio Prot		0.08			0.21		0.04	c0.26		c0.12	0.20	
v/s Ratio Perm	0.10			c0.26								
v/c Ratio	0.33	0.24		0.84	0.68		0.49	0.73		0.86	0.47	
Uniform Delay, d1	17.3	16.8		20.9	19.6		28.8	17.9		27.5	13.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	0.2		18.4	2.3		1.0	2.5		24.1	0.5	
Delay (s)	20.6	17.0		39.3	21.9		29.8	20.4		51.6	14.0	
Level of Service	C	B		D	C		C	C		D	B	
Approach Delay (s)		17.4			26.5			21.1			22.4	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	12.4
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
10: Van Ness Ave & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	155	495	101	480	506	176	58	862	171	97	707	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1770	3402		1770	3451		1770	3480	
Flt Permitted	0.31	1.00		0.35	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	576	3449		656	3402		1770	3451		1770	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	538	110	522	550	191	63	937	186	105	768	97
RTOR Reduction (vph)	0	11	0	0	23	0	0	11	0	0	6	0
Lane Group Flow (vph)	168	637	0	522	718	0	63	1112	0	105	859	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	84.8	84.8		84.8	84.8		9.6	41.3		12.2	43.9	
Effective Green, g (s)	84.8	84.8		84.8	84.8		9.6	41.3		12.2	43.9	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.06	0.27		0.08	0.29	
Clearance Time (s)	4.2	4.2		4.2	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	4.8	4.8		4.8	4.8		2.0	4.8		2.0	4.8	
Lane Grp Cap (vph)	324	1941		369	1914		113	946		143	1014	
v/s Ratio Prot		0.18			0.21		0.04	c0.32		0.06	c0.25	
v/s Ratio Perm	0.29			c0.80								
v/c Ratio	0.52	0.33		1.41	0.38		0.56	1.18		0.73	0.85	
Uniform Delay, d1	20.3	17.7		32.9	18.3		68.5	54.7		67.7	50.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.2		202.0	0.2		3.4	90.2		15.4	7.3	
Delay (s)	22.9	17.9		234.9	18.5		71.8	144.9		83.1	57.5	
Level of Service	C	B		F	B		E	F		F	E	
Approach Delay (s)		18.9			107.9			141.0			60.3	
Approach LOS		B			F			F			E	

Intersection Summary			
HCM Average Control Delay	89.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.7	Sum of lost time (s)	12.6
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	39	440	151	0	0	0	0	836	98	24	773	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5065	1583					3483		1770	3539	
Flt Permitted		1.00	1.00					1.00		0.20	1.00	
Satd. Flow (perm)		5065	1583					3483		365	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	478	164	0	0	0	0	909	107	26	840	0
RTOR Reduction (vph)	0	0	68	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	520	96	0	0	0	0	1001	0	26	840	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Actuated Green, G (s)		20.0	20.0					25.6		25.6	25.6	
Effective Green, g (s)		20.0	20.0					25.6		25.6	25.6	
Actuated g/C Ratio		0.37	0.37					0.47		0.47	0.47	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		2.0	2.0					2.0		2.0	2.0	
Lane Grp Cap (vph)		1876	586					1651		173	1678	
v/s Ratio Prot		c0.10						c0.29			0.24	
v/s Ratio Perm			0.06							0.07		
v/c Ratio		0.28	0.16					0.61		0.15	0.50	
Uniform Delay, d1		11.9	11.4					10.5		8.0	9.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.4		0.1	0.1	
Delay (s)		12.0	11.4					10.9		8.2	9.9	
Level of Service		B	B					B		A	A	
Approach Delay (s)		11.8			0.0			10.9			9.8	
Approach LOS		B			A			B			A	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	155	1766	46	0	0	0	0	1131	48	73	916	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.99		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5065	1583					3518		1770	3539	
Flt Permitted		1.00	1.00					1.00		0.15	1.00	
Satd. Flow (perm)		5065	1583					3518		274	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	1920	50	0	0	0	0	1229	52	79	996	0
RTOR Reduction (vph)	0	0	20	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	2088	30	0	0	0	0	1279	0	79	996	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Actuated Green, G (s)		28.8	28.8					27.2		27.2	27.2	
Effective Green, g (s)		28.8	28.8					27.2		27.2	27.2	
Actuated g/C Ratio		0.45	0.45					0.42		0.42	0.42	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		2.0	2.0					2.0		2.0	2.0	
Lane Grp Cap (vph)		2265	708					1486		116	1495	
v/s Ratio Prot		c0.41						c0.36			0.28	
v/s Ratio Perm			0.02							0.29		
v/c Ratio		0.92	0.04					0.86		0.68	0.67	
Uniform Delay, d1		16.7	10.0					16.9		15.1	15.0	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		6.7	0.0					5.2		12.3	0.9	
Delay (s)		23.5	10.0					22.1		27.4	15.8	
Level of Service		C	B					C		C	B	
Approach Delay (s)		23.2			0.0			22.1			16.7	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	79	43	37	156	324	17	85	727	5	25	701	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	47	40	170	352	18	92	790	5	27	762	40
RTOR Reduction (vph)	0	0	35	0	0	13	0	0	3	0	0	28
Lane Group Flow (vph)	86	47	5	170	352	5	92	790	2	27	762	12
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6			8			4
Actuated Green, G (s)	8.5	8.5	8.5	18.6	18.6	18.6	5.8	24.9	24.9	2.8	21.9	21.9
Effective Green, g (s)	8.5	8.5	8.5	18.6	18.6	18.6	5.8	24.9	24.9	2.8	21.9	21.9
Actuated g/C Ratio	0.12	0.12	0.12	0.26	0.26	0.26	0.08	0.35	0.35	0.04	0.31	0.31
Clearance Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Vehicle Extension (s)	4.9	4.9	4.9	4.9	4.9	4.9	2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	211	222	188	894	485	412	144	1234	552	69	1085	486
v/s Ratio Prot	c0.05	0.03		0.05	c0.19		c0.05	c0.22		0.02	0.22	
v/s Ratio Perm			0.00			0.00			0.00			0.01
v/c Ratio	0.41	0.21	0.03	0.19	0.73	0.01	0.64	0.64	0.00	0.39	0.70	0.03
Uniform Delay, d1	29.1	28.4	27.8	20.5	24.1	19.6	31.8	19.5	15.2	33.5	21.9	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.0	0.1	0.2	6.4	0.0	6.7	1.5	0.0	1.3	2.6	0.0
Delay (s)	31.7	29.4	27.9	20.7	30.5	19.6	38.5	21.0	15.2	34.8	24.4	17.3
Level of Service	C	C	C	C	C	B	D	C	B	C	C	B
Approach Delay (s)		30.2			27.1			22.8			24.4	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	16.6
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	183	303	162	98	265	47	58	1148	70	67	760	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	199	329	176	107	288	51	63	1248	76	73	826	51
RTOR Reduction (vph)	0	0	65	0	0	41	0	0	32	0	0	30
Lane Group Flow (vph)	199	329	111	107	288	10	63	1248	44	73	826	21
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6			8			4
Actuated Green, G (s)	20.2	20.2	20.2	19.4	19.4	19.4	9.1	29.3	29.3	9.1	29.3	29.3
Effective Green, g (s)	20.2	20.2	20.2	19.4	19.4	19.4	9.1	29.3	29.3	9.1	29.3	29.3
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.10	0.31	0.31	0.10	0.31	0.31
Clearance Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Vehicle Extension (s)	4.9	4.9	4.9	4.9	4.9	4.9	2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	378	398	338	704	382	325	170	1096	490	170	1096	490
v/s Ratio Prot	0.11	c0.18		0.03	c0.15		0.04	c0.35		c0.04	0.23	
v/s Ratio Perm			0.07			0.01			0.03			0.01
v/c Ratio	0.53	0.83	0.33	0.15	0.75	0.03	0.37	1.14	0.09	0.43	0.75	0.04
Uniform Delay, d1	33.0	35.5	31.5	30.9	35.4	30.1	40.1	32.6	23.2	40.3	29.4	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	14.5	1.1	0.2	9.6	0.1	0.5	73.8	0.2	0.6	3.5	0.1
Delay (s)	35.4	50.1	32.6	31.1	44.9	30.2	40.6	106.5	23.3	40.9	32.9	22.9
Level of Service	D	D	C	C	D	C	D	F	C	D	C	C
Approach Delay (s)		41.6			39.9			98.9			33.0	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	61.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	16.6
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL2	NBL	NBR	SEL	SER	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations											
Volume (vph)	35	104	112	0	0	162	658	0	0	745	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2			4.2	4.2			4.2	4.2
Lane Util. Factor		0.97	1.00			1.00	0.95			0.95	1.00
Frt		1.00	0.85			1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00			0.95	1.00			1.00	1.00
Satd. Flow (prot)		3433	1583			1770	3539			3539	1583
Flt Permitted		0.95	1.00			0.34	1.00			1.00	1.00
Satd. Flow (perm)		3433	1583			637	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	113	122	0	0	176	715	0	0	810	447
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	171
Lane Group Flow (vph)	0	151	19	0	0	176	715	0	0	810	276
Turn Type	Split		Perm			Perm					Perm
Protected Phases	8	8					2			6	
Permitted Phases			8			2					6
Actuated Green, G (s)		6.0	6.0			23.2	23.2			23.2	23.2
Effective Green, g (s)		6.0	6.0			23.2	23.2			23.2	23.2
Actuated g/C Ratio		0.16	0.16			0.62	0.62			0.62	0.62
Clearance Time (s)		4.2	4.2			4.2	4.2			4.2	4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0			2.0	2.0
Lane Grp Cap (vph)		548	253			393	2184			2184	977
v/s Ratio Prot		c0.04					0.20			0.23	
v/s Ratio Perm			0.01			c0.28					0.17
v/c Ratio		0.28	0.08			0.45	0.33			0.37	0.28
Uniform Delay, d1		13.9	13.4			3.8	3.5			3.6	3.3
Progression Factor		1.00	1.00			1.00	1.00			1.00	1.00
Incremental Delay, d2		0.1	0.0			0.3	0.0			0.0	0.1
Delay (s)		14.0	13.5			4.1	3.5			3.6	3.4
Level of Service		B	B			A	A			A	A
Approach Delay (s)		13.8		0.0			3.6			3.5	
Approach LOS		B		A			A			A	

Intersection Summary

HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	8.4
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	31	168	254	231	1153	0	0	845	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					4.2	4.2	4.2	4.2			4.2	4.2
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3512	1583	1770	3539			3539	1583
Flt Permitted					0.99	1.00	0.28	1.00			1.00	1.00
Satd. Flow (perm)					3512	1583	519	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	34	183	276	251	1253	0	0	918	482
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	0	0	0	164
Lane Group Flow (vph)	0	0	0	0	217	216	251	1253	0	0	918	318
Turn Type				Split		Perm	Perm					Perm
Protected Phases				8	8			2			6	
Permitted Phases						8	2					6
Actuated Green, G (s)					13.7	13.7	37.8	37.8			37.8	37.8
Effective Green, g (s)					13.7	13.7	37.8	37.8			37.8	37.8
Actuated g/C Ratio					0.23	0.23	0.63	0.63			0.63	0.63
Clearance Time (s)					4.2	4.2	4.2	4.2			4.2	4.2
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					803	362	328	2233			2233	999
v/s Ratio Prot					0.06			0.35			0.26	
v/s Ratio Perm						c0.14	c0.48					0.20
v/c Ratio					0.27	0.60	0.77	0.56			0.41	0.32
Uniform Delay, d1					19.0	20.6	7.9	6.3			5.5	5.1
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					0.1	1.8	9.2	0.2			0.0	0.1
Delay (s)					19.1	22.4	17.1	6.5			5.6	5.2
Level of Service					B	C	B	A			A	A
Approach Delay (s)		0.0			20.9			8.3			5.4	
Approach LOS		A			C			A			A	

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	8.4
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	600	7	12	1088	153	14	142	5	183	128	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5076		1770	5085	1583	1770	3523		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.67	1.00		0.65	1.00	1.00
Satd. Flow (perm)	1770	5076		1770	5085	1583	1245	3523		1213	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	652	8	13	1183	166	15	154	5	199	139	284
RTOR Reduction (vph)	0	1	0	0	0	65	0	4	0	0	0	203
Lane Group Flow (vph)	135	659	0	13	1183	101	15	155	0	199	139	81
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		4
Actuated Green, G (s)	7.1	34.7		1.0	28.6	28.6	15.2	15.2		15.2	15.2	15.2
Effective Green, g (s)	7.1	34.7		1.0	28.6	28.6	15.2	15.2		15.2	15.2	15.2
Actuated g/C Ratio	0.11	0.54		0.02	0.45	0.45	0.24	0.24		0.24	0.24	0.24
Clearance Time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	196	2748		28	2269	706	295	835		288	442	375
v/s Ratio Prot	c0.08	0.13		0.01	c0.23			0.04			0.07	
v/s Ratio Perm						0.06	0.01			c0.16		0.05
v/c Ratio	0.69	0.24		0.46	0.52	0.14	0.05	0.19		0.69	0.31	0.22
Uniform Delay, d1	27.4	7.7		31.3	12.8	10.5	18.9	19.5		22.3	20.2	19.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.8	0.0		4.4	0.1	0.0	0.0	0.0		5.7	0.1	0.1
Delay (s)	35.2	7.8		35.7	12.9	10.5	18.9	19.6		28.0	20.3	19.8
Level of Service	D	A		D	B	B	B	B		C	C	B
Approach Delay (s)		12.4			12.8			19.5			22.5	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	13.2
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	288	1564	17	39	1322	468	26	312	28	408	294	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5077		1770	5085	1583	1770	3496		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.45	1.00		0.50	1.00	1.00
Satd. Flow (perm)	1770	5077		1770	5085	1583	843	3496		935	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	1700	18	42	1437	509	28	339	30	443	320	350
RTOR Reduction (vph)	0	1	0	0	0	160	0	7	0	0	0	163
Lane Group Flow (vph)	313	1717	0	42	1437	349	28	362	0	443	320	187
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		4
Actuated Green, G (s)	13.0	37.6		4.4	29.0	29.0	36.4	36.4		36.4	36.4	36.4
Effective Green, g (s)	13.0	37.6		4.4	29.0	29.0	36.4	36.4		36.4	36.4	36.4
Actuated g/C Ratio	0.14	0.41		0.05	0.32	0.32	0.40	0.40		0.40	0.40	0.40
Clearance Time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	251	2084		85	1610	501	335	1389		372	740	629
v/s Ratio Prot	c0.18	c0.34		0.02	0.28			0.10			0.17	
v/s Ratio Perm						0.22	0.03			c0.47		0.12
v/c Ratio	1.25	0.82		0.49	0.89	0.70	0.08	0.26		1.19	0.43	0.30
Uniform Delay, d1	39.3	24.0		42.5	29.8	27.4	17.2	18.6		27.6	20.1	18.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	139.9	2.6		1.6	6.6	3.4	0.0	0.0		109.6	0.1	0.1
Delay (s)	179.2	26.7		44.2	36.4	30.8	17.2	18.6		137.2	20.2	19.0
Level of Service	F	C		D	D	C	B	B		F	C	B
Approach Delay (s)		50.2			35.1			18.5			66.4	
Approach LOS		D			D			B			E	

Intersection Summary

HCM Average Control Delay	45.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	150	0	18	180	16	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	0	20	196	17	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	484			1038		
pX, platoon unblocked						
vC, conflicting volume			163		398	163
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			163		398	163
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		97	100
cM capacity (veh/h)			1416		599	882

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	163	215	22
Volume Left	0	20	17
Volume Right	0	0	4
cSH	1700	1416	640
Volume to Capacity	0.10	0.01	0.03
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	0.8	10.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	10.8
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	372	0	22	518	27	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	404	0	24	563	29	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	484			1038		
pX, platoon unblocked						
vC, conflicting volume			404		1015	404
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			404		1015	404
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		89	99
cM capacity (veh/h)			1154		258	646

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	404	587	37
Volume Left	0	24	29
Volume Right	0	0	8
cSH	1700	1154	295
Volume to Capacity	0.24	0.02	0.13
Queue Length 95th (ft)	0	2	11
Control Delay (s)	0.0	0.6	18.9
Lane LOS		A	C
Approach Delay (s)	0.0	0.6	18.9
Approach LOS			C

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
16: H St & Inyo St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	646	102	0	0	176	161	0	27	0	7	63	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	15	15	12	12	15	15	15	12	15	12
Total Lost time (s)	4.0	4.2			4.2	4.2		4.2			4.0	4.2
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00			1.00	0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		1.00			0.99	1.00
Satd. Flow (prot)	1770	3539			3539	1583		2049			2038	1583
Flt Permitted	0.95	1.00			1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1770	3539			3539	1583		2049			2049	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	702	111	0	0	191	175	0	29	0	8	68	283
RTOR Reduction (vph)	0	0	0	0	0	145	0	0	0	0	0	225
Lane Group Flow (vph)	702	111	0	0	191	30	0	29	0	0	76	58
Turn Type	Prot					Perm	Perm			Prot		custom
Protected Phases	5	2			6			4!		4!	8	
Permitted Phases						6	4					4
Actuated Green, G (s)	29.3	44.8			11.5	11.5		13.8			14.0	13.8
Effective Green, g (s)	29.3	44.8			11.5	11.5		13.8			14.0	13.8
Actuated g/C Ratio	0.44	0.67			0.17	0.17		0.21			0.21	0.21
Clearance Time (s)	4.0	4.2			4.2	4.2		4.2			4.0	4.2
Vehicle Extension (s)	3.0	4.8			4.8	4.8		2.0			3.0	2.0
Lane Grp Cap (vph)	774	2366			607	272		422			428	326
v/s Ratio Prot	c0.40	0.03			c0.05			0.01			0.04	
v/s Ratio Perm						0.02					c0.00	0.04
v/c Ratio	0.91	0.05			0.31	0.11		0.07			0.18	0.18
Uniform Delay, d1	17.6	3.8			24.3	23.4		21.4			21.8	21.9
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	14.2	0.0			0.6	0.4		0.0			0.2	0.1
Delay (s)	31.8	3.8			24.9	23.8		21.4			22.0	22.0
Level of Service	C	A			C	C		C			C	C
Approach Delay (s)		28.0			24.4			21.4			22.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	531	211	0	0	109	89	0	63	0	91	27	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	15	15	12	12	15	15	15	12	15	12
Total Lost time (s)	4.0	4.2			4.2	4.2		4.2			4.0	4.2
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00			1.00	0.85		1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		1.00			0.96	1.00
Satd. Flow (prot)	1770	3539			3539	1583		2049			1973	1583
Flt Permitted	0.95	1.00			1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1770	3539			3539	1583		2049			2049	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	577	229	0	0	118	97	0	68	0	99	29	561
RTOR Reduction (vph)	0	0	0	0	0	83	0	0	0	0	0	424
Lane Group Flow (vph)	577	229	0	0	118	14	0	68	0	0	128	137
Turn Type	Prot					Perm	Perm			Prot		custom
Protected Phases	5	2			6			4!		4!	8	
Permitted Phases						6	4					4
Actuated Green, G (s)	29.1	42.7			9.6	9.6		16.5			16.7	16.5
Effective Green, g (s)	29.1	42.7			9.6	9.6		16.5			16.7	16.5
Actuated g/C Ratio	0.43	0.63			0.14	0.14		0.24			0.25	0.24
Clearance Time (s)	4.0	4.2			4.2	4.2		4.2			4.0	4.2
Vehicle Extension (s)	3.0	4.8			4.8	4.8		2.0			3.0	2.0
Lane Grp Cap (vph)	762	2235			503	225		500			506	386
v/s Ratio Prot	c0.33	0.06			c0.03			0.03			0.06	
v/s Ratio Perm						0.01					0.00	c0.09
v/c Ratio	0.76	0.10			0.23	0.06		0.14			0.25	0.35
Uniform Delay, d1	16.3	4.9			25.7	25.1		20.0			20.4	21.1
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	4.3	0.0			0.5	0.2		0.0			0.3	0.2
Delay (s)	20.6	4.9			26.2	25.3		20.0			20.7	21.3
Level of Service	C	A			C	C		C			C	C
Approach Delay (s)		16.1			25.8			20.0			21.2	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	12.4
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	222	78	205	455	54	111	205	105	13	111	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3401		1770	3483		1770	1768		1770	1828	
Flt Permitted	0.42	1.00		0.55	1.00		0.67	1.00		0.46	1.00	
Satd. Flow (perm)	775	3401		1033	3483		1246	1768		863	1828	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	241	85	223	495	59	121	223	114	14	121	17
RTOR Reduction (vph)	0	46	0	0	16	0	0	30	0	0	9	0
Lane Group Flow (vph)	5	280	0	223	538	0	121	307	0	14	129	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.0	26.0		26.0	26.0		22.0	22.0		22.0	22.0	
Effective Green, g (s)	26.0	26.0		26.0	26.0		22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.2	4.2		4.2	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	357	1568		476	1606		486	690		337	713	
v/s Ratio Prot		0.08			0.15			c0.17			0.07	
v/s Ratio Perm	0.01			c0.22			0.10			0.02		
v/c Ratio	0.01	0.18		0.47	0.34		0.25	0.45		0.04	0.18	
Uniform Delay, d1	8.2	8.9		10.4	9.7		11.6	12.7		10.7	11.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		0.3	0.0		0.1	0.2		0.0	0.0	
Delay (s)	8.3	8.9		10.7	9.7		11.7	12.9		10.7	11.3	
Level of Service	A	A		B	A		B	B		B	B	
Approach Delay (s)		8.9			10.0			12.6			11.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	84	425	126	94	361	114	104	265	114	99	411	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3418		1770	3412		1770	1779		1770	1776	
Flt Permitted	0.44	1.00		0.38	1.00		0.17	1.00		0.39	1.00	
Satd. Flow (perm)	812	3418		715	3412		318	1779		721	1776	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	462	137	102	392	124	113	288	124	108	447	200
RTOR Reduction (vph)	0	47	0	0	52	0	0	26	0	0	26	0
Lane Group Flow (vph)	91	552	0	102	464	0	113	386	0	108	621	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	26.0	26.0		26.0	26.0		23.4	23.4		23.4	23.4	
Effective Green, g (s)	26.0	26.0		26.0	26.0		23.4	23.4		23.4	23.4	
Actuated g/C Ratio	0.45	0.45		0.45	0.45		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.2	4.2		4.2	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	365	1538		322	1535		129	720		292	719	
v/s Ratio Prot		c0.16			0.14			0.22			0.35	
v/s Ratio Perm	0.11			0.14			c0.35			0.15		
v/c Ratio	0.25	0.36		0.32	0.30		0.88	0.54		0.37	0.86	
Uniform Delay, d1	9.9	10.4		10.2	10.1		15.9	13.1		12.0	15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		0.2	0.0		42.7	0.4		0.3	10.2	
Delay (s)	10.0	10.5		10.4	10.2		58.6	13.5		12.3	25.9	
Level of Service	A	B		B	B		E	B		B	C	
Approach Delay (s)		10.4			10.2			23.2			24.0	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	8.4
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	36	461	75	0	0	0	0	61	71	59	203	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5						4.5		4.5	4.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.98						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4969						1727		1770	1863	
Flt Permitted		1.00						1.00		0.67	1.00	
Satd. Flow (perm)		4969						1727		1240	1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	501	82	0	0	0	0	66	77	64	221	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	52	0	0	0	0
Lane Group Flow (vph)	0	590	0	0	0	0	0	91	0	64	221	0
Turn Type	Split									Perm		
Protected Phases	2	2						8			4	
Permitted Phases										4		
Actuated Green, G (s)		24.8						16.6		16.6	16.6	
Effective Green, g (s)		24.8						16.6		16.6	16.6	
Actuated g/C Ratio		0.49						0.33		0.33	0.33	
Clearance Time (s)		4.5						4.5		4.5	4.5	
Vehicle Extension (s)		0.2						0.2		0.2	0.2	
Lane Grp Cap (vph)		2445						569		408	614	
v/s Ratio Prot		c0.12						0.05			c0.12	
v/s Ratio Perm										0.05		
v/c Ratio		0.24						0.16		0.16	0.36	
Uniform Delay, d1		7.4						12.0		12.0	12.9	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.0						0.0		0.1	0.1	
Delay (s)		7.4						12.0		12.0	13.0	
Level of Service		A						B		B	B	
Approach Delay (s)		7.4			0.0			12.0			12.8	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	109	1367	252	0	0	0	0	292	294	81	391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5						4.5		4.5	4.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.98						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4958						1736		1770	1863	
Flt Permitted		1.00						1.00		0.18	1.00	
Satd. Flow (perm)		4958						1736		342	1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	1486	274	0	0	0	0	317	320	88	425	0
RTOR Reduction (vph)	0	43	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1835	0	0	0	0	0	632	0	88	425	0
Turn Type	Split									Perm		
Protected Phases	2	2						8			4	
Permitted Phases										4		
Actuated Green, G (s)		23.0						23.0		23.0	23.0	
Effective Green, g (s)		23.0						23.0		23.0	23.0	
Actuated g/C Ratio		0.42						0.42		0.42	0.42	
Clearance Time (s)		4.5						4.5		4.5	4.5	
Vehicle Extension (s)		0.2						0.2		0.2	0.2	
Lane Grp Cap (vph)		2073						726		143	779	
v/s Ratio Prot		c0.37						c0.36			0.23	
v/s Ratio Perm										0.26		
v/c Ratio		0.89						0.87		0.62	0.55	
Uniform Delay, d1		14.8						14.6		12.5	12.1	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		4.8						10.8		5.4	0.4	
Delay (s)		19.6						25.5		18.0	12.5	
Level of Service		B						C		B	B	
Approach Delay (s)		19.6			0.0			25.5			13.4	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	127	449	17	14	9	0	0	19	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	138	488	18	15	10	0	0	21	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1000			1010							
pX, platoon unblocked												
vC, conflicting volume	507			0			538	783	0	778	773	253
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	507			0			538	783	0	778	773	253
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			91			96	97	100	100	93	99
cM capacity (veh/h)	1054			1622			374	296	1084	261	300	746

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	SW 1
Volume Total	382	262	15	10	28
Volume Left	138	0	15	0	0
Volume Right	0	18	0	0	8
cSH	1622	1700	374	296	358
Volume to Capacity	0.09	0.15	0.04	0.03	0.08
Queue Length 95th (ft)	7	0	3	3	6
Control Delay (s)	3.2	0.0	15.0	17.6	15.9
Lane LOS	A		C	C	C
Approach Delay (s)	1.9		16.0		15.9
Approach LOS			C		C

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	68.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	283	561	38	101	25	0	0	18	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	308	610	41	110	27	0	0	20	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1000			1010							
pX, platoon unblocked												
vC, conflicting volume	651			0			934	1266	0	1259	1246	326
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651			0			934	1266	0	1259	1246	326
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			81			35	80	100	100	86	99
cM capacity (veh/h)	931			1622			168	136	1084	92	140	670

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	SW 1
Volume Total	612	346	110	27	24
Volume Left	308	0	110	0	0
Volume Right	0	41	0	0	4
cSH	1622	1700	168	136	163
Volume to Capacity	0.19	0.20	0.65	0.20	0.15
Queue Length 95th (ft)	17	0	94	18	13
Control Delay (s)	4.8	0.0	60.0	38.0	30.8
Lane LOS	A		F	E	D
Approach Delay (s)	3.1		55.6		30.8
Approach LOS			F		D

Intersection Summary				
Average Delay	10.1			
Intersection Capacity Utilization	98.0%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (vph)	102	9	24	154	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.8			4.8	4.8	
Lane Util. Factor	0.95			0.95	1.00	
Frt	0.99			1.00	0.88	
Flt Protected	1.00			0.99	1.00	
Satd. Flow (prot)	3495			3516	1624	
Flt Permitted	1.00			0.90	1.00	
Satd. Flow (perm)	3495			3198	1624	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	10	26	167	2	25
RTOR Reduction (vph)	8	0	0	0	24	0
Lane Group Flow (vph)	113	0	0	193	3	0
Turn Type			Perm			
Protected Phases	2			2		
Permitted Phases			2		4	
Actuated Green, G (s)	2.9			2.9	0.6	
Effective Green, g (s)	2.9			2.9	0.6	
Actuated g/C Ratio	0.22			0.22	0.05	
Clearance Time (s)	4.8			4.8	4.8	
Vehicle Extension (s)	0.2			0.2	0.2	
Lane Grp Cap (vph)	774			708	74	
v/s Ratio Prot	0.03					
v/s Ratio Perm				c0.06	c0.00	
v/c Ratio	0.15			0.27	0.04	
Uniform Delay, d1	4.1			4.2	6.0	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.0			0.1	0.1	
Delay (s)	4.1			4.3	6.1	
Level of Service	A			A	A	
Approach Delay (s)	4.1			4.3	6.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	13.1	Sum of lost time (s)	9.6
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (vph)	276	104	110	417	153	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.8			4.8	4.8	
Lane Util. Factor	0.95			0.95	1.00	
Frt	0.96			1.00	0.94	
Flt Protected	1.00			0.99	0.97	
Satd. Flow (prot)	3394			3503	1706	
Flt Permitted	1.00			0.79	0.97	
Satd. Flow (perm)	3394			2789	1706	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	300	113	120	453	166	126
RTOR Reduction (vph)	58	0	0	0	48	0
Lane Group Flow (vph)	355	0	0	573	244	0
Turn Type			Perm			
Protected Phases	2			2		
Permitted Phases			2		4	
Actuated Green, G (s)	9.1			9.1	7.4	
Effective Green, g (s)	9.1			9.1	7.4	
Actuated g/C Ratio	0.35			0.35	0.28	
Clearance Time (s)	4.8			4.8	4.8	
Vehicle Extension (s)	0.2			0.2	0.2	
Lane Grp Cap (vph)	1183			972	484	
v/s Ratio Prot	0.10					
v/s Ratio Perm				c0.21	c0.14	
v/c Ratio	0.30			0.59	0.50	
Uniform Delay, d1	6.2			7.0	7.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.1			0.6	0.3	
Delay (s)	6.2			7.6	8.1	
Level of Service	A			A	A	
Approach Delay (s)	6.2			7.6	8.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	26.1	Sum of lost time (s)	9.6
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	449	202	240	219	31	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	488	220	261	238	34	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	537			471		
pX, platoon unblocked						
vC, conflicting volume			708		1239	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			708		1239	354
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			71		72	92
cM capacity (veh/h)			887		118	643

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total	325	382	340	159	85
Volume Left	0	0	261	0	34
Volume Right	0	220	0	0	51
cSH	1700	1700	887	1700	233
Volume to Capacity	0.19	0.22	0.29	0.09	0.36
Queue Length 95th (ft)	0	0	31	0	40
Control Delay (s)	0.0	0.0	9.0	0.0	29.1
Lane LOS			A		D
Approach Delay (s)	0.0		6.1		29.1
Approach LOS					D

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	656	62	39	569	109	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	713	67	42	618	118	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	537			479		
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			780		1141	390
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			668		1047	258
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		41	88
cM capacity (veh/h)			873		202	705

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total	475	305	249	412	202
Volume Left	0	0	42	0	118
Volume Right	0	67	0	0	84
cSH	1700	1700	873	1700	287
Volume to Capacity	0.28	0.18	0.05	0.24	0.70
Queue Length 95th (ft)	0	0	4	0	122
Control Delay (s)	0.0	0.0	2.0	0.0	42.6
Lane LOS			A		E
Approach Delay (s)	0.0		0.8		42.6
Approach LOS					E

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	285	58	56	4	199	9	146	486	4	3	61	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	1.00		1.00	0.93	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764			1850		1770	1861		1770	1733	
Flt Permitted		0.63			0.99		0.68	1.00		0.31	1.00	
Satd. Flow (perm)		1155			1840		1263	1861		584	1733	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	310	63	61	4	216	10	159	528	4	3	66	57
RTOR Reduction (vph)	0	9	0	0	2	0	0	1	0	0	30	0
Lane Group Flow (vph)	0	425	0	0	228	0	159	531	0	3	93	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		26.0			26.0		31.2	31.2		31.2	31.2	
Effective Green, g (s)		26.0			26.0		31.2	31.2		31.2	31.2	
Actuated g/C Ratio		0.40			0.40		0.48	0.48		0.48	0.48	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		458			729		601	885		278	824	
v/s Ratio Prot								c0.29			0.05	
v/s Ratio Perm		c0.37			0.12		0.13			0.01		
v/c Ratio		0.93			0.31		0.26	0.60		0.01	0.11	
Uniform Delay, d1		18.9			13.6		10.3	12.6		9.1	9.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		24.6			0.1		0.1	0.8		0.0	0.0	
Delay (s)		43.5			13.7		10.4	13.4		9.1	9.6	
Level of Service		D			B		B	B		A	A	
Approach Delay (s)		43.5			13.7			12.7			9.5	
Approach LOS		D			B			B			A	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	8.4
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	277	74	255	71	341	79	52	412	14	25	1473	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.98		1.00	1.00		1.00	0.98	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1718			1809		1770	1854		1770	1834	
Flt Permitted		0.48			0.85		0.05	1.00		0.38	1.00	
Satd. Flow (perm)		838			1542		98	1854		705	1834	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	301	80	277	77	371	86	57	448	15	27	1601	187
RTOR Reduction (vph)	0	11	0	0	5	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	647	0	0	529	0	57	462	0	27	1785	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		55.8			55.8		75.8	75.8		75.8	75.8	
Effective Green, g (s)		55.8			55.8		75.8	75.8		75.8	75.8	
Actuated g/C Ratio		0.40			0.40		0.54	0.54		0.54	0.54	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		334			615		53	1004		382	993	
v/s Ratio Prot								0.25			c0.97	
v/s Ratio Perm		c0.77			0.34		0.58			0.04		
v/c Ratio		1.94			0.86		1.08	0.46		0.07	1.80	
Uniform Delay, d1		42.1			38.5		32.1	19.6		15.3	32.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		432.0			11.4		146.3	0.1		0.0	362.9	
Delay (s)		474.1			50.0		178.4	19.7		15.3	395.0	
Level of Service		F			D		F	B		B	F	
Approach Delay (s)		474.1			50.0			37.1			389.3	
Approach LOS		F			D			D			F	

Intersection Summary

HCM Average Control Delay	301.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.86		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	160.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	14	86	2	3	28	101	4	689	85	64	84	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.90		1.00	0.98		1.00	0.97	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1846			1668		1770	1832		1770	1812	
Flt Permitted		0.95			1.00		0.69	1.00		0.20	1.00	
Satd. Flow (perm)		1773			1661		1277	1832		369	1812	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	93	2	3	30	110	4	749	92	70	91	20
RTOR Reduction (vph)	0	2	0	0	84	0	0	6	0	0	8	0
Lane Group Flow (vph)	0	108	0	0	59	0	4	835	0	70	103	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		13.3			13.3		34.2	34.2		34.2	34.2	
Effective Green, g (s)		13.3			13.3		34.2	34.2		34.2	34.2	
Actuated g/C Ratio		0.24			0.24		0.61	0.61		0.61	0.61	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		422			395		781	1121		226	1109	
v/s Ratio Prot								c0.46			0.06	
v/s Ratio Perm		c0.06			0.04		0.00			0.19		
v/c Ratio		0.26			0.15		0.01	0.74		0.31	0.09	
Uniform Delay, d1		17.3			16.8		4.2	7.7		5.2	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.1		0.0	2.4		0.3	0.0	
Delay (s)		17.4			16.9		4.2	10.1		5.5	4.5	
Level of Service		B			B		A	B		A	A	
Approach Delay (s)		17.4			16.9			10.1			4.9	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	8.4
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	28	121	66	22	211	58	49	600	103	111	1555	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.97		1.00	0.98		1.00	0.98	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1806		1770	1822		1770	1821	
Flt Permitted		0.67			0.89		0.04	1.00		0.31	1.00	
Satd. Flow (perm)		1201			1616		69	1822		573	1821	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	132	72	24	229	63	53	652	112	121	1690	299
RTOR Reduction (vph)	0	12	0	0	7	0	0	4	0	0	5	0
Lane Group Flow (vph)	0	222	0	0	309	0	53	760	0	121	1984	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		23.8			23.8		107.8	107.8		107.8	107.8	
Effective Green, g (s)		23.8			23.8		107.8	107.8		107.8	107.8	
Actuated g/C Ratio		0.17			0.17		0.77	0.77		0.77	0.77	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		204			275		53	1403		441	1402	
v/s Ratio Prot								0.42			c1.09	
v/s Ratio Perm		0.19			c0.19		0.77			0.21		
v/c Ratio		1.09			1.12		1.00	0.54		0.27	1.42	
Uniform Delay, d1		58.1			58.1		16.1	6.4		4.7	16.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		89.1			92.2		123.6	0.2		0.1	191.2	
Delay (s)		147.2			150.3		139.7	6.6		4.8	207.3	
Level of Service		F			F		F	A		A	F	
Approach Delay (s)		147.2			150.3			15.2			195.7	
Approach LOS		F			F			B			F	

Intersection Summary

HCM Average Control Delay	145.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	124.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
24: G St & Tulare St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	98	100	8	6	114	45	64	807	17	26	170	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.99			0.96		1.00	1.00		1.00	0.93	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3436			3388		1770	1857		1770	1740	
Flt Permitted		0.75			0.95		0.50	1.00		0.10	1.00	
Satd. Flow (perm)		2655			3209		924	1857		194	1740	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	109	9	7	124	49	70	877	18	28	185	146
RTOR Reduction (vph)	0	4	0	0	30	0	0	1	0	0	36	0
Lane Group Flow (vph)	0	221	0	0	150	0	70	894	0	28	296	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		30.0			30.0		38.4	38.4		38.4	38.4	
Effective Green, g (s)		30.0			30.0		38.4	38.4		38.4	38.4	
Actuated g/C Ratio		0.39			0.39		0.50	0.50		0.50	0.50	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1037			1254		462	929		97	870	
v/s Ratio Prot								c0.48			0.17	
v/s Ratio Perm		c0.08			0.05		0.08			0.14		
v/c Ratio		0.21			0.12		0.15	0.96		0.29	0.34	
Uniform Delay, d1		15.6			15.0		10.4	18.5		11.2	11.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.0		0.1	20.7		0.6	0.1	
Delay (s)		15.6			15.0		10.4	39.2		11.8	11.6	
Level of Service		B			B		B	D		B	B	
Approach Delay (s)		15.6			15.0			37.1			11.7	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	8.4
Intersection Capacity Utilization	113.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	268	325	162	80	438	48	76	661	44	52	1724	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.97			0.99		1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3366			3470		1770	1845		1770	1819	
Flt Permitted		0.55			0.55		0.05	1.00		0.22	1.00	
Satd. Flow (perm)		1878			1922		86	1845		415	1819	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	291	353	176	87	476	52	83	718	48	57	1874	351
RTOR Reduction (vph)	0	12	0	0	5	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	808	0	0	610	0	83	764	0	57	2220	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		44.8			44.8		86.8	86.8		86.8	86.8	
Effective Green, g (s)		44.8			44.8		86.8	86.8		86.8	86.8	
Actuated g/C Ratio		0.32			0.32		0.62	0.62		0.62	0.62	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		601			615		53	1144		257	1128	
v/s Ratio Prot								0.41			c1.22	
v/s Ratio Perm		c0.43			0.32		0.97			0.14		
v/c Ratio		1.72dl			0.99		1.57	0.67		0.22	1.97	
Uniform Delay, d1		47.6			47.4		26.6	17.3		11.7	26.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		165.7			34.1		327.7	1.2		0.2	438.9	
Delay (s)		213.3			81.6		354.3	18.4		11.9	465.5	
Level of Service		F			F		F	B		B	F	
Approach Delay (s)		213.3			81.6			51.2			454.2	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	285.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	170.8%	ICU Level of Service	H
Analysis Period (min)	15		

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	243	524	43	139	262	123	121	663	162	161	193	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.95		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3369		1770	3435		1770	3390	
Flt Permitted	0.50	1.00		0.37	1.00		0.57	1.00		0.22	1.00	
Satd. Flow (perm)	936	3499		683	3369		1068	3435		417	3390	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	264	570	47	151	285	134	132	721	176	175	210	82
RTOR Reduction (vph)	0	11	0	0	64	0	0	34	0	0	46	0
Lane Group Flow (vph)	264	606	0	151	355	0	132	863	0	175	246	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	23.8	23.8		23.8	23.8		25.0	25.0		25.0	25.0	
Effective Green, g (s)	23.8	23.8		23.8	23.8		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.43	0.43		0.43	0.43	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	387	1448		283	1394		464	1493		181	1474	
v/s Ratio Prot		0.17			0.11			0.25			0.07	
v/s Ratio Perm	c0.28			0.22			0.12			c0.42		
v/c Ratio	0.68	0.42		0.53	0.25		0.28	0.58		0.97	0.17	
Uniform Delay, d1	13.8	11.9		12.7	11.0		10.5	12.3		15.8	9.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	0.1		1.0	0.0		0.1	0.3		56.3	0.0	
Delay (s)	17.7	12.0		13.6	11.1		10.6	12.6		72.2	9.9	
Level of Service	B	B		B	B		B	B		E	A	
Approach Delay (s)		13.7			11.8			12.3			33.3	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	8.7
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	189	456	197	266	330	245	88	781	135	218	1656	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3379		1770	3313		1770	3461		1770	3476	
Flt Permitted	0.29	1.00		0.23	1.00		0.06	1.00		0.22	1.00	
Satd. Flow (perm)	531	3379		436	3313		117	3461		412	3476	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	496	214	289	359	266	96	849	147	237	1800	243
RTOR Reduction (vph)	0	11	0	0	105	0	0	13	0	0	10	0
Lane Group Flow (vph)	205	699	0	289	520	0	96	983	0	237	2033	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	37.5	37.5		37.5	37.5		63.8	63.8		63.8	63.8	
Effective Green, g (s)	37.5	37.5		37.5	37.5		63.8	63.8		63.8	63.8	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.58	0.58		0.58	0.58	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	181	1152		149	1129		68	2007		239	2016	
v/s Ratio Prot		0.21			0.16			0.28			0.58	
v/s Ratio Perm	0.39			c0.66			c0.82			0.58		
v/c Ratio	1.13	0.61		1.94	0.46		1.41	0.49		0.99	1.01	
Uniform Delay, d1	36.2	30.1		36.2	28.3		23.1	13.6		22.8	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	107.0	0.6		446.4	0.1		252.0	0.1		55.6	22.2	
Delay (s)	143.3	30.8		482.7	28.5		275.1	13.6		78.4	45.3	
Level of Service	F	C		F	C		F	B		E	D	
Approach Delay (s)		56.0			172.1			36.6			48.7	
Approach LOS		E			F			D			D	

Intersection Summary

HCM Average Control Delay	69.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	126.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
26: Van Ness Ave & Tulare St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	85	210	140	136	385	60	142	529	160	90	273	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.98		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1751		1770	3468		1770	3416		1770	3346	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1751		1770	3468		1770	3416		1770	3346	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	228	152	148	418	65	154	575	174	98	297	170
RTOR Reduction (vph)	0	32	0	0	15	0	0	37	0	0	110	0
Lane Group Flow (vph)	92	348	0	148	468	0	154	712	0	98	357	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.2	19.1		8.4	21.3		7.9	22.0		5.8	19.9	
Effective Green, g (s)	6.2	19.1		8.4	21.3		7.9	22.0		5.8	19.9	
Actuated g/C Ratio	0.09	0.27		0.12	0.30		0.11	0.31		0.08	0.28	
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	153	466		207	1030		195	1048		143	929	
v/s Ratio Prot	0.05	c0.20		c0.08	0.13		c0.09	c0.21		0.06	0.11	
v/s Ratio Perm												
v/c Ratio	0.60	0.75		0.71	0.45		0.79	0.68		0.69	0.38	
Uniform Delay, d1	31.6	24.1		30.5	20.5		31.1	21.8		32.1	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.5	7.7		9.4	0.7		17.5	2.3		10.3	0.6	
Delay (s)	36.1	31.8		39.8	21.1		48.6	24.1		42.4	21.5	
Level of Service	D	C		D	C		D	C		D	C	
Approach Delay (s)		32.6			25.5			28.3			25.1	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	12.2
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	110	399	231	348	450	94	195	880	156	139	1354	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1760		1770	3448		1770	3459		1770	3468	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1760		1770	3448		1770	3459		1770	3468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	434	251	378	489	102	212	957	170	151	1472	229
RTOR Reduction (vph)	0	14	0	0	11	0	0	10	0	0	8	0
Lane Group Flow (vph)	120	671	0	378	580	0	212	1117	0	151	1693	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.0	43.8		25.0	54.8		10.0	52.8		12.0	54.8	
Effective Green, g (s)	14.0	43.8		25.0	54.8		10.0	52.8		12.0	54.8	
Actuated g/C Ratio	0.09	0.29		0.17	0.37		0.07	0.35		0.08	0.37	
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	165	514		295	1260		118	1218		142	1267	
v/s Ratio Prot	0.07	c0.38		c0.21	0.17		c0.12	0.32		0.09	c0.49	
v/s Ratio Perm												
v/c Ratio	0.73	1.31		1.28	0.46		1.80	0.92		1.06	1.34	
Uniform Delay, d1	66.1	53.1		62.5	36.3		70.0	46.5		69.0	47.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.7	150.9		150.1	0.6		390.1	11.4		93.4	156.7	
Delay (s)	78.8	204.0		212.6	36.9		460.1	57.9		162.4	204.3	
Level of Service	E	F		F	D		F	E		F	F	
Approach Delay (s)		185.4			105.4			121.6			200.9	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	158.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	123.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	167	374	180	0	0	0	0	514	156	176	627	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5					4.5		4.5	4.5	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.97		1.00	1.00	
Flt Protected		0.98	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5008	1583					3415		1770	3539	
Flt Permitted		0.98	1.00					1.00		0.33	1.00	
Satd. Flow (perm)		5008	1583					3415		618	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	407	196	0	0	0	0	559	170	191	682	0
RTOR Reduction (vph)	0	0	128	0	0	0	0	51	0	0	0	0
Lane Group Flow (vph)	0	589	68	0	0	0	0	678	0	191	682	0
Turn Type	Split		Perm							Perm		
Protected Phases	2	2						4			4	
Permitted Phases			2							4		
Actuated Green, G (s)		19.0	19.0					27.1		27.1	27.1	
Effective Green, g (s)		19.0	19.0					27.1		27.1	27.1	
Actuated g/C Ratio		0.34	0.34					0.49		0.49	0.49	
Clearance Time (s)		4.5	4.5					4.5		4.5	4.5	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1727	546					1680		304	1741	
v/s Ratio Prot		c0.12						0.20			0.19	
v/s Ratio Perm			0.04							c0.31		
v/c Ratio		0.34	0.12					0.40		0.63	0.39	
Uniform Delay, d1		13.4	12.4					8.9		10.3	8.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.1		2.9	0.1	
Delay (s)		13.4	12.4					8.9		13.2	8.9	
Level of Service		B	B					A		B	A	
Approach Delay (s)		13.2			0.0			8.9			9.8	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	213	1195	408	0	0	0	0	870	222	238	1263	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5					4.5		4.5	4.5	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.97		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5047	1583					3431		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.16	1.00	
Satd. Flow (perm)		5047	1583					3431		294	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	1299	443	0	0	0	0	946	241	259	1373	0
RTOR Reduction (vph)	0	0	22	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1531	421	0	0	0	0	1185	0	259	1373	0
Turn Type	Split		Perm							Perm		
Protected Phases	2	2						4			4	
Permitted Phases			2							4		
Actuated Green, G (s)		19.4	19.4					31.5		31.5	31.5	
Effective Green, g (s)		19.4	19.4					31.5		31.5	31.5	
Actuated g/C Ratio		0.32	0.32					0.53		0.53	0.53	
Clearance Time (s)		4.5	4.5					4.5		4.5	4.5	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1635	513					1804		155	1861	
v/s Ratio Prot		c0.30						0.35			0.39	
v/s Ratio Perm			0.27							c0.88		
v/c Ratio		0.94	0.82					0.66		1.67	0.74	
Uniform Delay, d1		19.7	18.7					10.3		14.2	11.0	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		10.4	9.7					0.7		328.5	1.3	
Delay (s)		30.0	28.4					11.0		342.7	12.3	
Level of Service		C	C					B		F	B	
Approach Delay (s)		29.7			0.0			11.0			64.8	
Approach LOS		C			A			B			E	

Intersection Summary

HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	119	306	43	128	352	0	0	1032	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1863	1583	1770	3539			3539	1583
Flt Permitted				0.95	1.00	1.00	0.19	1.00			1.00	1.00
Satd. Flow (perm)				1770	1863	1583	357	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	129	333	47	139	383	0	0	1122	112
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	0	43
Lane Group Flow (vph)	0	0	0	129	333	24	139	383	0	0	1122	69
Turn Type				Split		Perm	Perm					Perm
Protected Phases				6	6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)				15.7	15.7	15.7	30.8	30.8			30.8	30.8
Effective Green, g (s)				15.7	15.7	15.7	30.8	30.8			30.8	30.8
Actuated g/C Ratio				0.29	0.29	0.29	0.56	0.56			0.56	0.56
Clearance Time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Vehicle Extension (s)				3.0	3.0	3.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)				506	533	453	200	1985			1985	888
v/s Ratio Prot				0.07	c0.18			0.11			0.32	
v/s Ratio Perm						0.02	c0.39					0.04
v/c Ratio				0.25	0.62	0.05	0.69	0.19			0.57	0.08
Uniform Delay, d1				15.1	17.0	14.2	8.7	5.9			7.7	5.5
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.3	2.3	0.0	12.6	0.1			0.6	0.1
Delay (s)				15.4	19.3	14.3	21.2	6.0			8.4	5.6
Level of Service				B	B	B	C	A			A	A
Approach Delay (s)		0.0			17.9			10.1			8.1	
Approach LOS		A			B			B			A	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	8.4
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	84	568	95	163	1298	0	0	1226	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1863	1583	1770	3539			3539	1583
Flt Permitted				0.95	1.00	1.00	0.13	1.00			1.00	1.00
Satd. Flow (perm)				1770	1863	1583	243	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	91	617	103	177	1411	0	0	1333	200
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	0	0	0	32
Lane Group Flow (vph)	0	0	0	91	617	84	177	1411	0	0	1333	168
Turn Type				Split		Perm	Perm					Perm
Protected Phases				6	6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)				24.8	24.8	24.8	46.8	46.8			46.8	46.8
Effective Green, g (s)				24.8	24.8	24.8	46.8	46.8			46.8	46.8
Actuated g/C Ratio				0.31	0.31	0.31	0.58	0.58			0.58	0.58
Clearance Time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Vehicle Extension (s)				3.0	3.0	3.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)				549	578	491	142	2070			2070	926
v/s Ratio Prot				0.05	c0.33			0.40			0.38	
v/s Ratio Perm						0.05	c0.73					0.11
v/c Ratio				0.17	1.07	0.17	1.25	0.68			0.64	0.18
Uniform Delay, d1				20.1	27.6	20.1	16.6	11.5			11.1	7.7
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1	56.7	0.2	156.4	1.2			1.0	0.2
Delay (s)				20.2	84.3	20.3	173.0	12.7			12.0	7.9
Level of Service				C	F	C	F	B			B	A
Approach Delay (s)		0.0			69.0			30.5			11.5	
Approach LOS		A			E			C			B	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	156	44	118	210	81	47	298	26	90	1054	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3497		1770	3490	
Flt Permitted	0.58	1.00	1.00	0.65	1.00	1.00	0.13	1.00		0.54	1.00	
Satd. Flow (perm)	1083	1863	1583	1210	1863	1583	247	3497		1008	3490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	170	48	128	228	88	51	324	28	98	1146	116
RTOR Reduction (vph)	0	0	32	0	0	59	0	11	0	0	13	0
Lane Group Flow (vph)	40	170	16	128	228	29	51	341	0	98	1249	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	19.0	19.0	19.0	19.0	19.0	19.0	30.3	30.3		30.3	30.3	
Effective Green, g (s)	19.0	19.0	19.0	19.0	19.0	19.0	30.3	30.3		30.3	30.3	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.52	0.52		0.52	0.52	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	354	609	518	396	609	518	129	1824		526	1820	
v/s Ratio Prot		0.09			c0.12			0.10			c0.36	
v/s Ratio Perm	0.04		0.01	0.11		0.02	0.21			0.10		
v/c Ratio	0.11	0.28	0.03	0.32	0.37	0.06	0.40	0.19		0.19	0.69	
Uniform Delay, d1	13.7	14.5	13.3	14.7	15.0	13.4	8.4	7.4		7.4	10.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.2	0.1	0.0	0.7	0.0		0.1	0.9	
Delay (s)	13.7	14.6	13.3	14.9	15.1	13.4	9.1	7.4		7.4	11.2	
Level of Service	B	B	B	B	B	B	A	A		A	B	
Approach Delay (s)		14.2			14.7			7.6			11.0	
Approach LOS		B			B			A			B	

Intersection Summary

HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	8.8
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	113	421	166	243	370	103	125	986	247	65	995	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3433		1770	3514	
Flt Permitted	0.39	1.00	1.00	0.33	1.00	1.00	0.14	1.00		0.13	1.00	
Satd. Flow (perm)	734	1863	1583	623	1863	1583	262	3433		248	3514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	458	180	264	402	112	136	1072	268	71	1082	53
RTOR Reduction (vph)	0	0	28	0	0	29	0	34	0	0	5	0
Lane Group Flow (vph)	123	458	152	264	402	83	136	1306	0	71	1130	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	26.2	26.2	26.2	26.2	26.2	26.2	30.0	30.0		30.0	30.0	
Effective Green, g (s)	26.2	26.2	26.2	26.2	26.2	26.2	30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.46	0.46		0.46	0.46	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	296	751	638	251	751	638	121	1584		114	1622	
v/s Ratio Prot		0.25			0.22			0.38			0.32	
v/s Ratio Perm	0.17		0.10	c0.42		0.05	c0.52			0.29		
v/c Ratio	0.42	0.61	0.24	1.05	0.54	0.13	1.12	0.82		0.62	0.70	
Uniform Delay, d1	13.9	15.4	12.8	19.4	14.8	12.2	17.5	15.2		13.2	13.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.0	0.1	71.1	0.4	0.0	119.0	3.5		7.4	1.1	
Delay (s)	14.3	16.3	12.9	90.5	15.1	12.3	136.5	18.7		20.6	15.0	
Level of Service	B	B	B	F	B	B	F	B		C	B	
Approach Delay (s)		15.2			40.3			29.5			15.3	
Approach LOS		B			D			C			B	

Intersection Summary

HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	39	205	38	0	0	0	21	307	74	307	1217	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	0.97		1.00	0.98	
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1848	1583				1770	3437		1770	3478	
Flt Permitted		0.99	1.00				0.13	1.00		0.51	1.00	
Satd. Flow (perm)		1848	1583				234	3437		949	3478	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	223	41	0	0	0	23	334	80	334	1323	174
RTOR Reduction (vph)	0	0	17	0	0	0	0	21	0	0	10	0
Lane Group Flow (vph)	0	265	24	0	0	0	23	393	0	334	1487	0
Turn Type	Split		Perm				Perm			Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		10.5	10.5				31.9	31.9		31.9	31.9	
Effective Green, g (s)		10.5	10.5				31.9	31.9		31.9	31.9	
Actuated g/C Ratio		0.20	0.20				0.62	0.62		0.62	0.62	
Clearance Time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2				4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)		376	322				145	2125		587	2150	
v/s Ratio Prot		c0.14						0.11			c0.43	
v/s Ratio Perm			0.02				0.10			0.35		
v/c Ratio		0.70	0.08				0.16	0.18		0.57	0.69	
Uniform Delay, d1		19.1	16.6				4.2	4.2		5.8	6.6	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.9	0.0				0.7	0.1		1.6	1.1	
Delay (s)		24.0	16.7				4.9	4.3		7.4	7.6	
Level of Service		C	B				A	A		A	A	
Approach Delay (s)		23.0			0.0			4.3			7.6	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	9.2
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	254	486	59	0	0	0	30	965	85	304	999	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	0.99		1.00	0.98	
Flt Protected		0.98	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1831	1583				1770	3496		1770	3457	
Flt Permitted		0.98	1.00				0.13	1.00		0.17	1.00	
Satd. Flow (perm)		1831	1583				248	3496		322	3457	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	276	528	64	0	0	0	33	1049	92	330	1086	198
RTOR Reduction (vph)	0	0	9	0	0	0	0	7	0	0	15	0
Lane Group Flow (vph)	0	804	55	0	0	0	33	1134	0	330	1269	0
Turn Type	Split		Perm				Perm			Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		34.4	34.4				56.4	56.4		56.4	56.4	
Effective Green, g (s)		34.4	34.4				56.4	56.4		56.4	56.4	
Actuated g/C Ratio		0.34	0.34				0.56	0.56		0.56	0.56	
Clearance Time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2				4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)		630	545				140	1972		182	1950	
v/s Ratio Prot		c0.44						0.32			0.37	
v/s Ratio Perm			0.04				0.13			c1.02		
v/c Ratio		1.28	0.10				0.24	0.58		1.81	0.65	
Uniform Delay, d1		32.8	22.3				11.0	14.1		21.8	15.0	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		136.3	0.0				1.2	0.5		386.8	0.9	
Delay (s)		169.1	22.3				12.2	14.6		408.6	15.9	
Level of Service		F	C				B	B		F	B	
Approach Delay (s)		158.3			0.0			14.5			96.2	
Approach LOS		F			A			B			F	

Intersection Summary

HCM Average Control Delay	84.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	903	0	337	623	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.1		4.1	4.6	
Lane Util. Factor		0.88		0.95	0.95	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		2787		3539	3539	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		2787		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	982	0	366	677	0
RTOR Reduction (vph)	0	541	0	0	0	0
Lane Group Flow (vph)	0	441	0	366	677	0
Turn Type		custom				
Protected Phases				6	4	
Permitted Phases		7				
Actuated Green, G (s)		15.4		10.7	14.9	
Effective Green, g (s)		15.4		10.7	14.9	
Actuated g/C Ratio		0.45		0.31	0.43	
Clearance Time (s)		4.1		4.1	4.6	
Vehicle Extension (s)		1.2		3.0	4.0	
Lane Grp Cap (vph)		1251		1104	1537	
v/s Ratio Prot				c0.10	c0.19	
v/s Ratio Perm		0.16				
v/c Ratio		0.35		0.33	0.44	
Uniform Delay, d1		6.2		9.1	6.8	
Progression Factor		1.00		1.00	1.00	
Incremental Delay, d2		0.1		0.2	0.3	
Delay (s)		6.2		9.2	7.1	
Level of Service		A		A	A	
Approach Delay (s)	6.2			9.2	7.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	34.3	Sum of lost time (s)	8.7
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	1123	0	1244	467	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.1		4.1	4.6	
Lane Util. Factor		0.88		0.95	0.95	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		2787		3539	3539	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		2787		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1221	0	1352	508	0
RTOR Reduction (vph)	0	840	0	0	0	0
Lane Group Flow (vph)	0	381	0	1352	508	0
Turn Type		custom				
Protected Phases				6	4	
Permitted Phases		7				
Actuated Green, G (s)		14.1		22.9	13.6	
Effective Green, g (s)		14.1		22.9	13.6	
Actuated g/C Ratio		0.31		0.51	0.30	
Clearance Time (s)		4.1		4.1	4.6	
Vehicle Extension (s)		1.2		3.0	4.0	
Lane Grp Cap (vph)		869		1793	1065	
v/s Ratio Prot				c0.38	c0.14	
v/s Ratio Perm		0.14				
v/c Ratio		0.44		0.75	0.48	
Uniform Delay, d1		12.4		8.9	12.9	
Progression Factor		1.00		1.00	1.00	
Incremental Delay, d2		0.1		1.8	0.5	
Delay (s)		12.5		10.7	13.4	
Level of Service		B		B	B	
Approach Delay (s)	12.5			10.7	13.4	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	8.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	603	9	0	530	0	0	0	0	434	920	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.95			0.95					0.91	0.91	1.00
Frt		1.00			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3531			3539					1610	3383	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3531			3539					1610	3383	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	655	10	0	576	0	0	0	0	472	1000	890
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	0	664	0	0	576	0	0	0	0	425	1047	866
Turn Type										Perm		Perm
Protected Phases		4			8						2	
Permitted Phases										2		2
Actuated Green, G (s)		14.9			14.9					35.9	35.9	35.9
Effective Green, g (s)		14.9			14.9					35.9	35.9	35.9
Actuated g/C Ratio		0.25			0.25					0.61	0.61	0.61
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		895			897					983	2065	966
v/s Ratio Prot		c0.19			0.16							
v/s Ratio Perm										0.26	0.31	c0.55
v/c Ratio		0.74			0.64					0.43	0.51	0.90
Uniform Delay, d1		20.2			19.6					6.1	6.5	9.9
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		3.3			1.6					0.3	0.2	10.8
Delay (s)		23.5			21.2					6.4	6.7	20.7
Level of Service		C			C					A	A	C
Approach Delay (s)		23.5			21.2			0.0			11.9	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1157	70	0	734	0	0	0	0	543	1084	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.95			0.95					0.91	0.91	1.00
Frt		0.99			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3509			3539					1610	3382	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3509			3539					1610	3382	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1258	76	0	798	0	0	0	0	590	1178	728
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	1327	0	0	798	0	0	0	0	531	1237	693
Turn Type										Perm		Perm
Protected Phases		4			8						2	
Permitted Phases										2		2
Actuated Green, G (s)		25.0			25.0					32.0	32.0	32.0
Effective Green, g (s)		25.0			25.0					32.0	32.0	32.0
Actuated g/C Ratio		0.38			0.38					0.49	0.49	0.49
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1350			1361					793	1665	779
v/s Ratio Prot		c0.38			0.23							
v/s Ratio Perm										0.33	0.37	c0.44
v/c Ratio		0.98			0.59					0.67	0.74	0.89
Uniform Delay, d1		19.8			15.9					12.5	13.2	14.9
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		20.4			0.7					2.2	1.8	12.4
Delay (s)		40.2			16.5					14.7	15.0	27.3
Level of Service		D			B					B	B	C
Approach Delay (s)		40.2			16.5			0.0			18.5	
Approach LOS		D			B			A			B	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑	↰	↱
Volume (vph)	133	248	0	413	212	473
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.1	4.1		4.1	4.1	4.1
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1583		3539	1770	1583
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	3539	1583		3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	270	0	449	230	514
RTOR Reduction (vph)	0	174	0	0	0	254
Lane Group Flow (vph)	145	96	0	449	230	260
Turn Type		Perm				Perm
Protected Phases	6			6	8	
Permitted Phases		6				8
Actuated Green, G (s)	20.8	20.8		20.8	29.7	29.7
Effective Green, g (s)	20.8	20.8		20.8	29.7	29.7
Actuated g/C Ratio	0.35	0.35		0.35	0.51	0.51
Clearance Time (s)	4.1	4.1		4.1	4.1	4.1
Vehicle Extension (s)	3.0	3.0		3.0	0.2	0.2
Lane Grp Cap (vph)	1254	561		1254	896	801
v/s Ratio Prot	0.04			c0.13	0.13	
v/s Ratio Perm		0.06				c0.16
v/c Ratio	0.12	0.17		0.36	0.26	0.32
Uniform Delay, d1	12.8	13.0		14.0	8.2	8.6
Progression Factor	1.00	1.00		0.61	1.00	1.00
Incremental Delay, d2	0.0	0.1		0.1	0.1	0.1
Delay (s)	12.8	13.2		8.8	8.3	8.7
Level of Service	B	B		A	A	A
Approach Delay (s)	13.0			8.8	8.5	
Approach LOS	B			A	A	

Intersection Summary

HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	8.2
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑	↰	↱
Volume (vph)	611	730	0	341	197	546
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.1	4.1		4.1	4.1	4.1
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1583		3539	1770	1583
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	3539	1583		3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	664	793	0	371	214	593
RTOR Reduction (vph)	0	529	0	0	0	33
Lane Group Flow (vph)	664	264	0	371	214	560
Turn Type		Perm				Perm
Protected Phases	6			6	8	
Permitted Phases		6				8
Actuated Green, G (s)	26.6	26.6		26.6	45.2	45.2
Effective Green, g (s)	26.6	26.6		26.6	45.2	45.2
Actuated g/C Ratio	0.33	0.33		0.33	0.57	0.57
Clearance Time (s)	4.1	4.1		4.1	4.1	4.1
Vehicle Extension (s)	3.0	3.0		3.0	0.2	0.2
Lane Grp Cap (vph)	1177	526		1177	1000	894
v/s Ratio Prot	c0.19			0.10	0.12	
v/s Ratio Perm		0.17				c0.35
v/c Ratio	0.56	0.50		0.32	0.21	0.63
Uniform Delay, d1	21.9	21.4		19.9	8.6	11.7
Progression Factor	1.00	1.00		0.62	1.00	1.00
Incremental Delay, d2	0.6	0.8		0.1	0.0	1.0
Delay (s)	22.6	22.1		12.5	8.6	12.7
Level of Service	C	C		B	A	B
Approach Delay (s)	22.3			12.5	11.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	394	533	501	531	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1	4.1	4.1		
Lane Util. Factor	0.97	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	3776	3893	3893	1742		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	3776	3893	3893	1742		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	428	579	545	577	0	0
RTOR Reduction (vph)	0	0	0	403	0	0
Lane Group Flow (vph)	428	579	545	174	0	0
Turn Type	Prot			Perm		
Protected Phases	3	8	4			
Permitted Phases				4		
Actuated Green, G (s)	8.3	29.7	17.7	17.7		
Effective Green, g (s)	8.3	29.7	17.7	17.7		
Actuated g/C Ratio	0.14	0.51	0.30	0.30		
Clearance Time (s)	3.7	4.1	4.1	4.1		
Vehicle Extension (s)	8.0	0.2	4.1	4.1		
Lane Grp Cap (vph)	534	1970	1174	525		
v/s Ratio Prot	c0.11	0.15	c0.14			
v/s Ratio Perm				0.10		
v/c Ratio	0.80	0.29	0.46	0.33		
Uniform Delay, d1	24.4	8.4	16.6	15.9		
Progression Factor	1.00	1.00	1.15	2.37		
Incremental Delay, d2	10.9	0.0	0.4	0.5		
Delay (s)	35.3	8.4	19.6	38.2		
Level of Service	D	A	B	D		
Approach Delay (s)		19.9	29.2		0.0	
Approach LOS		B	C		A	

Intersection Summary

HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	32.7
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	981	757	704	520	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1	4.1	4.1		
Lane Util. Factor	0.97	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	3776	3893	3893	1742		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	3776	3893	3893	1742		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1066	823	765	565	0	0
RTOR Reduction (vph)	0	0	0	431	0	0
Lane Group Flow (vph)	1066	823	765	134	0	0
Turn Type	Prot			Perm		
Protected Phases	3	8	4			
Permitted Phases				4		
Actuated Green, G (s)	22.5	45.2	19.0	19.0		
Effective Green, g (s)	22.5	45.2	19.0	19.0		
Actuated g/C Ratio	0.28	0.57	0.24	0.24		
Clearance Time (s)	3.7	4.1	4.1	4.1		
Vehicle Extension (s)	8.0	0.2	4.1	4.1		
Lane Grp Cap (vph)	1062	2200	925	414		
v/s Ratio Prot	c0.28	0.21	c0.20			
v/s Ratio Perm				0.08		
v/c Ratio	1.00	0.37	0.83	0.32		
Uniform Delay, d1	28.8	9.6	28.9	25.2		
Progression Factor	1.00	1.00	1.15	2.50		
Incremental Delay, d2	28.5	0.0	5.5	0.6		
Delay (s)	57.3	9.6	38.7	63.6		
Level of Service	E	A	D	E		
Approach Delay (s)		36.5	49.3		0.0	
Approach LOS		D	D		A	

Intersection Summary

HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	38.5
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
34: Tulare St & First Steet

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	347	596	88	93	712	164	388	274	27	275	410	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3440		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3440		3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	377	648	96	101	774	178	422	298	29	299	446	305
RTOR Reduction (vph)	0	0	46	0	20	0	0	0	22	0	0	156
Lane Group Flow (vph)	377	648	50	101	932	0	422	298	7	299	446	149
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			2
Actuated Green, G (s)	9.0	33.3	33.3	5.7	29.7		10.0	21.4	21.4	11.6	22.7	22.7
Effective Green, g (s)	9.0	33.3	33.3	5.7	29.7		10.0	21.4	21.4	11.6	22.7	22.7
Actuated g/C Ratio	0.10	0.37	0.37	0.06	0.33		0.11	0.24	0.24	0.13	0.25	0.25
Clearance Time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.2		2.0	5.0	5.0	2.0	5.2	5.2
Lane Grp Cap (vph)	346	1321	591	219	1145		385	849	380	446	901	403
v/s Ratio Prot	c0.11	c0.18		0.03	c0.27		c0.12	0.08		0.09	c0.13	
v/s Ratio Perm			0.03						0.00			0.09
v/c Ratio	1.09	0.49	0.09	0.46	0.81		1.10	0.35	0.02	0.67	0.50	0.37
Uniform Delay, d1	40.1	21.4	18.1	40.3	27.2		39.6	28.1	25.9	37.0	28.4	27.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	74.5	0.6	0.1	0.6	5.2		74.3	0.5	0.0	3.1	1.0	1.3
Delay (s)	114.6	22.0	18.2	40.8	32.4		113.9	28.7	25.9	40.1	29.3	28.7
Level of Service	F	C	B	D	C		F	C	C	D	C	C
Approach Delay (s)		52.9			33.2			76.6			32.2	
Approach LOS		D			C			E			C	

Intersection Summary

HCM Average Control Delay	46.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	17.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	566	853	174	138	701	182	359	765	48	451	789	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3430		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3430		3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	615	927	189	150	762	198	390	832	52	490	858	189
RTOR Reduction (vph)	0	0	61	0	22	0	0	0	19	0	0	100
Lane Group Flow (vph)	615	927	128	150	938	0	390	832	33	490	858	89
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			2
Actuated Green, G (s)	18.0	39.1	39.1	8.2	29.0		12.0	25.5	25.5	15.0	28.2	28.2
Effective Green, g (s)	18.0	39.1	39.1	8.2	29.0		12.0	25.5	25.5	15.0	28.2	28.2
Actuated g/C Ratio	0.17	0.37	0.37	0.08	0.28		0.11	0.24	0.24	0.14	0.27	0.27
Clearance Time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.2		2.0	5.0	5.0	2.0	5.2	5.2
Lane Grp Cap (vph)	589	1318	589	268	947		392	859	384	490	950	425
v/s Ratio Prot	c0.18	0.26		0.04	c0.27		0.11	0.24		c0.14	c0.24	
v/s Ratio Perm			0.08						0.02			0.06
v/c Ratio	1.04	0.70	0.22	0.56	0.99		0.99	0.97	0.09	1.00	0.90	0.21
Uniform Delay, d1	43.5	28.0	22.5	46.7	37.9		46.5	39.4	30.7	45.0	37.1	29.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	49.1	2.2	0.4	1.4	26.8		43.8	23.4	0.2	40.7	12.5	0.5
Delay (s)	92.6	30.2	22.9	48.1	64.7		90.3	62.7	30.9	85.7	49.6	30.3
Level of Service	F	C	C	D	E		F	E	C	F	D	C
Approach Delay (s)		51.6			62.4			69.9			58.7	
Approach LOS		D			E			E			E	

Intersection Summary

HCM Average Control Delay	59.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	862	94	68	199	147	8	106	9	83	64	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.91			0.95			1.00			1.00	
Frt		0.99			0.95			0.99			0.91	
Flt Protected		1.00			0.99			1.00			0.99	
Satd. Flow (prot)		5010			3323			1838			1686	
Flt Permitted		1.00			0.72			0.97			0.91	
Satd. Flow (perm)		5010			2396			1785			1542	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	937	102	74	216	160	9	115	10	90	70	278
RTOR Reduction (vph)	0	22	0	0	81	0	0	5	0	0	103	0
Lane Group Flow (vph)	0	1017	0	0	369	0	0	129	0	0	335	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		29.0			29.0			21.0			21.0	
Effective Green, g (s)		29.0			29.0			21.0			21.0	
Actuated g/C Ratio		0.49			0.49			0.36			0.36	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)		2463			1178			635			549	
v/s Ratio Prot		c0.20										
v/s Ratio Perm					0.15			0.07			c0.22	
v/c Ratio		0.41			0.31			0.20			0.61	
Uniform Delay, d1		9.6			9.0			13.2			15.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			0.1			0.1			1.4	
Delay (s)		9.6			9.1			13.3			17.0	
Level of Service		A			A			B			B	
Approach Delay (s)		9.6			9.1			13.3			17.0	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	110	766	27	31	389	217	121	147	33	41	8	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.91			0.95			1.00			1.00	
Frt	1.00	0.99			0.95			0.99			0.90	
Flt Protected	0.95	1.00			1.00			0.98			0.99	
Satd. Flow (prot)	1770	5060			3350			1799			1664	
Flt Permitted	0.35	1.00			0.89			0.81			0.88	
Satd. Flow (perm)	645	5060			2977			1493			1482	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	833	29	34	423	236	132	160	36	45	9	132
RTOR Reduction (vph)	0	6	0	0	112	0	0	7	0	0	85	0
Lane Group Flow (vph)	120	856	0	0	581	0	0	321	0	0	101	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	29.0	29.0			29.0			21.0			21.0	
Effective Green, g (s)	29.0	29.0			29.0			21.0			21.0	
Actuated g/C Ratio	0.49	0.49			0.49			0.36			0.36	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	0.2	0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)	317	2487			1463			531			527	
v/s Ratio Prot		0.17										
v/s Ratio Perm	0.19				c0.20			c0.21			0.07	
v/c Ratio	0.38	0.34			0.40			0.60			0.19	
Uniform Delay, d1	9.4	9.2			9.5			15.6			13.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.0			0.1			1.3			0.1	
Delay (s)	9.6	9.2			9.5			16.9			13.2	
Level of Service	A	A			A			B			B	
Approach Delay (s)		9.3			9.5			16.9			13.2	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	128	21	49	40	25	39	83	1210	31	93	910	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1693		1770	3526		1770	3474	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.21	1.00		0.15	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1693		383	3526		273	3474	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	23	53	43	27	42	90	1315	34	101	989	138
RTOR Reduction (vph)	0	0	46	0	38	0	0	1	0	0	10	0
Lane Group Flow (vph)	139	23	7	43	31	0	90	1348	0	101	1117	0
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	8.1	10.4	10.4	4.1	6.4		48.3	48.3		48.3	48.3	
Effective Green, g (s)	8.1	10.4	10.4	4.1	6.4		48.3	48.3		48.3	48.3	
Actuated g/C Ratio	0.11	0.14	0.14	0.05	0.09		0.64	0.64		0.64	0.64	
Clearance Time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	191	258	219	97	144		246	2265		175	2231	
v/s Ratio Prot	c0.08	c0.01		0.02	c0.02			c0.38			0.32	
v/s Ratio Perm			0.00				0.24			0.37		
v/c Ratio	0.73	0.09	0.03	0.44	0.21		0.37	0.59		0.58	0.50	
Uniform Delay, d1	32.5	28.3	28.0	34.4	32.1		6.3	7.8		7.6	7.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.1	0.1	0.0	1.2	0.3		2.6	0.8		8.9	0.5	
Delay (s)	43.6	28.3	28.1	35.6	32.3		8.9	8.6		16.5	7.6	
Level of Service	D	C	C	D	C		A	A		B	A	
Approach Delay (s)		38.1			33.6			8.6			8.3	
Approach LOS		D			C			A			A	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	16.6
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
36: C Street & Fresno

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	253	99	338	379	189	77	158	1205	50	104	1321	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1782		1770	3518		1770	3472	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.07	1.00		0.10	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1782		125	3518		190	3472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	275	108	367	412	205	84	172	1310	54	113	1436	207
RTOR Reduction (vph)	0	0	23	0	13	0	0	3	0	0	10	0
Lane Group Flow (vph)	275	108	344	412	276	0	172	1361	0	113	1633	0
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	15.0	21.8	21.8	16.0	22.8		59.8	59.8		59.8	59.8	
Effective Green, g (s)	15.0	21.8	21.8	16.0	22.8		59.8	59.8		59.8	59.8	
Actuated g/C Ratio	0.14	0.20	0.20	0.15	0.21		0.54	0.54		0.54	0.54	
Clearance Time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	241	369	314	257	369		68	1913		103	1888	
v/s Ratio Prot	0.16	0.06		c0.23	0.15			0.39			0.47	
v/s Ratio Perm			c0.22				c1.38			0.59		
v/c Ratio	1.14	0.29	1.09	1.60	0.75		2.53	0.71		1.10	0.86	
Uniform Delay, d1	47.5	37.5	44.1	47.0	40.9		25.1	18.7		25.1	21.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	101.3	0.2	78.6	288.9	7.0		729.5	1.8		117.3	5.0	
Delay (s)	148.8	37.7	122.7	335.9	47.9		754.6	20.5		142.4	26.6	
Level of Service	F	D	F	F	D		F	C		F	C	
Approach Delay (s)		120.0			217.2			102.7			34.1	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM Average Control Delay	97.0	HCM Level of Service	F
HCM Volume to Capacity ratio	2.06		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	630	485	409	0	0	0	0	863	458	261	639	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00	1.00					0.95		1.00	0.95	
Frt	1.00	1.00	0.85					0.95		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583					3355		1770	3539	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583					3355		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	685	527	445	0	0	0	0	938	498	284	695	0
RTOR Reduction (vph)	0	0	147	0	0	0	0	63	0	0	0	0
Lane Group Flow (vph)	685	527	298	0	0	0	0	1373	0	284	695	0
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	37.3	37.3	37.3					41.8		15.8	62.8	
Effective Green, g (s)	37.3	37.3	37.3					41.8		15.8	62.8	
Actuated g/C Ratio	0.34	0.34	0.34					0.38		0.14	0.57	
Clearance Time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Vehicle Extension (s)	6.2	6.2	6.2					0.2		2.0	0.2	
Lane Grp Cap (vph)	600	632	537					1275		254	2020	
v/s Ratio Prot	c0.39	0.28						c0.41		c0.16	0.20	
v/s Ratio Perm			0.19									
v/c Ratio	1.14	0.83	0.56					1.08		1.12	0.34	
Uniform Delay, d1	36.4	33.5	29.6					34.1		47.1	12.6	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	82.4	10.8	2.8					48.6		91.9	0.0	
Delay (s)	118.8	44.3	32.4					82.7		139.0	12.6	
Level of Service	F	D	C					F		F	B	
Approach Delay (s)		71.9			0.0			82.7			49.3	
Approach LOS		E			A			F			D	

Intersection Summary			
HCM Average Control Delay	70.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	120.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	247	721	790	0	0	0	0	1003	479	390	741	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00	1.00					0.95		1.00	0.95	
Frt	1.00	1.00	0.85					0.95		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583					3368		1770	3539	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583					3368		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	784	859	0	0	0	0	1090	521	424	805	0
RTOR Reduction (vph)	0	0	124	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	268	784	735	0	0	0	0	1581	0	424	805	0
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	50.3	50.3	50.3					56.8		27.8	89.8	
Effective Green, g (s)	50.3	50.3	50.3					56.8		27.8	89.8	
Actuated g/C Ratio	0.34	0.34	0.34					0.38		0.19	0.60	
Clearance Time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Vehicle Extension (s)	6.2	6.2	6.2					0.2		2.0	0.2	
Lane Grp Cap (vph)	594	625	531					1275		328	2119	
v/s Ratio Prot	0.15	0.42						c0.47		c0.24	0.23	
v/s Ratio Perm			c0.46									
v/c Ratio	0.45	1.25	1.38					1.24		1.29	0.38	
Uniform Delay, d1	39.0	49.9	49.9					46.6		61.1	15.6	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	1.6	127.3	184.1					114.7		152.6	0.0	
Delay (s)	40.7	177.1	233.9					161.3		213.7	15.7	
Level of Service	D	F	F					F		F	B	
Approach Delay (s)		183.5			0.0			161.3			84.0	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	150.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	134.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	352	517	443	643	857	0	0	539	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3469	1583	1770	3539			3539	1583
Flt Permitted					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					3469	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	383	562	482	699	932	0	0	586	260
RTOR Reduction (vph)	0	0	0	0	0	103	0	0	0	0	0	72
Lane Group Flow (vph)	0	0	0	0	945	379	699	932	0	0	586	188
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)					32.0	32.0	41.3	65.0			20.0	20.0
Effective Green, g (s)					32.0	32.0	41.3	65.0			20.0	20.0
Actuated g/C Ratio					0.30	0.30	0.38	0.60			0.19	0.19
Clearance Time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Vehicle Extension (s)					5.0	5.0	2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					1032	471	679	2138			658	294
v/s Ratio Prot					c0.27		c0.40	0.26			c0.17	
v/s Ratio Perm						0.24						0.12
v/c Ratio					0.92	0.80	1.03	0.44			0.89	0.64
Uniform Delay, d1					36.5	34.9	33.1	11.4			42.7	40.5
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					12.9	10.9	42.3	0.1			13.9	3.5
Delay (s)					49.4	45.8	75.4	11.5			56.7	44.0
Level of Service					D	D	E	B			E	D
Approach Delay (s)		0.0			48.2			38.9			52.8	
Approach LOS		A			D			D			D	

Intersection Summary

HCM Average Control Delay	45.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	107.6	Sum of lost time (s)	14.3
Intersection Capacity Utilization	120.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	335	511	609	647	594	0	0	786	1003
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3470	1583	1770	3539			3539	1583
Flt Permitted					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					3470	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	364	555	662	703	646	0	0	854	1090
RTOR Reduction (vph)	0	0	0	0	0	253	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	0	919	409	703	646	0	0	854	1072
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)					34.6	34.6	36.3	104.8			64.8	64.8
Effective Green, g (s)					34.6	34.6	36.3	104.8			64.8	64.8
Actuated g/C Ratio					0.23	0.23	0.24	0.70			0.43	0.43
Clearance Time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Vehicle Extension (s)					5.0	5.0	2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					800	365	428	2473			1529	684
v/s Ratio Prot					c0.26		c0.40	0.18			0.24	
v/s Ratio Perm						0.26						c0.68
v/c Ratio					1.15	1.12	1.64	0.26			0.56	1.57
Uniform Delay, d1					57.7	57.7	56.9	8.3			31.9	42.6
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					81.3	83.8	299.5	0.0			0.3	262.2
Delay (s)					139.0	141.5	356.4	8.4			32.1	304.8
Level of Service					F	F	F	A			C	F
Approach Delay (s)		0.0			140.0			189.7			185.0	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM Average Control Delay	171.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	134.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	63	185	132	47	164	29	0	1088	29	0	482	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Lane Util. Factor	1.00	0.95	1.00		0.95			0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.98			1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99			1.00			1.00	1.00
Satd. Flow (prot)	1770	3539	1583		3441			3525			3539	1583
Flt Permitted	0.59	1.00	1.00		0.85			1.00			1.00	1.00
Satd. Flow (perm)	1100	3539	1583		2955			3525			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	201	143	51	178	32	0	1183	32	0	524	132
RTOR Reduction (vph)	0	0	115	0	22	0	0	2	0	0	0	48
Lane Group Flow (vph)	68	201	28	0	239	0	0	1213	0	0	524	84
Turn Type	Perm		Perm	Perm								Perm
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4								2
Actuated Green, G (s)	9.7	9.7	9.7		9.7			32.0			32.0	32.0
Effective Green, g (s)	9.7	9.7	9.7		9.7			32.0			32.0	32.0
Actuated g/C Ratio	0.19	0.19	0.19		0.19			0.63			0.63	0.63
Clearance Time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Vehicle Extension (s)	2.0	2.0	2.0		2.0			5.0			5.0	5.0
Lane Grp Cap (vph)	212	681	305		569			2238			2247	1005
v/s Ratio Prot		0.06						c0.34			0.15	
v/s Ratio Perm	0.06		0.02		c0.08							0.05
v/c Ratio	0.32	0.30	0.09		0.42			0.54			0.23	0.08
Uniform Delay, d1	17.5	17.4	16.7		17.9			5.1			3.9	3.5
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0		0.2			0.5			0.1	0.1
Delay (s)	17.8	17.5	16.8		18.1			5.6			4.1	3.6
Level of Service	B	B	B		B			A			A	A
Approach Delay (s)		17.3			18.1			5.6			4.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	8.7
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	79	640	97	107	633	68	0	785	88	0	1406	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Lane Util. Factor	1.00	0.95	1.00		0.95			0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.99			0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99			1.00			1.00	1.00
Satd. Flow (prot)	1770	3539	1583		3472			3486			3539	1583
Flt Permitted	0.21	1.00	1.00		0.70			1.00			1.00	1.00
Satd. Flow (perm)	385	3539	1583		2443			3486			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	696	105	116	688	74	0	853	96	0	1528	346
RTOR Reduction (vph)	0	0	8	0	10	0	0	13	0	0	0	57
Lane Group Flow (vph)	86	696	97	0	868	0	0	936	0	0	1528	289
Turn Type	Perm		Perm	Perm								Perm
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4								2
Actuated Green, G (s)	25.1	25.1	25.1		25.1			30.6			30.6	30.6
Effective Green, g (s)	25.1	25.1	25.1		25.1			30.6			30.6	30.6
Actuated g/C Ratio	0.39	0.39	0.39		0.39			0.48			0.48	0.48
Clearance Time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Vehicle Extension (s)	2.0	2.0	2.0		2.0			5.0			5.0	5.0
Lane Grp Cap (vph)	150	1379	617		952			1656			1682	752
v/s Ratio Prot		0.20						0.27			c0.43	
v/s Ratio Perm	0.22		0.06		c0.36							0.18
v/c Ratio	0.57	0.50	0.16		0.91			0.57			0.91	0.38
Uniform Delay, d1	15.4	14.9	12.8		18.6			12.1			15.6	10.8
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	3.3	0.1	0.0		12.4			0.7			8.0	0.7
Delay (s)	18.7	15.0	12.8		31.0			12.9			23.6	11.5
Level of Service	B	B	B		C			B			C	B
Approach Delay (s)		15.1			31.0			12.9			21.4	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	8.7
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL2	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	84	23	19	14	1	3	57	72	751	82	106	511
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Lane Util. Factor	1.00	1.00			1.00	1.00			0.95		1.00	1.00
Frt	1.00	0.93			1.00	0.86			0.99		1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00			1.00		0.95	1.00
Satd. Flow (prot)	1770	1735			1947	1596			3477		1770	1863
Flt Permitted	0.89	1.00			0.89	1.00			0.88		0.28	1.00
Satd. Flow (perm)	1656	1735			1821	1596			3065		522	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	25	21	15	1	3	62	78	816	89	115	555
RTOR Reduction (vph)	0	0	0	0	0	55	0	0	7	0	0	0
Lane Group Flow (vph)	91	46	0	0	16	10	0	0	976	0	115	555
Turn Type	Perm			Perm	Perm			Perm			Perm	
Protected Phases		4				4			2			2
Permitted Phases	4			4	4			2			2	
Actuated Green, G (s)	4.5	4.5			4.5	4.5			23.3		23.3	23.3
Effective Green, g (s)	4.5	4.5			4.5	4.5			23.3		23.3	23.3
Actuated g/C Ratio	0.12	0.12			0.12	0.12			0.62		0.62	0.62
Clearance Time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Vehicle Extension (s)	0.2	0.2			0.2	0.2			0.2		0.2	0.2
Lane Grp Cap (vph)	199	209			219	192			1909		325	1161
v/s Ratio Prot		0.03				0.01						0.30
v/s Ratio Perm	c0.05				0.01				c0.32		0.22	
v/c Ratio	0.46	0.22			0.07	0.05			0.51		0.35	0.48
Uniform Delay, d1	15.3	14.9			14.6	14.6			3.9		3.4	3.8
Progression Factor	1.00	1.00			1.00	1.00			1.00		1.00	1.00
Incremental Delay, d2	0.6	0.2			0.1	0.0			0.1		0.2	0.1
Delay (s)	15.9	15.1			14.7	14.6			4.0		3.7	3.9
Level of Service	B	B			B	B			A		A	A
Approach Delay (s)		15.6				14.6			4.0			3.7
Approach LOS		B				B			A			A

Intersection Summary

HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	37.4	Sum of lost time (s)	9.6
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SWR	SWR2
Lane Configurations		
Volume (vph)	5	117
Ideal Flow (vphpl)	1900	1900
Lane Width	15	12
Total Lost time (s)	4.8	
Lane Util. Factor	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	1742	
Flt Permitted	1.00	
Satd. Flow (perm)	1742	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	5	127
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	84	0
Turn Type	Perm	
Protected Phases		
Permitted Phases	2	
Actuated Green, G (s)	23.3	
Effective Green, g (s)	23.3	
Actuated g/C Ratio	0.62	
Clearance Time (s)	4.8	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	1085	
v/s Ratio Prot		
v/s Ratio Perm	0.05	
v/c Ratio	0.08	
Uniform Delay, d1	2.8	
Progression Factor	1.00	
Incremental Delay, d2	0.0	
Delay (s)	2.8	
Level of Service	A	
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	SEL	SET	SER	NWL2	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	139	8	63	117	4	90	186	80	636	39	172	1020
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Lane Util. Factor	1.00	1.00			1.00	1.00			0.95		1.00	1.00
Frt	1.00	0.87			1.00	0.90			0.99		1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00			0.99		0.95	1.00
Satd. Flow (prot)	1770	1616			1947	1675			3493		1770	1863
Flt Permitted	0.32	1.00			0.71	1.00			0.59		0.32	1.00
Satd. Flow (perm)	604	1616			1448	1675			2060		593	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	9	68	127	4	98	202	87	691	42	187	1109
RTOR Reduction (vph)	0	0	0	0	0	95	0	0	3	0	0	0
Lane Group Flow (vph)	151	77	0	0	131	205	0	0	817	0	187	1109
Turn Type	Perm			Perm	Perm			Perm			Perm	
Protected Phases		4				4			2			2
Permitted Phases	4			4	4			2			2	
Actuated Green, G (s)	17.2	17.2			17.2	17.2			52.1		52.1	52.1
Effective Green, g (s)	17.2	17.2			17.2	17.2			52.1		52.1	52.1
Actuated g/C Ratio	0.22	0.22			0.22	0.22			0.66		0.66	0.66
Clearance Time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Vehicle Extension (s)	0.2	0.2			0.2	0.2			0.2		0.2	0.2
Lane Grp Cap (vph)	132	352			316	365			1360		392	1230
v/s Ratio Prot		0.05				0.12						c0.60
v/s Ratio Perm	c0.25				0.09				0.40		0.32	
v/c Ratio	1.14	0.22			0.41	0.56			0.89dl		0.48	0.90
Uniform Delay, d1	30.9	25.3			26.5	27.5			7.5		6.6	11.2
Progression Factor	1.00	1.00			1.00	1.00			1.00		1.00	1.00
Incremental Delay, d2	122.2	0.1			0.3	1.2			0.5		0.3	9.1
Delay (s)	153.1	25.4			26.8	28.7			8.1		7.0	20.4
Level of Service	F	C			C	C			A		A	C
Approach Delay (s)		110.0				28.1			8.1			14.6
Approach LOS		F				C			A			B

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	9.6
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		

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

Movement	SWR	SWR2
Lane Configurations		
Volume (vph)	37	494
Ideal Flow (vphpl)	1900	1900
Lane Width	15	12
Total Lost time (s)	4.8	
Lane Util. Factor	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	1742	
Flt Permitted	1.00	
Satd. Flow (perm)	1742	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	40	537
RTOR Reduction (vph)	182	0
Lane Group Flow (vph)	395	0
Turn Type	Perm	
Protected Phases		
Permitted Phases	2	
Actuated Green, G (s)	52.1	
Effective Green, g (s)	52.1	
Actuated g/C Ratio	0.66	
Clearance Time (s)	4.8	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	1150	
v/s Ratio Prot		
v/s Ratio Perm	0.23	
v/c Ratio	0.34	
Uniform Delay, d1	5.9	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	6.0	
Level of Service	A	
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	214	211	180	99	265	204	149	611	92	64	459	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	0.93		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1734		1770	3308		1770	3470		1770	3427	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1734		1770	3308		1770	3470		1770	3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	233	229	196	108	288	222	162	664	100	70	499	134
RTOR Reduction (vph)	0	36	0	0	165	0	0	14	0	0	29	0
Lane Group Flow (vph)	233	389	0	108	345	0	162	750	0	70	604	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	11.3	25.6		6.3	20.6		9.0	25.9		6.0	22.9	
Effective Green, g (s)	11.3	25.6		6.3	20.6		9.0	25.9		6.0	22.9	
Actuated g/C Ratio	0.14	0.32		0.08	0.26		0.11	0.32		0.07	0.28	
Clearance Time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	249	552		139	848		198	1118		132	976	
v/s Ratio Prot	c0.13	c0.22		0.06	0.10		c0.09	c0.22		0.04	0.18	
v/s Ratio Perm												
v/c Ratio	0.94	0.70		0.78	0.41		0.82	0.67		0.53	0.62	
Uniform Delay, d1	34.2	24.1		36.4	24.8		34.9	23.6		35.8	25.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	39.5	5.1		23.4	0.7		22.4	2.1		4.0	1.7	
Delay (s)	73.7	29.2		59.7	25.5		57.3	25.7		39.9	26.7	
Level of Service	E	C		E	C		E	C		D	C	
Approach Delay (s)		44.9			31.5			31.2			28.0	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	12.4
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	106	302	214	203	441	194	258	663	136	183	1052	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.95		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1747		1770	3377		1770	3449		1770	3488	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1747		1770	3377		1770	3449		1770	3488	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	328	233	221	479	211	280	721	148	199	1143	123
RTOR Reduction (vph)	0	24	0	0	47	0	0	17	0	0	8	0
Lane Group Flow (vph)	115	537	0	221	643	0	280	852	0	199	1258	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.6	31.8		10.9	33.1		14.9	32.5		13.2	30.8	
Effective Green, g (s)	9.6	31.8		10.9	33.1		14.9	32.5		13.2	30.8	
Actuated g/C Ratio	0.09	0.30		0.10	0.32		0.14	0.31		0.13	0.29	
Clearance Time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	162	529		184	1065		251	1068		223	1023	
v/s Ratio Prot	0.06	c0.31		c0.12	0.19		c0.16	0.25		0.11	c0.36	
v/s Ratio Perm												
v/c Ratio	0.71	1.01		1.20	0.60		1.12	0.80		0.89	1.23	
Uniform Delay, d1	46.3	36.6		47.0	30.4		45.0	33.2		45.2	37.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.3	42.8		130.9	1.4		91.4	4.9		32.9	112.2	
Delay (s)	59.7	79.4		177.9	31.8		136.4	38.1		78.1	149.3	
Level of Service	E	E		F	C		F	D		E	F	
Approach Delay (s)		76.0			67.3			62.1			139.6	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	92.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	126	893	102	0	0	0	0	420	213	246	593	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5054	1583					3360		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.35	1.00	
Satd. Flow (perm)		5054	1583					3360		657	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	971	111	0	0	0	0	457	232	267	645	0
RTOR Reduction (vph)	0	0	74	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	1108	37	0	0	0	0	679	0	267	645	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			2	
Permitted Phases			4							2		
Actuated Green, G (s)		20.0	20.0					31.2		31.2	31.2	
Effective Green, g (s)		20.0	20.0					31.2		31.2	31.2	
Actuated g/C Ratio		0.34	0.34					0.52		0.52	0.52	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1696	531					1759		344	1853	
v/s Ratio Prot		c0.22						0.20			0.18	
v/s Ratio Perm			0.02							c0.41		
v/c Ratio		0.65	0.07					0.39		0.78	0.35	
Uniform Delay, d1		16.8	13.5					8.5		11.4	8.3	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0					0.1		9.6	0.0	
Delay (s)		17.5	13.5					8.5		21.0	8.3	
Level of Service		B	B					A		C	A	
Approach Delay (s)		17.2			0.0			8.5			12.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	8.4
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	228	982	78	0	0	0	0	860	255	327	1139	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.97		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5038	1583					3418		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.18	1.00	
Satd. Flow (perm)		5038	1583					3418		326	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	1067	85	0	0	0	0	935	277	355	1238	0
RTOR Reduction (vph)	0	0	39	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1315	46	0	0	0	0	1210	0	355	1238	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			2	
Permitted Phases			4							2		
Actuated Green, G (s)		20.0	20.0					46.6		46.6	46.6	
Effective Green, g (s)		20.0	20.0					46.6		46.6	46.6	
Actuated g/C Ratio		0.27	0.27					0.62		0.62	0.62	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1343	422					2124		203	2199	
v/s Ratio Prot		c0.26						0.35			0.35	
v/s Ratio Perm			0.03							c1.09		
v/c Ratio		0.98	0.11					0.57		1.75	0.56	
Uniform Delay, d1		27.3	20.8					8.3		14.2	8.3	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		19.4	0.0					0.2		356.5	0.2	
Delay (s)		46.7	20.8					8.5		370.7	8.5	
Level of Service		D	C					A		F	A	
Approach Delay (s)		45.1			0.0			8.5			89.2	
Approach LOS		D			A			A			F	

Intersection Summary			
HCM Average Control Delay	51.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	64	221	90	59	626	0	0	1015	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	15	12	12	15	15	12	12
Total Lost time (s)					4.2		4.2	4.2			4.2	4.2
Lane Util. Factor					0.95		1.00	0.95			0.95	1.00
Frt					0.96		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					3721		1770	3539			3539	1583
Flt Permitted					0.99		0.16	1.00			1.00	1.00
Satd. Flow (perm)					3721		291	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	70	240	98	64	680	0	0	1103	218
RTOR Reduction (vph)	0	0	0	0	50	0	0	0	0	0	0	117
Lane Group Flow (vph)	0	0	0	0	358	0	64	680	0	0	1103	101
Turn Type				Split			Perm					Perm
Protected Phases				2	2			4			4	
Permitted Phases							4					4
Actuated Green, G (s)					23.0		27.2	27.2			27.2	27.2
Effective Green, g (s)					23.0		27.2	27.2			27.2	27.2
Actuated g/C Ratio					0.39		0.46	0.46			0.46	0.46
Clearance Time (s)					4.2		4.2	4.2			4.2	4.2
Vehicle Extension (s)					0.2		0.2	0.2			0.2	0.2
Lane Grp Cap (vph)					1460		135	1643			1643	735
v/s Ratio Prot					c0.10			0.19			c0.31	
v/s Ratio Perm							0.22					0.06
v/c Ratio					0.24		0.47	0.41			0.67	0.14
Uniform Delay, d1					12.0		10.8	10.4			12.2	9.0
Progression Factor					1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2					0.0		1.0	0.1			0.9	0.0
Delay (s)					12.0		11.7	10.5			13.1	9.0
Level of Service					B		B	B			B	A
Approach Delay (s)		0.0			12.0			10.6			12.4	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	8.4
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	57	693	262	127	1482	0	0	1315	476
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	15	12	12	15	15	12	12
Total Lost time (s)					4.2		4.2	4.2			4.2	
Lane Util. Factor					0.95		1.00	0.95			0.91	
Frt					0.96		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3731		1770	3539			4883	
Flt Permitted					1.00		0.11	1.00			1.00	
Satd. Flow (perm)					3731		197	3539			4883	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	62	753	285	138	1611	0	0	1429	517
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	0	0	0	1087	0	138	1611	0	0	1920	0
Turn Type				Split			Perm					
Protected Phases				2	2			4			4	
Permitted Phases							4					
Actuated Green, G (s)					23.5		37.8	37.8			37.8	
Effective Green, g (s)					23.5		37.8	37.8			37.8	
Actuated g/C Ratio					0.34		0.54	0.54			0.54	
Clearance Time (s)					4.2		4.2	4.2			4.2	
Vehicle Extension (s)					0.2		0.2	0.2			0.2	
Lane Grp Cap (vph)					1258		107	1919			2648	
v/s Ratio Prot					c0.29			0.46			0.39	
v/s Ratio Perm							c0.70					
v/c Ratio					0.86		1.29	0.84			0.73	
Uniform Delay, d1					21.6		16.0	13.4			12.0	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					6.2		183.6	3.3			0.9	
Delay (s)					27.8		199.5	16.7			12.9	
Level of Service					C		F	B			B	
Approach Delay (s)		0.0			27.8			31.1			12.9	
Approach LOS		A			C			C			B	

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	8.4
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
45: R Street & Fresno

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	158	183	295	99	180	53	300	404	32	68	875	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1799		1770	5029		1770	3539	1583
Flt Permitted	0.42	1.00	1.00	0.51	1.00		0.26	1.00		0.47	1.00	1.00
Satd. Flow (perm)	778	1863	1583	957	1799		486	5029		877	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	199	321	108	196	58	326	439	35	74	951	243
RTOR Reduction (vph)	0	0	121	0	10	0	0	9	0	0	0	84
Lane Group Flow (vph)	172	199	200	108	244	0	326	465	0	74	951	159
Turn Type	Perm		Perm	Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2	2	2	2			4			4		4
Actuated Green, G (s)	25.3	25.3	25.3	25.3	25.3		65.5	65.5		65.5	65.5	65.5
Effective Green, g (s)	25.3	25.3	25.3	25.3	25.3		65.5	65.5		65.5	65.5	65.5
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25		0.66	0.66		0.66	0.66	0.66
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	197	472	401	243	456		319	3301		576	2323	1039
v/s Ratio Prot		0.11			0.14			0.09			0.27	
v/s Ratio Perm	c0.22		0.13	0.11			c0.67			0.08		0.10
v/c Ratio	0.87	0.42	0.50	0.44	0.53		1.02	0.14		0.13	0.41	0.15
Uniform Delay, d1	35.7	31.1	31.8	31.3	32.2		17.1	6.5		6.4	8.1	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	31.2	0.2	0.4	0.5	0.6		56.1	0.0		0.0	0.0	0.0
Delay (s)	66.9	31.4	32.2	31.8	32.8		73.3	6.5		6.5	8.1	6.6
Level of Service	E	C	C	C	C		E	A		A	A	A
Approach Delay (s)		40.6			32.5			33.7			7.7	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	308	427	449	173	339	94	385	1221	166	56	1169	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1802		1770	4994		1770	3539	1583
Flt Permitted	0.26	1.00	1.00	0.27	1.00		0.13	1.00		0.11	1.00	1.00
Satd. Flow (perm)	483	1863	1583	495	1802		234	4994		210	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	335	464	488	188	368	102	418	1327	180	61	1271	310
RTOR Reduction (vph)	0	0	29	0	9	0	0	16	0	0	0	106
Lane Group Flow (vph)	335	464	459	188	461	0	418	1491	0	61	1271	204
Turn Type	Perm		Perm	Perm			Perm			Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2	2	2	2			4			4		4
Actuated Green, G (s)	41.5	41.5	41.5	41.5	41.5		59.5	59.5		59.5	59.5	59.5
Effective Green, g (s)	41.5	41.5	41.5	41.5	41.5		59.5	59.5		59.5	59.5	59.5
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38		0.54	0.54		0.54	0.54	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	0.2
Lane Grp Cap (vph)	182	703	597	187	680		127	2701		114	1914	856
v/s Ratio Prot		0.25			0.26			0.30			0.36	
v/s Ratio Perm	c0.69		0.29	0.38			c1.79			0.29		0.13
v/c Ratio	1.84	0.66	0.77	1.01	0.68		3.29	0.55		0.54	0.66	0.24
Uniform Delay, d1	34.2	28.4	30.1	34.2	28.7		25.2	16.5		16.3	18.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	398.8	1.8	5.4	67.2	2.1		1051.1	0.1		2.4	0.7	0.1
Delay (s)	433.1	30.2	35.4	101.5	30.8		1076.3	16.7		18.7	18.8	13.4
Level of Service	F	C	D	F	C		F	B		B	B	B
Approach Delay (s)		137.0			51.0			246.8			17.7	
Approach LOS		F			D			F			B	

Intersection Summary

HCM Average Control Delay	129.5	HCM Level of Service	F
HCM Volume to Capacity ratio	2.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	113.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
46: E Divisadero St & Fresno St.

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (vph)	8	117	13	635	202	367	355	547	47	80	150	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	1835		1681	1723	1583	1770	2787	1583	1770	3433	1583
Flt Permitted	0.29	1.00		0.67	0.76	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	532	1835		1180	1340	1583	1770	2787	1583	1770	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	127	14	690	220	399	386	595	51	87	163	313
RTOR Reduction (vph)	0	5	0	0	0	235	0	0	32	0	0	264
Lane Group Flow (vph)	9	136	0	435	475	164	386	595	19	87	163	49
Turn Type	Perm			Perm		Perm		custom	custom	Prot		Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4		4			2			6
Actuated Green, G (s)	31.0	31.0		31.0	31.0	31.0	19.6	24.5	24.5	6.9	11.8	11.8
Effective Green, g (s)	31.0	31.0		31.0	31.0	31.0	19.6	24.5	24.5	6.9	11.8	11.8
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.41	0.26	0.32	0.32	0.09	0.16	0.16
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Vehicle Extension (s)	3.0	3.0		3.5	3.5	3.5	3.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	218	752		484	549	649	459	903	513	162	536	247
v/s Ratio Prot		0.07					c0.22	c0.21		0.05	0.05	
v/s Ratio Perm	0.02			c0.37	0.35	0.10			0.01			0.03
v/c Ratio	0.04	0.18		0.90	0.87	0.25	0.84	0.66	0.04	0.54	0.30	0.20
Uniform Delay, d1	13.4	14.2		20.8	20.4	14.7	26.5	22.0	17.5	32.8	28.3	27.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1		19.5	13.7	0.2	13.0	2.3	0.1	1.7	0.6	0.8
Delay (s)	13.5	14.3		40.3	34.1	14.9	39.6	24.2	17.5	34.5	28.9	28.5
Level of Service	B	B		D	C	B	D	C	B	C	C	C
Approach Delay (s)		14.3			30.3		29.6				29.6	
Approach LOS		B			C		C				C	

Intersection Summary

HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (vph)	12	247	43	794	44	424	412	612	13	17	763	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	1821		1681	1694	1583	1770	2787	1583	1770	3433	1583
Flt Permitted	0.30	1.00		0.46	0.45	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	559	1821		815	789	1583	1770	2787	1583	1770	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	268	47	863	48	461	448	665	14	18	829	893
RTOR Reduction (vph)	0	4	0	0	0	246	0	0	4	0	0	284
Lane Group Flow (vph)	13	311	0	449	462	215	448	665	10	18	829	609
Turn Type	Perm			Perm		Perm		custom	custom	Prot		Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4		4			2			6
Actuated Green, G (s)	68.4	68.4		68.4	68.4	68.4	30.0	65.8	65.8	4.2	40.0	40.0
Effective Green, g (s)	68.4	68.4		68.4	68.4	68.4	30.0	65.8	65.8	4.2	40.0	40.0
Actuated g/C Ratio	0.45	0.45		0.45	0.45	0.45	0.20	0.43	0.43	0.03	0.26	0.26
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Vehicle Extension (s)	3.0	3.0		3.5	3.5	3.5	3.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	252	822		368	356	714	350	1210	687	49	906	418
v/s Ratio Prot		0.17					c0.25	0.24		0.01	0.24	
v/s Ratio Perm	0.02			0.55	c0.59	0.14			0.01			c0.38
v/c Ratio	0.05	0.38		1.22	1.30	0.30	1.28	0.55	0.01	0.37	0.92	1.46
Uniform Delay, d1	23.4	27.5		41.6	41.6	26.4	60.8	31.9	24.4	72.4	54.2	55.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3		121.2	153.3	0.3	146.3	0.9	0.0	1.7	14.1	218.4
Delay (s)	23.5	27.8		162.8	194.9	26.7	207.1	32.7	24.5	74.1	68.3	274.2
Level of Service	C	C		F	F	C	F	C	C	E	E	F
Approach Delay (s)		27.6			127.9		101.9				174.0	
Approach LOS		C			F		F				F	

Intersection Summary

HCM Average Control Delay	131.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	151.6	Sum of lost time (s)	13.2
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
47: Broadway St & Fresno St

4/25/2011

Movement	WBL2	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations											
Volume (vph)	15	9	134	0	0	110	631	69	0	331	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	12	12	15	15	12	12
Total Lost time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Lane Util. Factor		1.00	1.00			1.00	0.95			0.95	1.00
Frt		1.00	0.85			1.00	0.99			1.00	0.85
Flt Protected		0.95	1.00			0.95	1.00			1.00	1.00
Satd. Flow (prot)		1947	1583			1770	3487			3539	1583
Flt Permitted		0.68	1.00			0.54	1.00			1.00	1.00
Satd. Flow (perm)		1393	1583			1000	3487			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	10	146	0	0	120	686	75	0	360	30
RTOR Reduction (vph)	0	0	98	0	0	0	12	0	0	0	14
Lane Group Flow (vph)	0	26	48	0	0	120	749	0	0	360	16
Turn Type	custom		custom			Perm					Perm
Protected Phases			4				2			6	
Permitted Phases	4	4				2					6
Actuated Green, G (s)		19.0	19.0			30.1	30.1			30.1	30.1
Effective Green, g (s)		19.0	19.0			30.1	30.1			30.1	30.1
Actuated g/C Ratio		0.33	0.33			0.52	0.52			0.52	0.52
Clearance Time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Vehicle Extension (s)		0.2	0.2			0.2	0.2			0.2	0.2
Lane Grp Cap (vph)		456	518			518	1807			1833	820
v/s Ratio Prot			c0.03				c0.21			0.10	
v/s Ratio Perm		0.02				0.12					0.01
v/c Ratio		0.06	0.09			0.23	0.41			0.20	0.02
Uniform Delay, d1		13.4	13.6			7.7	8.6			7.5	6.8
Progression Factor		1.00	1.00			1.00	1.00			1.00	1.00
Incremental Delay, d2		0.0	0.0			0.1	0.1			0.0	0.0
Delay (s)		13.4	13.6			7.8	8.6			7.5	6.8
Level of Service		B	B			A	A			A	A
Approach Delay (s)		13.6		0.0			8.5			7.5	
Approach LOS		B		A			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations											
Volume (vph)	360	39	271	0	0	103	366	405	0	592	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	12	12	15	15	12	12
Total Lost time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Lane Util. Factor		1.00	1.00			1.00	0.95			0.95	1.00
Frt		1.00	0.85			1.00	0.92			1.00	0.85
Flt Protected		0.95	1.00			0.95	1.00			1.00	1.00
Satd. Flow (prot)		1947	1583			1770	3260			3539	1583
Flt Permitted		0.68	1.00			0.35	1.00			1.00	1.00
Satd. Flow (perm)		1403	1583			661	3260			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	42	295	0	0	112	398	440	0	643	46
RTOR Reduction (vph)	0	0	90	0	0	0	249	0	0	0	26
Lane Group Flow (vph)	0	433	205	0	0	112	589	0	0	643	20
Turn Type	custom		custom			Perm					Perm
Protected Phases			4				2			6	
Permitted Phases	4	4				2					6
Actuated Green, G (s)		25.0	25.0			26.0	26.0			26.0	26.0
Effective Green, g (s)		25.0	25.0			26.0	26.0			26.0	26.0
Actuated g/C Ratio		0.42	0.42			0.43	0.43			0.43	0.43
Clearance Time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Vehicle Extension (s)		0.2	0.2			0.2	0.2			0.2	0.2
Lane Grp Cap (vph)		585	660			286	1413			1534	686
v/s Ratio Prot			0.13				0.18			c0.18	
v/s Ratio Perm		c0.31				0.17					0.01
v/c Ratio		0.74	0.31			0.39	0.42			0.42	0.03
Uniform Delay, d1		14.8	11.7			11.6	11.8			11.8	9.8
Progression Factor		1.00	1.00			1.00	1.00			1.00	1.00
Incremental Delay, d2		4.4	0.1			0.3	0.1			0.1	0.0
Delay (s)		19.2	11.8			11.9	11.8			11.8	9.8
Level of Service		B	B			B	B			B	A
Approach Delay (s)		16.2		0.0			11.8			11.7	
Approach LOS		B		A			B			B	

Intersection Summary

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	100	0	0	292	398	180	814	575	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.95			0.95			0.91				
Frt		1.00			0.91			0.95				
Flt Protected		0.99			1.00			0.99				
Satd. Flow (prot)		3498			3233			4778				
Flt Permitted		0.77			1.00			0.99				
Satd. Flow (perm)		2739			3233			4778				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	109	0	0	317	433	196	885	625	0	0	0
RTOR Reduction (vph)	0	0	0	0	59	0	0	192	0	0	0	0
Lane Group Flow (vph)	0	143	0	0	691	0	0	1514	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		8			4		2	2				
Permitted Phases	8											
Actuated Green, G (s)		19.0			19.0			25.2				
Effective Green, g (s)		19.0			19.0			25.2				
Actuated g/C Ratio		0.35			0.35			0.46				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		960			1133			2222				
v/s Ratio Prot					c0.21			c0.32				
v/s Ratio Perm		0.05										
v/c Ratio		0.15			0.61			0.68				
Uniform Delay, d1		12.1			14.5			11.4				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.6			0.7				
Delay (s)		12.1			15.2			12.1				
Level of Service		B			B			B				
Approach Delay (s)		12.1			15.2			12.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary

HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	156	0	0	184	321	99	647	531	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.95			0.95			0.91				
Frt		1.00			0.90			0.94				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		3509			3202			4750				
Flt Permitted		0.83			1.00			1.00				
Satd. Flow (perm)		2939			3202			4750				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	170	0	0	200	349	108	703	577	0	0	0
RTOR Reduction (vph)	0	0	0	0	100	0	0	237	0	0	0	0
Lane Group Flow (vph)	0	205	0	0	449	0	0	1151	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		8			4		2	2				
Permitted Phases	8											
Actuated Green, G (s)		19.0			19.0			25.0				
Effective Green, g (s)		19.0			19.0			25.0				
Actuated g/C Ratio		0.35			0.35			0.46				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		1034			1127			2199				
v/s Ratio Prot					c0.14			c0.24				
v/s Ratio Perm		0.07										
v/c Ratio		0.20			0.40			0.52				
Uniform Delay, d1		12.2			13.2			10.3				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.1			0.1				
Delay (s)		12.2			13.3			10.4				
Level of Service		B			B			B				
Approach Delay (s)		12.2			13.3			10.4			0.0	
Approach LOS		B			B			B			A	

Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	108	181	0	0	76	71	52	495	708	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Lane Util. Factor	0.95	0.95			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1681	1765			1863	1583		5061	1583			
Flt Permitted	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1681	1765			1863	1583		5061	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	197	0	0	83	77	57	538	770	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	68	0	0	411	0	0	0
Lane Group Flow (vph)	105	209	0	0	83	9	0	595	359	0	0	0
Turn Type	Split					Perm	Split		Perm			
Protected Phases	2	2			1		8	8				
Permitted Phases						1			8			
Actuated Green, G (s)	9.2	9.2			5.6	5.6		22.0	22.0			
Effective Green, g (s)	9.2	9.2			5.6	5.6		22.0	22.0			
Actuated g/C Ratio	0.18	0.18			0.11	0.11		0.44	0.44			
Clearance Time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Vehicle Extension (s)	3.8	3.8			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	311	326			209	178		2236	699			
v/s Ratio Prot	0.06	c0.12			c0.04			0.12				
v/s Ratio Perm						0.01			c0.23			
v/c Ratio	0.34	0.64			0.40	0.05		0.27	0.51			
Uniform Delay, d1	17.7	18.8			20.5	19.7		8.8	10.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.8	4.6			0.5	0.0		0.0	0.3			
Delay (s)	18.5	23.4			21.0	19.8		8.8	10.3			
Level of Service	B	C			C	B		A	B			
Approach Delay (s)		21.8			20.4			9.7			0.0	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	65	94	0	0	436	100	242	769	296	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Lane Util. Factor	0.95	0.95			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1681	1764			1863	1583		5025	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	1681	1764			1863	1583		5025	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	102	0	0	474	109	263	836	322	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	77	0	0	213	0	0	0
Lane Group Flow (vph)	64	109	0	0	474	32	0	1099	109	0	0	0
Turn Type	Split					Perm	Split		Perm			
Protected Phases	2	2			1		8	8				
Permitted Phases						1			8			
Actuated Green, G (s)	7.9	7.9			17.0	17.0		19.3	19.3			
Effective Green, g (s)	7.9	7.9			17.0	17.0		19.3	19.3			
Actuated g/C Ratio	0.14	0.14			0.30	0.30		0.34	0.34			
Clearance Time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Vehicle Extension (s)	3.8	3.8			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	232	244			554	470		1695	534			
v/s Ratio Prot	0.04	c0.06			c0.25			c0.22				
v/s Ratio Perm						0.02			0.07			
v/c Ratio	0.28	0.45			0.86	0.07		0.65	0.20			
Uniform Delay, d1	22.1	22.6			18.9	14.4		16.1	13.5			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.8	1.7			11.9	0.0		0.6	0.1			
Delay (s)	22.9	24.3			30.8	14.4		16.7	13.6			
Level of Service	C	C			C	B		B	B			
Approach Delay (s)		23.8			27.8			16.0			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
50: Van Ness Ave & Tuolumne St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	86	477	0	0	308	67	42	665	102	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2			4.2				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frt	1.00	1.00			0.98			0.98				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1818			4976				
Flt Permitted	0.43	1.00			1.00			1.00				
Satd. Flow (perm)	804	1863			1818			4976				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	518	0	0	335	73	46	723	111	0	0	0
RTOR Reduction (vph)	0	0	0	0	14	0	0	31	0	0	0	0
Lane Group Flow (vph)	93	518	0	0	394	0	0	849	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		2			6		8	8				
Permitted Phases	2											
Actuated Green, G (s)	27.0	27.0			27.0			22.0				
Effective Green, g (s)	27.0	27.0			27.0			22.0				
Actuated g/C Ratio	0.47	0.47			0.47			0.38				
Clearance Time (s)	4.2	4.2			4.2			4.2				
Vehicle Extension (s)	0.2	0.2			0.2			0.2				
Lane Grp Cap (vph)	378	876			855			1907				
v/s Ratio Prot		c0.28			0.22			c0.17				
v/s Ratio Perm	0.12											
v/c Ratio	0.25	0.59			0.46			0.45				
Uniform Delay, d1	9.1	11.2			10.3			13.2				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	0.1	0.7			0.1			0.1				
Delay (s)	9.2	11.9			10.4			13.2				
Level of Service	A	B			B			B				
Approach Delay (s)		11.5			10.4			13.2			0.0	
Approach LOS		B			B			B			A	

Intersection Summary

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	38	370	0	0	691	115	46	612	134	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2			4.2				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frt	1.00	1.00			0.98			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1827			4942				
Flt Permitted	0.14	1.00			1.00			1.00				
Satd. Flow (perm)	256	1863			1827			4942				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	402	0	0	751	125	50	665	146	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	0	52	0	0	0	0
Lane Group Flow (vph)	41	402	0	0	866	0	0	809	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		2			6		8	8				
Permitted Phases	2											
Actuated Green, G (s)	29.1	29.1			29.1			22.0				
Effective Green, g (s)	29.1	29.1			29.1			22.0				
Actuated g/C Ratio	0.49	0.49			0.49			0.37				
Clearance Time (s)	4.2	4.2			4.2			4.2				
Vehicle Extension (s)	0.2	0.2			0.2			0.2				
Lane Grp Cap (vph)	125	911			894			1827				
v/s Ratio Prot		0.22			c0.47			c0.16				
v/s Ratio Perm	0.16											
v/c Ratio	0.33	0.44			0.97			0.44				
Uniform Delay, d1	9.2	9.9			14.8			14.1				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	0.6	0.1			22.3			0.1				
Delay (s)	9.8	10.0			37.1			14.2				
Level of Service	A	B			D			B				
Approach Delay (s)		10.0			37.1			14.2			0.0	
Approach LOS		B			D			B			A	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	8.4
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	60	317	306	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2			
Lane Util. Factor		1.00	0.91			
Frt		0.86	0.93			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1611	4711			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1611	4711			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	65	345	333	0	0
RTOR Reduction (vph)	0	58	142	0	0	0
Lane Group Flow (vph)	0	7	536	0	0	0
Turn Type		custom				
Protected Phases			8			
Permitted Phases		2				
Actuated Green, G (s)		2.8	15.0			
Effective Green, g (s)		2.8	15.0			
Actuated g/C Ratio		0.11	0.57			
Clearance Time (s)		4.2	4.2			
Vehicle Extension (s)		0.2	6.0			
Lane Grp Cap (vph)		172	2697			
v/s Ratio Prot			c0.11			
v/s Ratio Perm		c0.00				
v/c Ratio		0.04	0.20			
Uniform Delay, d1		10.5	2.7			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.0	0.1			
Delay (s)		10.5	2.8			
Level of Service		B	A			
Approach Delay (s)	10.5		2.8		0.0	
Approach LOS	B		A		A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	26.2	Sum of lost time (s)	8.4
Intersection Capacity Utilization	23.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	266	586	267	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2			
Lane Util. Factor		1.00	0.91			
Frt		0.86	0.95			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1611	4847			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1611	4847			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	289	637	290	0	0
RTOR Reduction (vph)	0	95	121	0	0	0
Lane Group Flow (vph)	0	194	806	0	0	0
Turn Type		custom				
Protected Phases			8			
Permitted Phases		2				
Actuated Green, G (s)		6.6	17.9			
Effective Green, g (s)		6.6	17.9			
Actuated g/C Ratio		0.20	0.54			
Clearance Time (s)		4.2	4.2			
Vehicle Extension (s)		0.2	6.0			
Lane Grp Cap (vph)		323	2637			
v/s Ratio Prot			c0.17			
v/s Ratio Perm		c0.12				
v/c Ratio		0.60	0.31			
Uniform Delay, d1		12.0	4.1			
Progression Factor		1.00	1.00			
Incremental Delay, d2		2.1	0.2			
Delay (s)		14.1	4.3			
Level of Service		B	A			
Approach Delay (s)	14.1		4.3		0.0	
Approach LOS	B		A		A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	32.9	Sum of lost time (s)	8.4
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
52: E St & Stanislaus St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	117	124	90	262	0	0	0	0	25	905	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4			5.4						5.4	5.4
Lane Util. Factor		0.95			0.95						0.91	1.00
Frt		0.92			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		3266			3495						5079	1583
Flt Permitted		1.00			0.81						1.00	1.00
Satd. Flow (perm)		3266			2878						5079	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	127	135	98	285	0	0	0	0	27	984	86
RTOR Reduction (vph)	0	87	0	0	0	0	0	0	0	0	0	56
Lane Group Flow (vph)	0	175	0	0	383	0	0	0	0	0	1011	30
Turn Type				Perm						Split		Perm
Protected Phases		2			2					8	8	
Permitted Phases				2								8
Actuated Green, G (s)		6.7			6.7						9.6	9.6
Effective Green, g (s)		6.7			6.7						9.6	9.6
Actuated g/C Ratio		0.25			0.25						0.35	0.35
Clearance Time (s)		5.4			5.4						5.4	5.4
Vehicle Extension (s)		0.2			0.2						0.2	0.2
Lane Grp Cap (vph)		807			712						1799	561
v/s Ratio Prot		0.05									c0.20	
v/s Ratio Perm					c0.13							0.02
v/c Ratio		0.22			0.54						0.56	0.05
Uniform Delay, d1		8.1			8.9						7.1	5.8
Progression Factor		1.00			1.00						1.00	1.00
Incremental Delay, d2		0.0			0.4						0.2	0.0
Delay (s)		8.2			9.2						7.3	5.8
Level of Service		A			A						A	A
Approach Delay (s)		8.2			9.2			0.0			7.2	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	27.1	Sum of lost time (s)	10.8
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	141	337	108	159	0	0	0	0	60	2254	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4			5.4						5.4	5.4
Lane Util. Factor		0.95			0.95						0.91	1.00
Frt		0.89			1.00						1.00	0.85
Flt Protected		1.00			0.98						1.00	1.00
Satd. Flow (prot)		3165			3469						5079	1583
Flt Permitted		1.00			0.62						1.00	1.00
Satd. Flow (perm)		3165			2202						5079	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	153	366	117	173	0	0	0	0	65	2450	107
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	44
Lane Group Flow (vph)	0	517	0	0	290	0	0	0	0	0	2515	63
Turn Type				Perm						Split		Perm
Protected Phases		2			2					8	8	
Permitted Phases				2								8
Actuated Green, G (s)		12.6			12.6						33.0	33.0
Effective Green, g (s)		12.6			12.6						33.0	33.0
Actuated g/C Ratio		0.22			0.22						0.59	0.59
Clearance Time (s)		5.4			5.4						5.4	5.4
Vehicle Extension (s)		0.2			0.2						0.2	0.2
Lane Grp Cap (vph)		707			492						2972	926
v/s Ratio Prot		c0.16									c0.50	
v/s Ratio Perm					0.13							0.04
v/c Ratio		1.02dr			0.59						0.85	0.07
Uniform Delay, d1		20.3			19.6						9.6	5.1
Progression Factor		1.00			1.00						1.00	1.00
Incremental Delay, d2		3.4			1.2						2.3	0.0
Delay (s)		23.7			20.8						11.9	5.1
Level of Service		C			C						B	A
Approach Delay (s)		23.7			20.8			0.0			11.6	
Approach LOS		C			C			A			B	

Intersection Summary

HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	10.8
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	137	496	10	159	0	0	0	0	115	635	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	1.00					1.00	0.95	1.00
Frt		0.88		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3123		1770	1863					1770	3539	1583
Flt Permitted		1.00		0.27	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3123		508	1863					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	149	539	11	173	0	0	0	0	125	690	17
RTOR Reduction (vph)	0	128	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	560	0	11	173	0	0	0	0	125	690	9
Turn Type				Perm						Split		Perm
Protected Phases		2			2					4	4	
Permitted Phases				2								4
Actuated Green, G (s)		19.0		19.0	19.0					31.0	31.0	31.0
Effective Green, g (s)		19.0		19.0	19.0					31.0	31.0	31.0
Actuated g/C Ratio		0.33		0.33	0.33					0.53	0.53	0.53
Clearance Time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Vehicle Extension (s)		0.2		0.2	0.2					0.2	0.2	0.2
Lane Grp Cap (vph)		1016		165	606					940	1879	840
v/s Ratio Prot		c0.18			0.09					0.07	c0.19	
v/s Ratio Perm				0.02								0.01
v/c Ratio		0.55		0.07	0.29					0.13	0.37	0.01
Uniform Delay, d1		16.2		13.6	14.7					6.9	8.0	6.5
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4		0.1	0.1					0.0	0.0	0.0
Delay (s)		16.6		13.6	14.7					6.9	8.0	6.5
Level of Service		B		B	B					A	A	A
Approach Delay (s)		16.6			14.7			0.0			7.8	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	112	380	188	418	0	0	0	0	40	1398	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	1.00					1.00	0.95	1.00
Frt		0.88		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3129		1770	1863					1770	3539	1583
Flt Permitted		1.00		0.38	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3129		713	1863					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	122	413	204	454	0	0	0	0	43	1520	372
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	0	92
Lane Group Flow (vph)	0	522	0	204	454	0	0	0	0	43	1520	280
Turn Type				Perm						Split		Perm
Protected Phases		2			2					4	4	
Permitted Phases				2								4
Actuated Green, G (s)		20.0		20.0	20.0					31.0	31.0	31.0
Effective Green, g (s)		20.0		20.0	20.0					31.0	31.0	31.0
Actuated g/C Ratio		0.34		0.34	0.34					0.52	0.52	0.52
Clearance Time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Vehicle Extension (s)		0.2		0.2	0.2					0.2	0.2	0.2
Lane Grp Cap (vph)		1054		240	627					924	1847	826
v/s Ratio Prot		0.17			0.24					0.02	c0.43	
v/s Ratio Perm				c0.29								0.18
v/c Ratio		0.50		0.85	0.72					0.05	0.82	0.34
Uniform Delay, d1		15.7		18.3	17.3					7.0	11.9	8.2
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.1		22.7	3.5					0.0	3.0	0.1
Delay (s)		15.8		41.0	20.8					7.0	14.9	8.3
Level of Service		B		D	C					A	B	A
Approach Delay (s)		15.8			27.0			0.0			13.4	
Approach LOS		B			C			A			B	

Intersection Summary

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	303	15	76	272	0	0	0	0	247	633	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2						4.2	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1851		1770	1863						4983	
Flt Permitted		1.00		0.50	1.00						0.99	
Satd. Flow (perm)		1851		927	1863						4983	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	329	16	83	296	0	0	0	0	268	688	47
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	342	0	83	296	0	0	0	0	0	994	0
Turn Type				Perm						Split		
Protected Phases		2			6					4	4	
Permitted Phases				6								
Actuated Green, G (s)		29.6		29.6	29.6						22.0	
Effective Green, g (s)		29.6		29.6	29.6						22.0	
Actuated g/C Ratio		0.49		0.49	0.49						0.37	
Clearance Time (s)		4.2		4.2	4.2						4.2	
Vehicle Extension (s)		0.2		0.2	0.2						0.2	
Lane Grp Cap (vph)		913		457	919						1827	
v/s Ratio Prot		c0.18			0.16						c0.20	
v/s Ratio Perm				0.09								
v/c Ratio		0.37		0.18	0.32						0.54	
Uniform Delay, d1		9.4		8.5	9.2						15.0	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		1.2		0.1	0.1						0.2	
Delay (s)		10.6		8.5	9.2						15.2	
Level of Service		B		A	A						B	
Approach Delay (s)		10.6			9.1			0.0			15.2	
Approach LOS		B			A			A			B	

Intersection Summary

HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	234	27	211	506	0	0	0	0	155	1539	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2						4.2	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1837		1770	1863						5028	
Flt Permitted		1.00		0.55	1.00						1.00	
Satd. Flow (perm)		1837		1025	1863						5028	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	254	29	229	550	0	0	0	0	168	1673	90
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	281	0	229	550	0	0	0	0	0	1922	0
Turn Type				Perm						Split		
Protected Phases		2			6					4	4	
Permitted Phases				6								
Actuated Green, G (s)		28.2		28.2	28.2						23.4	
Effective Green, g (s)		28.2		28.2	28.2						23.4	
Actuated g/C Ratio		0.47		0.47	0.47						0.39	
Clearance Time (s)		4.2		4.2	4.2						4.2	
Vehicle Extension (s)		0.2		0.2	0.2						0.2	
Lane Grp Cap (vph)		863		482	876						1961	
v/s Ratio Prot		0.15			c0.30						c0.38	
v/s Ratio Perm				0.22								
v/c Ratio		0.33		0.48	0.63						0.98	
Uniform Delay, d1		10.0		10.8	12.0						18.1	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		1.0		0.3	1.0						15.8	
Delay (s)		11.0		11.1	13.0						33.9	
Level of Service		B		B	B						C	
Approach Delay (s)		11.0			12.4			0.0			33.9	
Approach LOS		B			B			A			C	

Intersection Summary

HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	SBR2	SER	NWL	NWT	SWL	SWT
Lane Configurations								
Volume (vph)	294	1099	3	40	23	47	97	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Lane Util. Factor	1.00	0.88		1.00		1.00	1.00	0.95
Frt	1.00	0.85		0.86		1.00	1.00	1.00
Flt Protected	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (prot)	1770	2787		1611		1833	1770	3539
Flt Permitted	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (perm)	1770	2787		1611		1833	1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	320	1195	3	43	25	51	105	111
RTOR Reduction (vph)	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	320	1198	0	2	0	76	105	111
Turn Type		Prot		custom	Split		Split	
Protected Phases	2	2		8	1	1	4	4
Permitted Phases								
Actuated Green, G (s)	38.4	38.4		3.1		7.4	11.1	11.1
Effective Green, g (s)	38.4	38.4		3.1		7.4	11.1	11.1
Actuated g/C Ratio	0.49	0.49		0.04		0.10	0.14	0.14
Clearance Time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Vehicle Extension (s)	4.0	4.0		2.0		2.0	4.0	4.0
Lane Grp Cap (vph)	875	1377		64		175	253	506
v/s Ratio Prot	0.18	c0.43		c0.00		c0.04	c0.06	0.03
v/s Ratio Perm								
v/c Ratio	0.37	0.87		0.03		0.43	0.42	0.22
Uniform Delay, d1	12.1	17.4		35.9		33.2	30.3	29.5
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	6.4		0.1		0.6	1.5	0.3
Delay (s)	12.5	23.9		35.9		33.8	31.8	29.8
Level of Service	B	C		D		C	C	C
Approach Delay (s)	21.5					33.8		30.8
Approach LOS	C					C		C

Intersection Summary

HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	17.7
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	SBR2	SER	NWL	NWT	SWL	SWT
Lane Configurations								
Volume (vph)	452	1341	5	67	15	26	114	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Lane Util. Factor	1.00	0.88		1.00		1.00	1.00	0.95
Frt	1.00	0.85		0.86		1.00	1.00	1.00
Flt Protected	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (prot)	1770	2787		1611		1829	1770	3539
Flt Permitted	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (perm)	1770	2787		1611		1829	1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	491	1458	5	73	16	28	124	208
RTOR Reduction (vph)	0	0	0	69	0	0	0	0
Lane Group Flow (vph)	491	1463	0	4	0	44	124	208
Turn Type		Prot		custom	Split		Split	
Protected Phases	2	2		8	1	1	4	4
Permitted Phases								
Actuated Green, G (s)	49.4	49.4		4.7		12.0	13.4	13.4
Effective Green, g (s)	49.4	49.4		4.7		12.0	13.4	13.4
Actuated g/C Ratio	0.51	0.51		0.05		0.12	0.14	0.14
Clearance Time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Vehicle Extension (s)	4.0	4.0		2.0		2.0	4.0	4.0
Lane Grp Cap (vph)	900	1416		78		226	244	488
v/s Ratio Prot	0.28	c0.53		c0.00		c0.02	c0.07	0.06
v/s Ratio Perm								
v/c Ratio	0.55	1.03		0.05		0.19	0.51	0.43
Uniform Delay, d1	16.3	23.9		44.1		38.3	38.8	38.4
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	32.9		0.1		0.2	2.3	0.8
Delay (s)	17.1	56.8		44.2		38.4	41.1	39.2
Level of Service	B	E		D		D	D	D
Approach Delay (s)	46.8					38.4		39.9
Approach LOS	D					D		D

Intersection Summary

HCM Average Control Delay	45.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	17.7
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NWL2	NWL	NWR	NWR2
Lane Configurations										
Volume (vph)	135	375	21	72	94	50	225	74	488	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	0.76	
Frt	1.00	0.99		1.00	0.95			1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1770	3511		1770	3355			1770	3610	
Flt Permitted	0.65	1.00		0.50	1.00			0.95	1.00	
Satd. Flow (perm)	1217	3511		933	3355			1770	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	408	23	78	102	54	245	80	530	24
RTOR Reduction (vph)	0	7	0	0	32	0	0	0	7	0
Lane Group Flow (vph)	147	424	0	78	124	0	0	325	547	0
Turn Type	Perm			Perm			Split		Perm	
Protected Phases		4			4		2	2		
Permitted Phases	4			4					2	
Actuated Green, G (s)	23.0	23.0		23.0	23.0			23.0	23.0	
Effective Green, g (s)	23.0	23.0		23.0	23.0			23.0	23.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.41	0.41	
Clearance Time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	
Lane Grp Cap (vph)	496	1432		380	1368			722	1472	
v/s Ratio Prot		c0.12			0.04			c0.18		
v/s Ratio Perm	0.12			0.08					0.15	
v/c Ratio	0.30	0.30		0.21	0.09			0.45	0.37	
Uniform Delay, d1	11.2	11.2		10.8	10.3			12.1	11.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.1	0.0			0.2	0.1	
Delay (s)	11.4	11.3		10.9	10.3			12.3	11.7	
Level of Service	B	B		B	B			B	B	
Approach Delay (s)		11.3			10.5			11.9		
Approach LOS		B			B			B		

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	10.4
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NWL2	NWL	NWR	NWR2
Lane Configurations										
Volume (vph)	262	296	8	113	263	182	237	266	1613	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	0.76	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1770	3525		1770	3322			1770	3610	
Flt Permitted	0.43	1.00		0.55	1.00			0.95	1.00	
Satd. Flow (perm)	806	3525		1028	3322			1770	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	285	322	9	123	286	198	258	289	1753	32
RTOR Reduction (vph)	0	3	0	0	5	0	0	46	2	0
Lane Group Flow (vph)	285	328	0	123	479	0	0	501	1783	0
Turn Type	Perm			Perm			Split		Perm	
Protected Phases		4			4		2	2		
Permitted Phases	4			4					2	
Actuated Green, G (s)	24.8	24.8		24.8	24.8			34.8	34.8	
Effective Green, g (s)	24.8	24.8		24.8	24.8			34.8	34.8	
Actuated g/C Ratio	0.35	0.35		0.35	0.35			0.50	0.50	
Clearance Time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	
Lane Grp Cap (vph)	286	1249		364	1177			880	1795	
v/s Ratio Prot		0.09			0.14			0.28		
v/s Ratio Perm	c0.35			0.12					c0.49	
v/c Ratio	1.00	0.26		0.34	0.41			0.57	0.99	
Uniform Delay, d1	22.6	16.1		16.6	17.1			12.3	17.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	51.9	0.0		0.2	0.1			0.5	19.5	
Delay (s)	74.4	16.1		16.8	17.1			12.9	37.0	
Level of Service	E	B		B	B			B	D	
Approach Delay (s)		43.1			17.1			31.3		
Approach LOS		D			B			C		

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	425	40	0	328	0	0	0	0	105	1354	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5					4.9	4.9	4.9
Lane Util. Factor		0.95			0.95					1.00	0.95	1.00
Frt		0.99			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3494			3539					1770	3539	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3494			3539					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	462	43	0	357	0	0	0	0	114	1472	187
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	52
Lane Group Flow (vph)	0	499	0	0	357	0	0	0	0	114	1472	135
Turn Type										Split		Perm
Protected Phases		4			4					2	2	
Permitted Phases												2
Actuated Green, G (s)		27.0			27.0					28.6	28.6	28.6
Effective Green, g (s)		27.0			27.0					28.6	28.6	28.6
Actuated g/C Ratio		0.42			0.42					0.44	0.44	0.44
Clearance Time (s)		4.5			4.5					4.9	4.9	4.9
Vehicle Extension (s)		5.0			5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1451			1470					779	1557	697
v/s Ratio Prot		c0.14			0.10					0.06	c0.42	
v/s Ratio Perm												0.09
v/c Ratio		0.34			0.24					0.15	0.95	0.19
Uniform Delay, d1		13.0			12.4					10.9	17.5	11.1
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		0.3			0.2					0.2	12.5	0.3
Delay (s)		13.3			12.5					11.1	29.9	11.4
Level of Service		B			B					B	C	B
Approach Delay (s)		13.3			12.5			0.0			26.8	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
57: E Divisadero St & N Blackstone Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	440	74	0	1089	0	0	0	0	119	1718	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5					4.9	4.9	4.9
Lane Util. Factor		0.95			0.95					1.00	0.95	1.00
Frt		0.98			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3463			3539					1770	3539	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3463			3539					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	478	80	0	1184	0	0	0	0	129	1867	324
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	552	0	0	1184	0	0	0	0	129	1867	319
Turn Type										Split		Perm
Protected Phases		4			4					2	2	
Permitted Phases												2
Actuated Green, G (s)		27.8			27.8					42.8	42.8	42.8
Effective Green, g (s)		27.8			27.8					42.8	42.8	42.8
Actuated g/C Ratio		0.35			0.35					0.53	0.53	0.53
Clearance Time (s)		4.5			4.5					4.9	4.9	4.9
Vehicle Extension (s)		5.0			5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1203			1230					947	1893	847
v/s Ratio Prot		0.16			c0.33					0.07	c0.53	
v/s Ratio Perm												0.20
v/c Ratio		0.46			0.96					0.14	0.99	0.38
Uniform Delay, d1		20.3			25.6					9.3	18.3	10.8
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		0.6			17.6					0.1	17.5	0.6
Delay (s)		20.8			43.2					9.5	35.8	11.4
Level of Service		C			D					A	D	B
Approach Delay (s)		20.8			43.2			0.0			30.9	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	6	722	354	10	9	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	785	385	11	10	8
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	396				1188	390
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	396				1188	390
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				95	99
cM capacity (veh/h)	1163				207	658

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	791	396	17
Volume Left	7	0	10
Volume Right	0	11	8
cSH	1163	1700	295
Volume to Capacity	0.01	0.23	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.2	0.0	17.9
Lane LOS	A		C
Approach Delay (s)	0.2	0.0	17.9
Approach LOS			C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	5	785	608	4	4	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	853	661	4	4	2
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	665				1527	663
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	665				1527	663
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				97	100
cM capacity (veh/h)	924				129	461

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	859	665	7
Volume Left	5	0	4
Volume Right	0	4	2
cSH	924	1700	169
Volume to Capacity	0.01	0.39	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.2	0.0	27.1
Lane LOS	A		D
Approach Delay (s)	0.2	0.0	27.1
Approach LOS			D

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
59: E Divisadero St & N San Pablo Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	443	317	7	277	23	2	11	14	35	259	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.92		1.00	0.96	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3528	1583		3495		1770	1708		1770	1794	
Flt Permitted		0.92	1.00		0.94		0.38	1.00		0.74	1.00	
Satd. Flow (perm)		3243	1583		3300		710	1708		1378	1794	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	482	345	8	301	25	2	12	15	38	282	92
RTOR Reduction (vph)	0	0	165	0	10	0	0	10	0	0	19	0
Lane Group Flow (vph)	0	516	180	0	324	0	2	17	0	38	355	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		30.6	30.6		30.6		18.6	18.6		18.6	18.6	
Effective Green, g (s)		30.6	30.6		30.6		18.6	18.6		18.6	18.6	
Actuated g/C Ratio		0.51	0.51		0.51		0.31	0.31		0.31	0.31	
Clearance Time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1654	807		1683		220	529		427	556	
v/s Ratio Prot								0.01			c0.20	
v/s Ratio Perm		c0.16	0.11		0.10		0.00			0.03		
v/c Ratio		0.31	0.22		0.19		0.01	0.03		0.09	0.64	
Uniform Delay, d1		8.6	8.1		8.0		14.3	14.4		14.7	17.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.1		0.0		0.0	0.0		0.0	1.8	
Delay (s)		8.6	8.2		8.0		14.3	14.4		14.7	19.6	
Level of Service		A	A		A		B	B		B	B	
Approach Delay (s)		8.4			8.0			14.4			19.1	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
59: E Divisadero St & N San Pablo Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	447	263	22	1018	203	18	32	22	55	304	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.98		1.00	0.94		1.00	0.95	
Flt Protected		0.99	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3490	1583		3449		1770	1749		1770	1771	
Flt Permitted		0.54	1.00		0.94		0.22	1.00		0.72	1.00	
Satd. Flow (perm)		1897	1583		3232		408	1749		1338	1771	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	486	286	24	1107	221	20	35	24	60	330	162
RTOR Reduction (vph)	0	0	134	0	27	0	0	17	0	0	30	0
Lane Group Flow (vph)	0	678	152	0	1325	0	20	42	0	60	462	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		30.6	30.6		30.6		18.6	18.6		18.6	18.6	
Effective Green, g (s)		30.6	30.6		30.6		18.6	18.6		18.6	18.6	
Actuated g/C Ratio		0.51	0.51		0.51		0.31	0.31		0.31	0.31	
Clearance Time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		967	807		1648		126	542		415	549	
v/s Ratio Prot								0.02			c0.26	
v/s Ratio Perm		0.36	0.10		c0.41		0.05			0.04		
v/c Ratio		1.55dl	0.19		0.80		0.16	0.08		0.14	0.84	
Uniform Delay, d1		11.2	8.0		12.2		15.0	14.6		15.0	19.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9	0.0		2.8		0.2	0.0		0.1	10.8	
Delay (s)		13.1	8.0		15.0		15.2	14.7		15.0	30.1	
Level of Service		B	A		B		B	B		B	C	
Approach Delay (s)		11.6			15.0			14.8			28.5	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		

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

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	49	676	342	21	52	57
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	735	372	23	57	62
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	395				1224	383
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	395				1224	383
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				70	91
cM capacity (veh/h)	1164				189	664

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	788	395	118
Volume Left	53	0	57
Volume Right	0	23	62
cSH	1164	1700	302
Volume to Capacity	0.05	0.23	0.39
Queue Length 95th (ft)	4	0	45
Control Delay (s)	1.2	0.0	24.5
Lane LOS	A		C
Approach Delay (s)	1.2	0.0	24.5
Approach LOS			C

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	118	723	547	69	73	240
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	786	595	75	79	261
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	670				1674	632
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	670				1674	632
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				12	46
cM capacity (veh/h)	921				90	480

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	914	670	340
Volume Left	128	0	79
Volume Right	0	75	261
cSH	921	1700	239
Volume to Capacity	0.14	0.39	1.42
Queue Length 95th (ft)	12	0	481
Control Delay (s)	3.5	0.0	251.3
Lane LOS	A		F
Approach Delay (s)	3.5	0.0	251.3
Approach LOS			F

Intersection Summary			
Average Delay	46.1		
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	SEL	SET	SER	NWL	NWT	NWR	SWL	SWR
Lane Configurations											
Volume (vph)	175	0	36	0	600	168	5	173	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.9		4.9	4.9			
Lane Util. Factor		0.97			0.95		1.00	1.00			
Frt		0.97			0.97		1.00	1.00			
Flt Protected		0.96			1.00		0.95	1.00			
Satd. Flow (prot)		3381			3423		1770	1863			
Flt Permitted		0.77			1.00		0.31	1.00			
Satd. Flow (perm)		2709			3423		586	1863			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	0	39	0	652	183	5	188	0	0	0
RTOR Reduction (vph)	0	29	0	0	42	0	0	0	0	0	0
Lane Group Flow (vph)	0	200	0	0	793	0	5	188	0	0	0
Turn Type	Perm			Perm			Perm		Perm		Over
Protected Phases		4			2			2			4
Permitted Phases	4			2			2		2	4	
Actuated Green, G (s)		10.7			23.7		23.7	23.7			
Effective Green, g (s)		10.7			23.7		23.7	23.7			
Actuated g/C Ratio		0.24			0.54		0.54	0.54			
Clearance Time (s)		4.5			4.9		4.9	4.9			
Vehicle Extension (s)		5.0			4.0		4.0	4.0			
Lane Grp Cap (vph)		662			1852		317	1008			
v/s Ratio Prot					c0.23			0.10			
v/s Ratio Perm		c0.07					0.01				
v/c Ratio		0.30			0.43		0.02	0.19			
Uniform Delay, d1		13.5			6.0		4.7	5.1			
Progression Factor		1.00			1.00		1.00	1.00			
Incremental Delay, d2		0.5			0.2		0.0	0.1			
Delay (s)		14.0			6.2		4.7	5.3			
Level of Service		B			A		A	A			
Approach Delay (s)		14.0			6.2			5.2		0.0	
Approach LOS		B			A			A		A	

Intersection Summary

HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	43.8	Sum of lost time (s)	9.4
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	SEL	SET	SER	NWL	NWT	NWR	SWL	SWR
Lane Configurations											
Volume (vph)	207	0	33	0	606	86	21	806	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.9		4.9	4.9			
Lane Util. Factor		0.97			0.95		1.00	1.00			
Frt		0.98			0.98		1.00	1.00			
Flt Protected		0.96			1.00		0.95	1.00			
Satd. Flow (prot)		3393			3474		1770	1863			
Flt Permitted		0.76			1.00		0.35	1.00			
Satd. Flow (perm)		2672			3474		648	1863			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	225	0	36	0	659	93	23	876	0	0	0
RTOR Reduction (vph)	0	9	0	0	7	0	0	0	0	0	0
Lane Group Flow (vph)	0	252	0	0	745	0	23	876	0	0	0
Turn Type	Perm			Perm			Perm		Perm		Over
Protected Phases		4			2			2			4
Permitted Phases	4			2			2		2	4	
Actuated Green, G (s)		19.0			62.2		62.2	62.2			
Effective Green, g (s)		19.0			62.2		62.2	62.2			
Actuated g/C Ratio		0.21			0.69		0.69	0.69			
Clearance Time (s)		4.5			4.9		4.9	4.9			
Vehicle Extension (s)		5.0			4.0		4.0	4.0			
Lane Grp Cap (vph)		560			2385		445	1279			
v/s Ratio Prot					0.21			c0.47			
v/s Ratio Perm		c0.09					0.04				
v/c Ratio		0.45			0.31		0.05	0.68			
Uniform Delay, d1		31.2			5.7		4.6	8.4			
Progression Factor		1.00			1.00		1.00	1.00			
Incremental Delay, d2		1.2			0.1		0.1	1.7			
Delay (s)		32.4			5.8		4.7	10.1			
Level of Service		C			A		A	B			
Approach Delay (s)		32.4			5.8			9.9		0.0	
Approach LOS		C			A			A		A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	9.4
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			387			273
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			373			286
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1023	1085			1623	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL
Lane Configurations												
Volume (vph)	0	96	11	35	869	1	42	288	0	42	3	1600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6	4.6				4.6	4.6	4.2	4.6
Lane Util. Factor	1.00			0.95	0.95				0.95	1.00	1.00	0.97
Frt	0.86			0.86	0.85				1.00	0.85	0.86	0.96
Flt Protected	1.00			1.00	1.00				0.95	1.00	1.00	0.97
Satd. Flow (prot)	1611			1529	1504				3362	1583	1611	3340
Flt Permitted	1.00			0.99	1.00				0.95	1.00	1.00	0.46
Satd. Flow (perm)	1611			1521	1504				3362	1583	1611	1574
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	104	12	38	945	1	46	313	0	46	3	1739
RTOR Reduction (vph)	60	0	0	0	0	0	0	0	0	39	3	0
Lane Group Flow (vph)	44	0	0	504	492	0	0	0	359	7	0	2431
Turn Type			Perm		Perm		Perm	Perm		Perm	custom	
Protected Phases	6			6					4		8	5
Permitted Phases			6		6		4	4		4		2
Actuated Green, G (s)	51.2			51.2	51.2				17.5	17.5	17.9	39.6
Effective Green, g (s)	51.2			51.2	51.2				17.5	17.5	17.9	39.6
Actuated g/C Ratio	0.42			0.42	0.42				0.14	0.14	0.15	0.32
Clearance Time (s)	4.6			4.6	4.6				4.6	4.6	4.2	4.6
Vehicle Extension (s)	5.0			5.0	5.0				4.0	4.0	2.0	5.0
Lane Grp Cap (vph)	676			638	631				482	227	236	1083
v/s Ratio Prot	0.03										0.00	c0.73
v/s Ratio Perm				c0.33	0.33				0.11	0.00		
v/c Ratio	0.06			0.79	0.78				1.41dl	0.03	0.00	2.24
Uniform Delay, d1	21.2			30.8	30.6				50.2	45.0	44.5	41.2
Progression Factor	1.00			1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1			7.5	7.1				6.6	0.1	0.0	563.1
Delay (s)	21.2			38.3	37.7				56.7	45.1	44.5	604.3
Level of Service	C			D	D				E	D	D	F
Approach Delay (s)	21.2			38.0					55.4			604.3
Approach LOS	C			D					E			F

Intersection Summary			
HCM Average Control Delay	388.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	122.1	Sum of lost time (s)	13.8
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		

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

c Critical Lane Group

Movement	SER	SER2
Lane Configurations		
Volume (vph)	636	1
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	691	1
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		
Intersection Summary		

Movement	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL2	SEL
Lane Configurations												
Volume (vph)	0	40	22	1991	2	9	691	0	44	6	1	2206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6		4.6	4.6				4.6	4.6	4.2		4.6
Lane Util. Factor	1.00		0.95	0.95				0.95	1.00	1.00		0.97
Frt	0.86		0.85	0.85				1.00	0.85	0.86		0.97
Flt Protected	1.00		1.00	1.00				0.95	1.00	1.00		0.96
Satd. Flow (prot)	1611		1510	1504				3362	1583	1611		3380
Flt Permitted	1.00		1.00	1.00				0.95	1.00	1.00		0.95
Satd. Flow (perm)	1611		1510	1504				3362	1583	1611		3361
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	43	24	2164	2	10	751	0	48	7	1	2398
RTOR Reduction (vph)	28	0	0	0	0	0	0	0	32	6	0	0
Lane Group Flow (vph)	15	0	1106	1084	0	0	0	761	16	1	0	2904
Turn Type				custom		Perm	Perm		Perm	custom	Perm	
Protected Phases	6		6	2				4		8		5
Permitted Phases				6		4	4		4		5	2
Actuated Green, G (s)	53.4		53.4	77.8				24.4	24.4	24.8		53.8
Effective Green, g (s)	53.4		53.4	77.8				24.4	24.4	24.8		53.8
Actuated g/C Ratio	0.36		0.36	0.52				0.16	0.16	0.17		0.36
Clearance Time (s)	4.6		4.6	4.6				4.6	4.6	4.2		4.6
Vehicle Extension (s)	5.0		5.0	5.0				4.0	4.0	2.0		5.0
Lane Grp Cap (vph)	574		538	780				547	258	266		1209
v/s Ratio Prot	0.01		c0.73	0.23						0.00		c0.47
v/s Ratio Perm				0.49				0.23	0.01			c0.39
v/c Ratio	0.03		2.06	1.39				2.64dl	0.06	0.00		2.40
Uniform Delay, d1	31.4		48.3	36.1				62.8	53.1	52.3		52.1
Progression Factor	1.00		1.00	1.00				1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0		481.5	183.3				187.1	0.1	0.0		633.4
Delay (s)	31.4		529.8	219.4				249.9	53.3	52.3		685.5
Level of Service	C		F	F				F	D	D		F
Approach Delay (s)	31.4		376.1					238.2				685.5
Approach LOS	C		F					F				F

Intersection Summary

HCM Average Control Delay	505.4	HCM Level of Service	F
HCM Volume to Capacity ratio	2.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.4
Intersection Capacity Utilization	169.6%	ICU Level of Service	H
Analysis Period (min)	15		

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

Movement	SER	SER2
Lane Configurations		
Volume (vph)	458	6
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	498	7
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		
Intersection Summary		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	86	1021	258	15	621	31	157	308	151	20	35	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.95		1.00	0.98	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3526	1583		3510		1770	1771		1770	1819	
Flt Permitted		0.83	1.00		0.92		0.73	1.00		0.28	1.00	
Satd. Flow (perm)		2921	1583		3229		1356	1771		525	1819	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	1110	280	16	675	34	171	335	164	22	38	7
RTOR Reduction (vph)	0	0	116	0	6	0	0	29	0	0	4	0
Lane Group Flow (vph)	0	1203	164	0	719	0	171	470	0	22	41	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Actuated Green, G (s)		26.6	26.6		26.6		22.1	22.1		22.1	22.1	
Effective Green, g (s)		26.6	26.6		26.6		22.1	22.1		22.1	22.1	
Actuated g/C Ratio		0.46	0.46		0.46		0.38	0.38		0.38	0.38	
Clearance Time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1342	727		1483		518	676		200	694	
v/s Ratio Prot								c0.27			0.02	
v/s Ratio Perm		c0.41	0.10		0.22		0.13			0.04		
v/c Ratio		0.90	0.23		0.48		0.33	0.70		0.11	0.06	
Uniform Delay, d1		14.4	9.4		10.9		12.7	15.1		11.6	11.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.0	0.1		0.1		0.1	2.5		0.1	0.0	
Delay (s)		22.3	9.5		11.0		12.8	17.6		11.6	11.3	
Level of Service		C	A		B		B	B		B	B	
Approach Delay (s)		19.9			11.0			16.4			11.4	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	9.2
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	75	1030	286	41	1187	158	153	232	85	297	306	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.98		1.00	0.96		1.00	0.99	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3527	1583		3473		1770	1788		1770	1835	
Flt Permitted		0.59	1.00		0.82		0.39	1.00		0.42	1.00	
Satd. Flow (perm)		2072	1583		2841		723	1788		776	1835	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1120	311	45	1290	172	166	252	92	323	333	36
RTOR Reduction (vph)	0	0	83	0	11	0	0	15	0	0	4	0
Lane Group Flow (vph)	0	1202	228	0	1496	0	166	329	0	323	365	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Actuated Green, G (s)		46.4	46.4		46.4		34.4	34.4		34.4	34.4	
Effective Green, g (s)		46.4	46.4		46.4		34.4	34.4		34.4	34.4	
Actuated g/C Ratio		0.52	0.52		0.52		0.38	0.38		0.38	0.38	
Clearance Time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1068	816		1465		276	683		297	701	
v/s Ratio Prot								0.18			0.20	
v/s Ratio Perm		c0.58	0.14		0.53		0.23			c0.42		
v/c Ratio		1.13	0.28		1.02		0.60	0.48		1.09	0.52	
Uniform Delay, d1		21.8	12.3		21.8		22.3	21.1		27.8	21.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		68.9	0.1		29.0		2.5	0.2		77.6	0.3	
Delay (s)		90.7	12.4		50.8		24.8	21.2		105.4	21.8	
Level of Service		F	B		D		C	C		F	C	
Approach Delay (s)		74.6			50.8			22.4			60.8	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM Average Control Delay	57.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1173	18	8	287	0	27	0	16	255	505	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00		1.00	1.00	0.95	
Frt		1.00			1.00		1.00		0.85	1.00	0.94	
Flt Protected		1.00			1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3531			3534		1770		1583	1770	3314	
Flt Permitted		1.00			0.92		0.19		1.00	0.95	1.00	
Satd. Flow (perm)		3531			3244		349		1583	1770	3314	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1275	20	9	312	0	29	0	17	277	549	403
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	10	0	223	0
Lane Group Flow (vph)	0	1293	0	0	321	0	29	0	7	277	729	0
Turn Type				Perm			D.Pm		custom	Perm		
Protected Phases		4			4				2		2	
Permitted Phases				4			2		2	2		
Actuated Green, G (s)		26.2			26.2		24.1		24.1	24.1	24.1	
Effective Green, g (s)		26.2			26.2		24.1		24.1	24.1	24.1	
Actuated g/C Ratio		0.44			0.44		0.41		0.41	0.41	0.41	
Clearance Time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Vehicle Extension (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lane Grp Cap (vph)		1560			1433		142		643	719	1347	
v/s Ratio Prot		c0.37							0.00		c0.22	
v/s Ratio Perm					0.10		0.08			0.16		
v/c Ratio		0.83			0.22		0.20		0.01	0.39	0.54	
Uniform Delay, d1		14.6			10.3		11.4		10.5	12.4	13.4	
Progression Factor		1.00			1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		3.6			0.0		0.3		0.0	0.1	0.2	
Delay (s)		18.2			10.3		11.7		10.5	12.5	13.6	
Level of Service		B			B		B		B	B	B	
Approach Delay (s)		18.2			10.3			11.2			13.4	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
65: E Divisadero St & N Fulton St

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1184	27	7	1073	0	30	0	43	284	221	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00		1.00	1.00	0.95	
Frt		1.00			1.00		1.00		0.85	1.00	0.91	
Flt Protected		1.00			1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3528			3538		1770		1583	1770	3220	
Flt Permitted		1.00			0.94		0.37		1.00	0.95	1.00	
Satd. Flow (perm)		3528			3342		690		1583	1770	3220	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1287	29	8	1166	0	33	0	47	309	240	361
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	13	0	18	0
Lane Group Flow (vph)	0	1313	0	0	1174	0	33	0	34	309	583	0
Turn Type				Perm			D.Pm		custom	Perm		
Protected Phases		4			4				2		2	
Permitted Phases				4			2		2	2		
Actuated Green, G (s)		26.5			26.5		24.1		24.1	24.1	24.1	
Effective Green, g (s)		26.5			26.5		24.1		24.1	24.1	24.1	
Actuated g/C Ratio		0.44			0.44		0.40		0.40	0.40	0.40	
Clearance Time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Vehicle Extension (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lane Grp Cap (vph)		1569			1486		279		640	716	1302	
v/s Ratio Prot		c0.37							0.02		c0.18	
v/s Ratio Perm					0.35		0.05			0.17		
v/c Ratio		0.84			0.79		0.12		0.05	0.43	0.45	
Uniform Delay, d1		14.6			14.2		11.1		10.8	12.8	12.9	
Progression Factor		1.00			1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		3.9			2.7		0.1		0.0	0.2	0.1	
Delay (s)		18.5			16.9		11.2		10.8	13.0	13.0	
Level of Service		B			B		B		B	B	B	
Approach Delay (s)		18.5			16.9			11.0			13.0	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
66: E Divisadero St & N Van Ness Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Volume (vph)	398	720	272	6	226	44	60	163	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5			4.2				
Lane Util. Factor		0.95			0.95			0.95				
Frt		0.97			0.98			0.99				
Flt Protected		0.99			1.00			0.99				
Satd. Flow (prot)		3387			3451			3463				
Flt Permitted		0.75			0.92			0.99				
Satd. Flow (perm)		2581			3185			3463				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	783	296	7	246	48	65	177	16	0	0	0
RTOR Reduction (vph)	0	27	0	0	19	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	1485	0	0	282	0	0	252	0	0	0	0
Turn Type	Perm			Perm			Split					
Protected Phases		8			4		6	6				
Permitted Phases	8			4								
Actuated Green, G (s)		45.7			45.7			22.1				
Effective Green, g (s)		45.7			45.7			22.1				
Actuated g/C Ratio		0.60			0.60			0.29				
Clearance Time (s)		4.5			4.5			4.2				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		1542			1903			1000				
v/s Ratio Prot								c0.07				
v/s Ratio Perm		c0.58			0.09							
v/c Ratio		0.96			0.15			0.25				
Uniform Delay, d1		14.6			6.8			20.9				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		14.9			0.0			0.0				
Delay (s)		29.4			6.8			20.9				
Level of Service		C			A			C				
Approach Delay (s)		29.4			6.8			20.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	8.7
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Volume (vph)	800	508	179	9	897	108	178	537	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5			4.2				
Lane Util. Factor		0.95			0.95			0.95				
Frt		0.98			0.98			1.00				
Flt Protected		0.97			1.00			0.99				
Satd. Flow (prot)		3384			3481			3485				
Flt Permitted		0.50			0.93			0.99				
Satd. Flow (perm)		1732			3240			3485				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	870	552	195	10	975	117	193	584	18	0	0	0
RTOR Reduction (vph)	0	8	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1609	0	0	1098	0	0	794	0	0	0	0
Turn Type	Perm			Perm			Split					
Protected Phases		8			4		6	6				
Permitted Phases	8			4								
Actuated Green, G (s)		104.5			104.5			26.8				
Effective Green, g (s)		104.5			104.5			26.8				
Actuated g/C Ratio		0.75			0.75			0.19				
Clearance Time (s)		4.5			4.5			4.2				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		1293			2418			667				
v/s Ratio Prot								c0.23				
v/s Ratio Perm		c0.93			0.34							
v/c Ratio		2.68dl			0.45			1.19				
Uniform Delay, d1		17.8			6.8			56.6				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		116.8			0.0			100.2				
Delay (s)		134.5			6.9			156.8				
Level of Service		F			A			F				
Approach Delay (s)		134.5			6.9			156.8			0.0	
Approach LOS		F			A			F			A	

Intersection Summary			
HCM Average Control Delay	99.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

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

HCM Signalized Intersection Capacity Analysis
67: N Roosevelt Ave. & N H St

4/25/2011

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	31	0	18	2	0	0	1	2221	29	140	930	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Lane Util. Factor	1.00	1.00			1.00			0.95	1.00		0.95	
Frt	1.00	0.85			1.00			1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95			1.00	1.00		0.99	
Satd. Flow (prot)	1770	1583			1770			3539	1583		3513	
Flt Permitted	0.76	1.00			0.74			0.95	1.00		0.50	
Satd. Flow (perm)	1409	1583			1386			3379	1583		1767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	0	20	2	0	0	1	2414	32	152	1011	7
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	34	20	0	0	2	0	0	2415	28	0	1170	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)	14.0	14.0			14.0			43.8	43.8		43.8	
Effective Green, g (s)	14.0	14.0			14.0			43.8	43.8		43.8	
Actuated g/C Ratio	0.21	0.21			0.21			0.66	0.66		0.66	
Clearance Time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0			5.0			4.0	4.0		4.0	
Lane Grp Cap (vph)	296	333			291			2222	1041		1162	
v/s Ratio Prot		0.01										
v/s Ratio Perm	c0.02				0.00			c0.71	0.02		0.66	
v/c Ratio	0.11	0.06			0.01			1.09	0.03		1.25dl	
Uniform Delay, d1	21.3	21.0			20.8			11.4	4.0		11.4	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.2			0.0			47.4	0.0		28.0	
Delay (s)	21.6	21.2			20.8			58.8	4.0		39.4	
Level of Service	C	C			C			E	A		D	
Approach Delay (s)		21.5			20.8			58.1			39.4	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM Average Control Delay	51.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	8.8
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		

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

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	67	0	23	0	2	0	1	2644	57	78	1800	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Lane Util. Factor	1.00	1.00			1.00			0.95	1.00		0.95	
Frt	1.00	0.85			1.00			1.00	0.85		1.00	
Flt Protected	0.95	1.00			1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1770	1583			1863			3539	1583		3532	
Flt Permitted	0.76	1.00			1.00			0.95	1.00		0.52	
Satd. Flow (perm)	1409	1583			1863			3378	1583		1830	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	0	25	0	2	0	1	2874	62	85	1957	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	5	0	0	0
Lane Group Flow (vph)	73	25	0	0	2	0	0	2875	57	0	2043	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)	21.1	21.1			21.1			78.2	78.2		78.2	
Effective Green, g (s)	21.1	21.1			21.1			78.2	78.2		78.2	
Actuated g/C Ratio	0.20	0.20			0.20			0.72	0.72		0.72	
Clearance Time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0			5.0			4.0	4.0		4.0	
Lane Grp Cap (vph)	275	309			364			2444	1145		1324	
v/s Ratio Prot		0.02			0.00							
v/s Ratio Perm	c0.05							0.85	0.04		c1.12	
v/c Ratio	0.27	0.08			0.01			1.18	0.05		1.54	
Uniform Delay, d1	36.9	35.6			35.0			14.9	4.3		14.9	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.2			0.0			84.0	0.0		248.2	
Delay (s)	38.0	35.8			35.1			98.9	4.3		263.1	
Level of Service	D	D			D			F	A		F	
Approach Delay (s)		37.4			35.1			97.0			263.1	
Approach LOS		D			D			F			F	

Intersection Summary

HCM Average Control Delay	162.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	108.1	Sum of lost time (s)	8.8
Intersection Capacity Utilization	137.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	174	59	86	114	0	0	0	0	181	1445	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2						4.9	
Lane Util. Factor		1.00			1.00						0.91	
Frt		0.97			1.00						0.99	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1799			1824						5024	
Flt Permitted		1.00			0.75						0.99	
Satd. Flow (perm)		1799			1395						5024	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	189	64	93	124	0	0	0	0	197	1571	85
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	246	0	0	217	0	0	0	0	0	1844	0
Turn Type				Perm						Split		
Protected Phases		8			8					6	6	
Permitted Phases				8								
Actuated Green, G (s)		13.1			13.1						23.3	
Effective Green, g (s)		13.1			13.1						23.3	
Actuated g/C Ratio		0.29			0.29						0.51	
Clearance Time (s)		4.2			4.2						4.9	
Vehicle Extension (s)		4.0			4.0						5.0	
Lane Grp Cap (vph)		518			402						2573	
v/s Ratio Prot		0.14									c0.37	
v/s Ratio Perm					c0.16							
v/c Ratio		0.47			0.54						0.72	
Uniform Delay, d1		13.4			13.7						8.6	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.9			1.8						1.2	
Delay (s)		14.3			15.4						9.8	
Level of Service		B			B						A	
Approach Delay (s)		14.3			15.4			0.0			9.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	9.1
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: E McKenzie Ave. & N Blackstone Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	326	160	164	303	0	0	0	0	184	1788	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2						4.9	
Lane Util. Factor		1.00			1.00						0.91	
Frt		0.96			1.00						0.99	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1780			1831						4995	
Flt Permitted		1.00			0.45						1.00	
Satd. Flow (perm)		1780			840						4995	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	354	174	178	329	0	0	0	0	200	1943	215
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	527	0	0	507	0	0	0	0	0	2347	0
Turn Type				Perm						Split		
Protected Phases		8			8					6	6	
Permitted Phases				8								
Actuated Green, G (s)		54.8			54.8						46.1	
Effective Green, g (s)		54.8			54.8						46.1	
Actuated g/C Ratio		0.50			0.50						0.42	
Clearance Time (s)		4.2			4.2						4.9	
Vehicle Extension (s)		4.0			4.0						5.0	
Lane Grp Cap (vph)		887			418						2093	
v/s Ratio Prot		0.30									c0.47	
v/s Ratio Perm					c0.60							
v/c Ratio		0.59			1.21						1.12	
Uniform Delay, d1		19.7			27.6						31.9	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		1.3			116.1						61.6	
Delay (s)		20.9			143.7						93.6	
Level of Service		C			F						F	
Approach Delay (s)		20.9			143.7			0.0			93.6	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM Average Control Delay	89.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	265	0	0	161	92	45	642	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2			4.9				
Lane Util. Factor		1.00			1.00			0.91				
Frt		1.00			0.95			0.99				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1843			1771			5010				
Flt Permitted		0.87			1.00			1.00				
Satd. Flow (perm)		1624			1771			5010				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	288	0	0	175	100	49	698	64	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	367	0	0	230	0	0	793	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		4			8		2	2				
Permitted Phases	4											
Actuated Green, G (s)		15.3			15.3			19.2				
Effective Green, g (s)		15.3			15.3			19.2				
Actuated g/C Ratio		0.35			0.35			0.44				
Clearance Time (s)		4.2			4.2			4.9				
Vehicle Extension (s)		4.0			4.0			0.2				
Lane Grp Cap (vph)		570			621			2206				
v/s Ratio Prot					0.13			c0.16				
v/s Ratio Perm		c0.23										
v/c Ratio		0.64			0.37			0.36				
Uniform Delay, d1		11.9			10.6			8.1				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		2.8			0.5			0.0				
Delay (s)		14.6			11.1			8.1				
Level of Service		B			B			A				
Approach Delay (s)		14.6			11.1			8.1			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	9.1
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	110	0	0	136	151	37	1517	46	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2			4.9				
Lane Util. Factor		1.00			1.00			0.91				
Frt		1.00			0.93			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1828			1731			5058				
Flt Permitted		0.78			1.00			1.00				
Satd. Flow (perm)		1457			1731			5058				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	120	0	0	148	164	40	1649	50	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	192	0	0	308	0	0	1733	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		4			8		2	2				
Permitted Phases	4											
Actuated Green, G (s)		13.4			13.4			20.3				
Effective Green, g (s)		13.4			13.4			20.3				
Actuated g/C Ratio		0.31			0.31			0.47				
Clearance Time (s)		4.2			4.2			4.9				
Vehicle Extension (s)		4.0			4.0			0.2				
Lane Grp Cap (vph)		456			542			2399				
v/s Ratio Prot					c0.18			c0.34				
v/s Ratio Perm		0.13										
v/c Ratio		0.42			0.57			0.72				
Uniform Delay, d1		11.6			12.3			9.0				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.9			1.7			0.9				
Delay (s)		12.5			13.9			9.9				
Level of Service		B			B			A				
Approach Delay (s)		12.5			13.9			9.9			0.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	42.8	Sum of lost time (s)	9.1
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	636	163	0	0	0	0	0	0	886	836	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2									4.6	
Lane Util. Factor		0.95									0.95	
Frt		0.97									1.00	
Flt Protected		1.00									0.97	
Satd. Flow (prot)		3431									3450	
Flt Permitted		1.00									0.97	
Satd. Flow (perm)		3431									3450	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	691	177	0	0	0	0	0	0	963	909	0
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	38	0
Lane Group Flow (vph)	0	843	0	0	0	0	0	0	0	0	1834	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		31.1									48.9	
Effective Green, g (s)		31.1									48.9	
Actuated g/C Ratio		0.35									0.55	
Clearance Time (s)		4.2									4.6	
Vehicle Extension (s)		6.4									5.6	
Lane Grp Cap (vph)		1202									1900	
v/s Ratio Prot		c0.25										
v/s Ratio Perm											0.53	
v/c Ratio		0.70									0.97	
Uniform Delay, d1		24.8									19.1	
Progression Factor		1.00									1.00	
Incremental Delay, d2		2.9									13.7	
Delay (s)		27.8									32.8	
Level of Service		C									C	
Approach Delay (s)		27.8			0.0			0.0			32.8	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	8.8
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	563	227	0	0	0	0	0	0	857	585	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2									4.6	
Lane Util. Factor		0.95									0.95	
Frt		0.96									1.00	
Flt Protected		1.00									0.97	
Satd. Flow (prot)		3387									3437	
Flt Permitted		1.00									0.97	
Satd. Flow (perm)		3387									3437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	612	247	0	0	0	0	0	0	932	636	0
RTOR Reduction (vph)	0	60	0	0	0	0	0	0	0	0	87	0
Lane Group Flow (vph)	0	799	0	0	0	0	0	0	0	0	1481	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		29.1									34.3	
Effective Green, g (s)		29.1									34.3	
Actuated g/C Ratio		0.40									0.48	
Clearance Time (s)		4.2									4.6	
Vehicle Extension (s)		6.4									5.6	
Lane Grp Cap (vph)		1365									1633	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.43	
v/c Ratio		0.59									1.00dl	
Uniform Delay, d1		16.8									17.5	
Progression Factor		1.00									1.00	
Incremental Delay, d2		1.3									8.3	
Delay (s)		18.2									25.8	
Level of Service		B									C	
Approach Delay (s)		18.2			0.0			0.0			25.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	8.8
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

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

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	370	1155	0	0	287	330	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6	4.6					
Lane Util. Factor	1.00	1.00			0.95	1.00					
Frt	1.00	1.00			1.00	0.85					
Flt Protected	0.95	0.95			1.00	1.00					
Satd. Flow (prot)	1770	1770			3539	1583					
Flt Permitted	0.95	0.95			1.00	1.00					
Satd. Flow (perm)	1770	1770			3539	1583					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	1255	0	0	312	359	0	0	0	0	0
RTOR Reduction (vph)	37	0	0	0	0	86	0	0	0	0	0
Lane Group Flow (vph)	365	1255	0	0	312	273	0	0	0	0	0
Turn Type	Split					Perm					
Protected Phases	4	4			2						
Permitted Phases						2					
Actuated Green, G (s)	71.4	71.4			19.2	19.2					
Effective Green, g (s)	71.4	71.4			19.2	19.2					
Actuated g/C Ratio	0.72	0.72			0.19	0.19					
Clearance Time (s)	4.6	4.6			4.6	4.6					
Vehicle Extension (s)	5.0	5.0			4.5	4.5					
Lane Grp Cap (vph)	1266	1266			681	305					
v/s Ratio Prot	0.21	c0.71			0.09						
v/s Ratio Perm						c0.17					
v/c Ratio	0.29	0.99			0.46	0.89					
Uniform Delay, d1	5.1	13.9			35.7	39.3					
Progression Factor	1.00	1.00			1.00	1.00					
Incremental Delay, d2	0.3	23.2			0.8	27.4					
Delay (s)	5.4	37.1			36.5	66.7					
Level of Service	A	D			D	E					
Approach Delay (s)		29.4			52.7			0.0		0.0	
Approach LOS		C			D			A		A	

Intersection Summary

HCM Average Control Delay	36.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	99.8	Sum of lost time (s)	9.2
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	321	1101	0	0	507	824	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6	4.6					
Lane Util. Factor	1.00	1.00			0.95	1.00					
Frt	1.00	1.00			1.00	0.85					
Flt Protected	0.95	0.95			1.00	1.00					
Satd. Flow (prot)	1770	1770			3539	1583					
Flt Permitted	0.95	0.95			1.00	1.00					
Satd. Flow (perm)	1770	1770			3539	1583					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	349	1197	0	0	551	896	0	0	0	0	0
RTOR Reduction (vph)	77	0	0	0	0	33	0	0	0	0	0
Lane Group Flow (vph)	272	1197	0	0	551	863	0	0	0	0	0
Turn Type	Split					Perm					
Protected Phases	4	4			2						
Permitted Phases						2					
Actuated Green, G (s)	80.4	80.4			60.4	60.4					
Effective Green, g (s)	80.4	80.4			60.4	60.4					
Actuated g/C Ratio	0.54	0.54			0.40	0.40					
Clearance Time (s)	4.6	4.6			4.6	4.6					
Vehicle Extension (s)	5.0	5.0			4.5	4.5					
Lane Grp Cap (vph)	949	949			1425	637					
v/s Ratio Prot	0.15	c0.68			0.16						
v/s Ratio Perm						c0.55					
v/c Ratio	0.29	1.26			0.39	1.36					
Uniform Delay, d1	19.1	34.8			31.7	44.8					
Progression Factor	1.00	1.00			1.00	1.00					
Incremental Delay, d2	0.4	126.1			0.3	169.9					
Delay (s)	19.4	160.9			32.0	214.7					
Level of Service	B	F			C	F					
Approach Delay (s)		129.0			145.1			0.0		0.0	
Approach LOS		F			F			A		A	

Intersection Summary

HCM Average Control Delay	136.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
72: 180 WB Ramps & N Fulton St

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↑↑↳	
Volume (vph)	0	1013	563	6	51	0	0	0	0	0	955	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.7	3.7		3.7						4.1	
Lane Util. Factor		1.00	1.00		1.00						0.95	
Frt		1.00	0.85		1.00						0.98	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1863	1583		1852						3460	
Flt Permitted		1.00	1.00		0.67						1.00	
Satd. Flow (perm)		1863	1583		1250						3460	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1101	612	7	55	0	0	0	0	0	1038	182
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	1101	604	0	62	0	0	0	0	0	1206	0
Turn Type			Perm	Perm								
Protected Phases		4			8						6	
Permitted Phases			4	8								
Actuated Green, G (s)		57.3	57.3		57.3						34.9	
Effective Green, g (s)		57.3	57.3		57.3						34.9	
Actuated g/C Ratio		0.57	0.57		0.57						0.35	
Clearance Time (s)		3.7	3.7		3.7						4.1	
Vehicle Extension (s)		5.0	5.0		4.8						4.6	
Lane Grp Cap (vph)		1067	907		716						1208	
v/s Ratio Prot		c0.59									c0.35	
v/s Ratio Perm			0.38		0.05							
v/c Ratio		1.03	0.67		0.09						1.00	
Uniform Delay, d1		21.4	14.7		9.6						32.5	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		36.1	2.5		0.1						25.3	
Delay (s)		57.4	17.2		9.7						57.8	
Level of Service		E	B		A						E	
Approach Delay (s)		43.0			9.7			0.0			57.8	
Approach LOS		D			A			A			E	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1303	479	7	97	0	0	0	0	0	956	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.7	3.7		3.7						4.1	
Lane Util. Factor		1.00	1.00		1.00						0.95	
Frt		1.00	0.85		1.00						0.96	
Flt Protected		1.00	1.00		1.00						1.00	
Satd. Flow (prot)		1863	1583		1856						3403	
Flt Permitted		1.00	1.00		0.64						1.00	
Satd. Flow (perm)		1863	1583		1184						3403	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1416	521	8	105	0	0	0	0	0	1039	357
RTOR Reduction (vph)	0	0	7	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	1416	514	0	113	0	0	0	0	0	1368	0
Turn Type			Perm	Perm								
Protected Phases		4			8						6	
Permitted Phases			4	8								
Actuated Green, G (s)		71.3	71.3		71.3						40.9	
Effective Green, g (s)		71.3	71.3		71.3						40.9	
Actuated g/C Ratio		0.59	0.59		0.59						0.34	
Clearance Time (s)		3.7	3.7		3.7						4.1	
Vehicle Extension (s)		5.0	5.0		4.8						4.6	
Lane Grp Cap (vph)		1107	941		703						1160	
v/s Ratio Prot		c0.76									c0.40	
v/s Ratio Perm			0.32		0.10							
v/c Ratio		1.28	0.55		0.16						1.18	
Uniform Delay, d1		24.4	14.6		10.9						39.5	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		132.7	1.1		0.2						89.7	
Delay (s)		157.0	15.8		11.1						129.3	
Level of Service		F	B		B						F	
Approach Delay (s)		119.0			11.1			0.0			129.3	
Approach LOS		F			B			A			F	

Intersection Summary

HCM Average Control Delay	119.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	7.8
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1040	0	56	611	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6		
Lane Util. Factor	1.00			0.95		
Frt	1.00			1.00		
Flt Protected	0.95			1.00		
Satd. Flow (prot)	1770			3524		
Flt Permitted	0.95			1.00		
Satd. Flow (perm)	1770			3524		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1130	0	61	664	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1130	0	0	725	0	0
Turn Type			Split			
Protected Phases	4		2	2		
Permitted Phases						
Actuated Green, G (s)	57.4			23.0		
Effective Green, g (s)	57.4			23.0		
Actuated g/C Ratio	0.64			0.26		
Clearance Time (s)	4.6			4.6		
Vehicle Extension (s)	3.3			4.9		
Lane Grp Cap (vph)	1134			905		
v/s Ratio Prot	c0.64			c0.21		
v/s Ratio Perm						
v/c Ratio	1.00			0.80		
Uniform Delay, d1	16.0			31.2		
Progression Factor	1.00			1.00		
Incremental Delay, d2	25.7			5.8		
Delay (s)	41.7			37.0		
Level of Service	D			D		
Approach Delay (s)	41.7			37.0	0.0	
Approach LOS	D			D	A	

Intersection Summary

HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	9.2
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1305	0	105	721	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6		
Lane Util. Factor	1.00			0.95		
Frt	1.00			1.00		
Flt Protected	0.95			0.99		
Satd. Flow (prot)	1770			3517		
Flt Permitted	0.95			0.99		
Satd. Flow (perm)	1770			3517		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1418	0	114	784	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1418	0	0	898	0	0
Turn Type			Split			
Protected Phases	4		2	2		
Permitted Phases						
Actuated Green, G (s)	98.4			32.4		
Effective Green, g (s)	98.4			32.4		
Actuated g/C Ratio	0.70			0.23		
Clearance Time (s)	4.6			4.6		
Vehicle Extension (s)	3.3			4.9		
Lane Grp Cap (vph)	1244			814		
v/s Ratio Prot	c0.80			c0.26		
v/s Ratio Perm						
v/c Ratio	1.14			1.10		
Uniform Delay, d1	20.8			53.8		
Progression Factor	1.00			1.00		
Incremental Delay, d2	73.1			63.7		
Delay (s)	93.9			117.5		
Level of Service	F			F		
Approach Delay (s)	93.9			117.5	0.0	
Approach LOS	F			F	A	

Intersection Summary

HCM Average Control Delay	103.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1474	145	111	376	0	0	0	0	376	1457	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	
Lane Util. Factor		0.95		1.00	0.95						0.91	
Frt		0.99		1.00	1.00						0.98	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3492		1770	3539						4937	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3492		1770	3539						4937	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1602	158	121	409	0	0	0	0	409	1584	316
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	1755	0	121	409	0	0	0	0	0	2295	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Actuated Green, G (s)		64.8		8.3	76.8						64.1	
Effective Green, g (s)		64.8		8.3	76.8						64.1	
Actuated g/C Ratio		0.43		0.06	0.51						0.43	
Clearance Time (s)		4.2		3.7	4.2						4.9	
Vehicle Extension (s)		6.8		2.0	6.8						0.2	
Lane Grp Cap (vph)		1509		98	1812						2110	
v/s Ratio Prot		c0.50		c0.07	0.12						c0.46	
v/s Ratio Perm												
v/c Ratio		1.16		1.23	0.23						1.09	
Uniform Delay, d1		42.6		70.8	20.2						43.0	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		81.0		166.8	0.2						48.1	
Delay (s)		123.6		237.6	20.4						91.0	
Level of Service		F		F	C						F	
Approach Delay (s)		123.6			70.0			0.0			91.0	
Approach LOS		F			E			A			F	

Intersection Summary			
HCM Average Control Delay	101.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
74: E Belmont Ave. & N Blackstone Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1673	179	251	1353	0	0	0	0	364	1740	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	
Lane Util. Factor		0.95		1.00	0.95						0.91	
Frt		0.99		1.00	1.00						0.97	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3488		1770	3539						4893	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3488		1770	3539						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1818	195	273	1471	0	0	0	0	396	1891	603
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	2007	0	273	1471	0	0	0	0	0	2877	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Actuated Green, G (s)		57.8		16.3	77.8						63.1	
Effective Green, g (s)		57.8		16.3	77.8						63.1	
Actuated g/C Ratio		0.39		0.11	0.52						0.42	
Clearance Time (s)		4.2		3.7	4.2						4.9	
Vehicle Extension (s)		6.8		2.0	6.8						0.2	
Lane Grp Cap (vph)		1344		192	1836						2058	
v/s Ratio Prot		c0.58		c0.15	0.42						c0.59	
v/s Ratio Perm												
v/c Ratio		1.49		1.42	0.80						1.40	
Uniform Delay, d1		46.1		66.8	29.7						43.5	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		226.1		217.4	3.2						182.0	
Delay (s)		272.2		284.3	33.0						225.5	
Level of Service		F		F	C						F	
Approach Delay (s)		272.2			72.3			0.0			225.5	
Approach LOS		F			E			A			F	

Intersection Summary			
HCM Average Control Delay	199.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	130.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	908	934	0	0	459	158	44	714	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	0.95			0.95	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583		5071	1583			
Flt Permitted	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583		5071	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	987	1015	0	0	499	172	48	776	27	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	18	0	0	0
Lane Group Flow (vph)	987	1015	0	0	499	114	0	824	9	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)	80.4	108.7			24.6	24.6		26.0	26.0			
Effective Green, g (s)	80.4	108.7			24.6	24.6		26.0	26.0			
Actuated g/C Ratio	0.56	0.76			0.17	0.17		0.18	0.18			
Clearance Time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	2.0	5.1			5.1	5.1		0.2	0.2			
Lane Grp Cap (vph)	990	2675			605	271		917	286			
v/s Ratio Prot	c0.56	0.29			c0.14			c0.16				
v/s Ratio Perm						0.07			0.01			
v/c Ratio	1.00	0.38			0.82	0.42		0.90	0.03			
Uniform Delay, d1	31.6	6.0			57.5	53.2		57.6	48.5			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	27.6	0.2			10.0	2.3		11.2	0.0			
Delay (s)	59.2	6.2			67.6	55.5		68.8	48.5			
Level of Service	E	A			E	E		E	D			
Approach Delay (s)		32.3			64.5			68.2			0.0	
Approach LOS		C			E			E			A	

Intersection Summary			
HCM Average Control Delay	47.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	143.8	Sum of lost time (s)	12.8
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
75: E Belmont Ave. & N Abby St

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	422	1610	0	0	1540	302	62	1620	29	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	0.95			0.95	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583		5076	1583			
Flt Permitted	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583		5076	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	459	1750	0	0	1674	328	67	1761	32	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	10	0	0	0
Lane Group Flow (vph)	459	1750	0	0	1674	316	0	1828	22	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)	28.3	86.8			54.8	54.8		44.1	44.1			
Effective Green, g (s)	28.3	86.8			54.8	54.8		44.1	44.1			
Actuated g/C Ratio	0.20	0.62			0.39	0.39		0.32	0.32			
Clearance Time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	2.0	5.1			5.1	5.1		0.2	0.2			
Lane Grp Cap (vph)	358	2194			1385	620		1599	499			
v/s Ratio Prot	c0.26	0.49			c0.47			c0.36				
v/s Ratio Perm						0.20			0.01			
v/c Ratio	1.28	0.80			1.21	0.51		1.14	0.04			
Uniform Delay, d1	55.9	20.0			42.6	32.4		48.0	33.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	146.7	2.4			100.9	1.4		72.4	0.0			
Delay (s)	202.6	22.4			143.5	33.8		120.4	33.3			
Level of Service	F	C			F	C		F	C			
Approach Delay (s)		59.9			125.5			118.9			0.0	
Approach LOS		E			F			F			A	

Intersection Summary

HCM Average Control Delay	99.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	130.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	688	144	418	510	38	70	183	104	68	353	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3447		1770	3503		1770	3347		1770	3463	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3447		1770	3503		1770	3347		1770	3463	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	748	157	454	554	41	76	199	113	74	384	64
RTOR Reduction (vph)	0	12	0	0	3	0	0	61	0	0	10	0
Lane Group Flow (vph)	60	893	0	454	592	0	76	251	0	74	438	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	7.0	39.5		36.8	69.3		8.1	18.8		7.7	28.4	
Effective Green, g (s)	7.0	39.5		36.8	69.3		8.1	18.8		7.7	28.4	
Actuated g/C Ratio	0.05	0.30		0.28	0.53		0.06	0.14		0.06	0.22	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	95	1047		501	1867		110	484		105	757	
v/s Ratio Prot	0.03	c0.26		c0.26	0.17		c0.04	0.08		0.04	c0.13	
v/s Ratio Perm												
v/c Ratio	0.63	0.85		0.91	0.32		0.69	0.52		0.70	0.58	
Uniform Delay, d1	60.2	42.5		44.9	17.1		59.7	51.4		60.0	45.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.6	7.5		19.5	0.2		14.0	1.9		16.1	1.7	
Delay (s)	69.9	50.1		64.4	17.3		73.7	53.3		76.1	47.2	
Level of Service	E	D		E	B		E	D		E	D	
Approach Delay (s)		51.3			37.7			57.3			51.3	
Approach LOS		D			D			E			D	

Intersection Summary

HCM Average Control Delay	47.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	1327	109	184	1298	145	172	647	217	452	709	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.96		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3486		1770	3406		1770	3351	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3499		1770	3486		1770	3406		1770	3351	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1442	118	200	1411	158	187	703	236	491	771	425
RTOR Reduction (vph)	0	4	0	0	6	0	0	22	0	0	52	0
Lane Group Flow (vph)	132	1556	0	200	1563	0	187	917	0	491	1144	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	12.0	43.4		13.0	44.4		15.0	36.4		25.0	56.4	
Effective Green, g (s)	12.0	43.4		13.0	44.4		15.0	36.4		25.0	56.4	
Actuated g/C Ratio	0.08	0.30		0.09	0.31		0.10	0.25		0.17	0.39	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	146	1047		159	1067		183	855		305	1303	
v/s Ratio Prot	0.07	0.44		c0.11	c0.45		0.11	0.27		c0.28	c0.34	
v/s Ratio Perm												
v/c Ratio	0.90	1.49		1.26	1.47		1.02	1.07		1.61	0.88	
Uniform Delay, d1	65.9	50.8		66.0	50.3		65.0	54.3		60.0	41.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.1	223.8		156.9	214.6		72.4	51.9		289.2	7.6	
Delay (s)	112.0	274.6		222.9	264.9		137.4	106.2		349.2	48.7	
Level of Service	F	F		F	F		F	F		F	D	
Approach Delay (s)		261.9			260.1			111.4			136.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	200.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	123.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
77: Belmont Steet & First Street

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	498	215	154	651	114	284	462	55	101	638	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3460		1770	3483		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3460		1770	3483		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	541	234	167	708	124	309	502	60	110	693	184
RTOR Reduction (vph)	0	0	131	0	15	0	0	9	0	0	0	95
Lane Group Flow (vph)	148	541	103	167	817	0	309	553	0	110	693	89
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	8.0	24.4	24.4	10.0	26.4		17.0	33.9		8.4	25.3	25.3
Effective Green, g (s)	8.0	24.4	24.4	10.0	26.4		17.0	33.9		8.4	25.3	25.3
Actuated g/C Ratio	0.08	0.26	0.26	0.11	0.28		0.18	0.36		0.09	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5		2.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	150	914	409	187	967		318	1249		157	947	424
v/s Ratio Prot	0.08	0.15		c0.09	c0.24		c0.17	0.16		0.06	c0.20	
v/s Ratio Perm			0.06									0.06
v/c Ratio	0.99	0.59	0.25	0.89	0.84		0.97	0.44		0.70	0.73	0.21
Uniform Delay, d1	43.2	30.7	27.8	41.7	32.1		38.5	23.1		41.8	31.5	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	68.7	1.4	0.6	36.6	7.4		42.4	0.5		10.9	3.6	0.5
Delay (s)	111.9	32.1	28.4	78.3	39.5		80.9	23.6		52.7	35.1	27.4
Level of Service	F	C	C	E	D		F	C		D	D	C
Approach Delay (s)		43.9			46.0			44.0			35.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	12.9
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	1343	437	167	1022	167	442	918	98	209	801	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3464		1770	3488		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3464		1770	3488		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	334	1460	475	182	1111	182	480	998	107	227	871	290
RTOR Reduction (vph)	0	0	63	0	9	0	0	5	0	0	0	76
Lane Group Flow (vph)	334	1460	412	182	1284	0	480	1100	0	227	871	214
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	22.0	55.1	55.1	12.0	45.1		31.0	47.1		18.0	34.1	34.1
Effective Green, g (s)	22.0	55.1	55.1	12.0	45.1		31.0	47.1		18.0	34.1	34.1
Actuated g/C Ratio	0.15	0.37	0.37	0.08	0.30		0.21	0.31		0.12	0.23	0.23
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5		2.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	260	1300	581	142	1042		366	1095		212	805	360
v/s Ratio Prot	c0.19	0.41		0.10	c0.37		c0.27	0.32		0.13	c0.25	
v/s Ratio Perm			0.26									0.14
v/c Ratio	1.28	1.12	0.71	1.28	1.23		1.31	1.00		1.07	1.08	0.60
Uniform Delay, d1	64.0	47.5	40.6	69.0	52.5		59.5	51.5		66.0	58.0	51.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	154.1	66.0	4.5	169.8	113.0		158.5	28.2		81.8	56.2	4.0
Delay (s)	218.1	113.4	45.1	238.8	165.4		218.0	79.6		147.8	114.2	55.7
Level of Service	F	F	D	F	F		F	E		F	F	E
Approach Delay (s)		114.5			174.5			121.5			107.5	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	127.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	168	0	0	0	271	1960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.2					4.9
Lane Util. Factor	1.00					0.91
Frt	1.00					1.00
Flt Protected	0.95					0.99
Satd. Flow (prot)	1770					5055
Flt Permitted	0.95					0.99
Satd. Flow (perm)	1770					5055
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	0	0	0	295	2130
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	183	0	0	0	0	2425
Turn Type					Split	
Protected Phases	8				6	6
Permitted Phases						
Actuated Green, G (s)	9.8					30.7
Effective Green, g (s)	9.8					30.7
Actuated g/C Ratio	0.20					0.62
Clearance Time (s)	4.2					4.9
Vehicle Extension (s)	4.8					5.4
Lane Grp Cap (vph)	350					3129
v/s Ratio Prot	c0.10					c0.48
v/s Ratio Perm						
v/c Ratio	0.52					0.78
Uniform Delay, d1	17.8					6.9
Progression Factor	1.00					1.00
Incremental Delay, d2	2.5					1.5
Delay (s)	20.3					8.4
Level of Service	C					A
Approach Delay (s)	20.3		0.0			8.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	9.1
Intersection Capacity Utilization	155.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	102	0	0	0	504	2551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.2					4.9
Lane Util. Factor	1.00					0.91
Frt	1.00					1.00
Flt Protected	0.95					0.99
Satd. Flow (prot)	1770					5044
Flt Permitted	0.95					0.99
Satd. Flow (perm)	1770					5044
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	0	0	0	548	2773
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	111	0	0	0	0	3321
Turn Type					Split	
Protected Phases	8				6	6
Permitted Phases						
Actuated Green, G (s)	10.0					60.5
Effective Green, g (s)	10.0					60.5
Actuated g/C Ratio	0.13					0.76
Clearance Time (s)	4.2					4.9
Vehicle Extension (s)	4.8					5.4
Lane Grp Cap (vph)	222					3834
v/s Ratio Prot	c0.06					c0.66
v/s Ratio Perm						
v/c Ratio	0.50					0.87
Uniform Delay, d1	32.5					6.7
Progression Factor	1.00					1.00
Incremental Delay, d2	3.4					2.5
Delay (s)	35.9					9.2
Level of Service	D					A
Approach Delay (s)	35.9		0.0			9.2
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	9.1
Intersection Capacity Utilization	181.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	272	0	0	169	489	2	636	1129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	1.00			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		5085	1583			
Flt Permitted	0.48	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	892	1863			1863	1583		5085	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	296	0	0	184	532	2	691	1227	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	241	0	0	54	0	0	0
Lane Group Flow (vph)	8	296	0	0	184	291	0	693	1173	0	0	0
Turn Type	Perm					Perm	Split		Perm			
Protected Phases		4			4		2	2				
Permitted Phases	4					4			2			
Actuated Green, G (s)	25.5	25.5			25.5	25.5		84.6	84.6			
Effective Green, g (s)	25.5	25.5			25.5	25.5		84.6	84.6			
Actuated g/C Ratio	0.21	0.21			0.21	0.21		0.71	0.71			
Clearance Time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	5.7	5.7			5.7	5.7		5.2	5.2			
Lane Grp Cap (vph)	191	399			399	339		3609	1124			
v/s Ratio Prot		0.16			0.10			0.14				
v/s Ratio Perm	0.01					c0.18			c0.74			
v/c Ratio	0.04	0.74			0.46	0.86		0.19	1.04			
Uniform Delay, d1	37.2	43.8			40.9	45.1		5.8	17.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.2	9.4			2.2	21.2		0.1	39.0			
Delay (s)	37.4	53.2			43.0	66.3		5.9	56.3			
Level of Service	D	D			D	E		A	E			
Approach Delay (s)		52.7			60.3			38.1			0.0	
Approach LOS		D			E			D			A	

Intersection Summary

HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	9.1
Intersection Capacity Utilization	141.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	480	0	0	102	581	0	1187	1197	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	1.00			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		5085	1583			
Flt Permitted	0.66	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1225	1863			1863	1583		5085	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	522	0	0	111	632	0	1290	1301	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	46	0	0	0
Lane Group Flow (vph)	25	522	0	0	111	586	0	1290	1255	0	0	0
Turn Type	Perm					Perm	Split		Perm			
Protected Phases		4			4		2	2				
Permitted Phases	4					4			2			
Actuated Green, G (s)	40.8	40.8			40.8	40.8		80.1	80.1			
Effective Green, g (s)	40.8	40.8			40.8	40.8		80.1	80.1			
Actuated g/C Ratio	0.31	0.31			0.31	0.31		0.62	0.62			
Clearance Time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	5.7	5.7			5.7	5.7		5.2	5.2			
Lane Grp Cap (vph)	384	585			585	497		3133	975			
v/s Ratio Prot		0.28			0.06			0.25				
v/s Ratio Perm	0.02					c0.37			c0.79			
v/c Ratio	0.07	0.89			0.19	1.18		0.41	1.29			
Uniform Delay, d1	31.2	42.5			32.5	44.6		12.8	25.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.2	17.2			0.4	99.9		0.2	136.8			
Delay (s)	31.4	59.7			33.0	144.5		13.0	161.8			
Level of Service	C	E			C	F		B	F			
Approach Delay (s)		58.4			127.8			87.7			0.0	
Approach LOS		E			F			F			A	

Intersection Summary

HCM Average Control Delay	91.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	167.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	415	1268	5	146	0	0	0	0	3	935	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frt		0.90		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1673		1770	1863						3539	1583
Flt Permitted		1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)		1673		1770	1863						3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	451	1378	5	159	0	0	0	0	3	1016	352
RTOR Reduction (vph)	0	57	0	0	0	0	0	0	0	0	0	171
Lane Group Flow (vph)	0	1772	0	5	159	0	0	0	0	0	1019	181
Turn Type				Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases												6
Actuated Green, G (s)		93.9		1.1	98.7						36.1	36.1
Effective Green, g (s)		93.9		1.1	98.7						36.1	36.1
Actuated g/C Ratio		0.65		0.01	0.69						0.25	0.25
Clearance Time (s)		4.2		3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9		2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		1092		14	1278						888	397
v/s Ratio Prot		c1.06		c0.00	0.09						c0.29	
v/s Ratio Perm												0.11
v/c Ratio		1.62		0.36	0.12						1.15	0.46
Uniform Delay, d1		25.0		71.0	7.8						53.9	45.6
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		284.5		5.6	0.1						79.5	1.9
Delay (s)		309.5		76.7	7.8						133.4	47.5
Level of Service		F		E	A						F	D
Approach Delay (s)		309.5			9.9			0.0			111.4	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM Average Control Delay	214.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	143.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	133.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	594	1192	20	303	0	0	0	0	5	1819	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frt		0.91		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1695		1770	1863						3539	1583
Flt Permitted		1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)		1695		1770	1863						3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	646	1296	22	329	0	0	0	0	5	1977	733
RTOR Reduction (vph)	0	46	0	0	0	0	0	0	0	0	0	183
Lane Group Flow (vph)	0	1896	0	22	329	0	0	0	0	0	1982	550
Turn Type				Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases												6
Actuated Green, G (s)		76.0		6.9	86.6						49.5	49.5
Effective Green, g (s)		76.0		6.9	86.6						49.5	49.5
Actuated g/C Ratio		0.52		0.05	0.60						0.34	0.34
Clearance Time (s)		4.2		3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9		2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		887		84	1111						1206	540
v/s Ratio Prot		c1.12		0.01	c0.18						c0.56	
v/s Ratio Perm												0.35
v/c Ratio		2.14		0.26	0.30						1.64	1.02
Uniform Delay, d1		34.6		66.7	14.4						47.8	47.8
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		515.6		0.6	0.3						293.3	43.7
Delay (s)		550.2		67.3	14.6						341.2	91.5
Level of Service		F		E	B						F	F
Approach Delay (s)		550.2			17.9			0.0			273.8	
Approach LOS		F			B			A			F	

Intersection Summary

HCM Average Control Delay	363.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.87		
Actuated Cycle Length (s)	145.2	Sum of lost time (s)	13.3
Intersection Capacity Utilization	162.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
81: Broadway St & Amador St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	7	562	26	57	49	32	5	37	29	17	24	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	611	28	62	53	35	5	40	32	18	26	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1300										
pX, platoon unblocked												
vC, conflicting volume	88			639			851	852	320	567	849	71
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88			639			851	852	320	567	849	71
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	99			93			98	85	95	94	91	100
cM capacity (veh/h)	1506			941			222	274	676	326	276	977

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	313	334	150	77	48
Volume Left	8	0	62	5	18
Volume Right	0	28	35	32	3
cSH	1506	1700	941	354	309
Volume to Capacity	0.01	0.20	0.07	0.22	0.15
Queue Length 95th (ft)	0	0	5	20	14
Control Delay (s)	0.2	0.0	4.1	18.0	18.8
Lane LOS	A		A	C	C
Approach Delay (s)	0.1		4.1	18.0	18.8
Approach LOS				C	C

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
81: Broadway St & Amador St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	193	65	160	237	271	0	14	1624	1	276	1961	99
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	210	71	174	258	295	0	15	1765	1	300	2132	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1300										
pX, platoon unblocked												
vC, conflicting volume	295			245			2560	1387	122	2148	1474	295
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	295			245			2560	1387	122	2148	1474	295
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	83			80			0	0	100	0	0	85
cM capacity (veh/h)	1264			1319			0	95	906	0	84	702

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	245	209	552	1782	2539
Volume Left	210	0	258	15	300
Volume Right	0	174	0	1	108
cSH	1264	1700	1319	0	0
Volume to Capacity	0.17	0.12	0.20	Err	Err
Queue Length 95th (ft)	15	0	18	Err	Err
Control Delay (s)	7.4	0.0	5.0	Err	Err
Lane LOS	A		A	F	F
Approach Delay (s)	4.0		5.0	Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	264.0%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
82: Broadway St & San Joaquin St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	26	540	45	20	117	35	0	59	32	55	71	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	587	49	22	127	38	0	64	35	60	77	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1008							
pX, platoon unblocked												
vC, conflicting volume	165			636			914	877	318	607	882	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	165			636			914	877	318	607	882	146
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	98			98			100	77	95	79	72	98
cM capacity (veh/h)	1410			943			169	273	678	287	271	874

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	322	342	187	99	154
Volume Left	28	0	22	0	60
Volume Right	0	49	38	35	17
cSH	1410	1700	943	346	301
Volume to Capacity	0.02	0.20	0.02	0.29	0.51
Queue Length 95th (ft)	2	0	2	29	69
Control Delay (s)	0.8	0.0	1.2	19.5	28.9
Lane LOS	A		A	C	D
Approach Delay (s)	0.4		1.2	19.5	28.9
Approach LOS				C	D

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
82: Broadway St & San Joaquin St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	56	435	27	35	700	26	5	96	10	67	42	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	473	29	38	761	28	5	104	11	73	46	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1008							
pX, platoon unblocked	0.81						0.81	0.81		0.81	0.81	0.81
vC, conflicting volume	789			502			1522	1474	251	1272	1475	775
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	618			502			1528	1468	251	1218	1469	601
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	92			96			83	0	99	0	50	89
cM capacity (veh/h)	772			1058			32	91	749	0	90	358

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	297	266	827	121	158
Volume Left	61	0	38	5	73
Volume Right	0	29	28	11	39
cSH	772	1700	1058	90	0
Volume to Capacity	0.08	0.16	0.04	1.34	Err
Queue Length 95th (ft)	6	0	3	222	Err
Control Delay (s)	2.8	0.0	0.9	292.8	Err
Lane LOS	A		A	F	F
Approach Delay (s)	1.5		0.9	292.8	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	11	46	36	89	12	1	77	1109	59	28	622	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	2049	1742	1947	2049	1742	1947	3864		1947	3887	
Flt Permitted	0.75	1.00	1.00	0.72	1.00	1.00	0.39	1.00		0.26	1.00	
Satd. Flow (perm)	1535	2049	1742	1484	2049	1742	803	3864		529	3887	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	50	39	97	13	1	84	1205	64	30	676	7
RTOR Reduction (vph)	0	0	30	0	0	1	0	8	0	0	1	0
Lane Group Flow (vph)	12	50	9	97	13	0	84	1261	0	30	682	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	7.4	7.4	7.4	7.4	7.4	7.4	15.5	15.5		15.5	15.5	
Effective Green, g (s)	7.4	7.4	7.4	7.4	7.4	7.4	15.5	15.5		15.5	15.5	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.50	0.50		0.50	0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	368	491	417	355	491	417	403	1938		265	1950	
v/s Ratio Prot		0.02			0.01			c0.33			0.18	
v/s Ratio Perm	0.01		0.01	c0.07		0.00	0.10			0.06		
v/c Ratio	0.03	0.10	0.02	0.27	0.03	0.00	0.21	0.65		0.11	0.35	
Uniform Delay, d1	9.0	9.2	9.0	9.6	9.0	8.9	4.3	5.7		4.1	4.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.4	0.0	0.0	0.3	0.8		0.2	0.1	
Delay (s)	9.0	9.3	9.0	10.0	9.0	8.9	4.5	6.5		4.3	4.8	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		9.1			9.9			6.4			4.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	30.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	79	99	91	119	468	18	440	709	32	50	1440	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	2049	1742	1947	2049	1742	1947	3868		1947	3843	
Flt Permitted	0.29	1.00	1.00	0.69	1.00	1.00	0.25	1.00		0.29	1.00	
Satd. Flow (perm)	594	2049	1742	1408	2049	1742	509	3868		591	3843	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	108	99	129	509	20	478	771	35	54	1565	148
RTOR Reduction (vph)	0	0	3	0	0	13	0	7	0	0	17	0
Lane Group Flow (vph)	86	108	96	129	509	7	478	799	0	54	1696	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	13.8	13.8	13.8	13.8	13.8	13.8	16.1	16.1		16.1	16.1	
Effective Green, g (s)	13.8	13.8	13.8	13.8	13.8	13.8	16.1	16.1		16.1	16.1	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.42	0.42		0.42	0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	216	746	634	513	746	634	216	1643		251	1633	
v/s Ratio Prot		0.05			c0.25			0.21			0.44	
v/s Ratio Perm	0.14		0.06	0.09		0.00	c0.94			0.09		
v/c Ratio	0.40	0.14	0.15	0.25	0.68	0.01	2.21	0.49		0.22	1.04	
Uniform Delay, d1	9.0	8.1	8.1	8.4	10.2	7.7	10.9	7.9		6.9	10.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.1	0.1	0.3	2.6	0.0	560.6	0.2		0.4	33.0	
Delay (s)	10.2	8.2	8.2	8.7	12.8	7.7	571.5	8.1		7.3	43.9	
Level of Service	B	A	A	A	B	A	F	A		A	D	
Approach Delay (s)		8.8			11.8			217.9			42.8	
Approach LOS		A			B			F			D	

Intersection Summary

HCM Average Control Delay	91.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
84: G St & Mono Street

4/25/2011

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	128	5	2	136	2	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	139	5	2	148	2	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	978			544		
pX, platoon unblocked						
vC, conflicting volume			145		294	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			145		294	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 %			100		100	99
cM capacity (veh/h)			1438		696	906

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	145	150	12
Volume Left	0	2	2
Volume Right	5	0	10
cSH	1700	1438	859
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	332	0	7	514	22	38
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	361	0	8	559	24	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	986			536		
pX, platoon unblocked					0.93	
vC, conflicting volume			361		935	361
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			361		893	361
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		92	94
cM capacity (veh/h)			1198		289	684

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	361	566	65
Volume Left	0	8	24
Volume Right	0	0	41
cSH	1700	1198	455
Volume to Capacity	0.21	0.01	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.2	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	14.2
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
85: H St & Mono Street

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	29	103	9	10	300	30	7	5	8	8	8	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	112	10	11	326	33	8	5	9	9	9	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)		469										
pX, platoon unblocked												
vC, conflicting volume	359			122			579	560	117	555	549	342
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	359			122			579	560	117	555	549	342
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			99			98	99	99	98	98	96
cM capacity (veh/h)	1200			1466			391	422	935	423	429	700

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	153	370	22	48
Volume Left	32	11	8	9
Volume Right	10	33	9	30
cSH	1200	1466	522	567
Volume to Capacity	0.03	0.01	0.04	0.08
Queue Length 95th (ft)	2	1	3	7
Control Delay (s)	1.8	0.3	12.2	11.9
Lane LOS	A	A	B	B
Approach Delay (s)	1.8	0.3	12.2	11.9
Approach LOS			B	B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
85: H St & Mono St

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	71	265	8	2	165	35	4	9	7	10	14	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	288	9	2	179	38	4	10	8	11	15	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		466										
pX, platoon unblocked				0.98			0.98	0.98	0.98	0.98	0.98	
vC, conflicting volume	217			297			668	668	292	662	654	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	217			275			653	653	270	647	638	198
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 %	94			100			99	97	99	97	96	99
cM capacity (veh/h)	1352			1265			341	357	755	349	364	843

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	374	220	22	37
Volume Left	77	2	4	11
Volume Right	9	38	8	11
cSH	1352	1265	433	431
Volume to Capacity	0.06	0.00	0.05	0.09
Queue Length 95th (ft)	5	0	4	7
Control Delay (s)	2.0	0.1	13.8	14.1
Lane LOS	A	A	B	B
Approach Delay (s)	2.0	0.1	13.8	14.1
Approach LOS			B	B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
86: H St & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	69	22	34	21	13	4	81	1058	11	7	762	247
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	24	37	23	14	4	88	1150	12	8	828	268
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								699			472	
pX, platoon unblocked	0.89	0.89	0.81	0.89	0.89	0.84	0.81			0.84		
vC, conflicting volume	1740	2316	548	1810	2444	581	1097			1162		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	770	1416	0	848	1560	115	650			808		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	63	77	96	86	84	99	88			99		
cM capacity (veh/h)	204	106	878	163	87	768	755			682		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	136	41	88	767	395	8	552	545
Volume Left	75	23	88	0	0	8	0	0
Volume Right	37	4	0	0	12	0	0	268
cSH	214	134	755	1700	1700	682	1700	1700
Volume to Capacity	0.64	0.31	0.12	0.45	0.23	0.01	0.32	0.32
Queue Length 95th (ft)	94	30	10	0	0	1	0	0
Control Delay (s)	47.3	43.6	10.4	0.0	0.0	10.3	0.0	0.0
Lane LOS	E	E	B			B		
Approach Delay (s)	47.3	43.6	0.7			0.1		
Approach LOS	E	E						

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
86: H St & Ventura Ave

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	153	10	141	17	10	14	93	1119	18	2	1238	99
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	11	153	18	11	15	101	1216	20	2	1346	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								687			485	
pX, platoon unblocked	0.78	0.78	0.69	0.78	0.78	0.82	0.69			0.82		
vC, conflicting volume	2235	2842	727	2264	2886	618	1453			1236		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	996	1778	0	1034	1835	110	754			860		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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	79	79	78	77	98	83			100		
cM capacity (veh/h)	109	52	747	84	48	760	587			641		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	330	45	101	811	425	2	897	556
Volume Left	166	18	101	0	0	2	0	0
Volume Right	153	15	0	0	20	0	0	108
cSH	170	96	587	1700	1700	641	1700	1700
Volume to Capacity	1.94	0.47	0.17	0.48	0.25	0.00	0.53	0.33
Queue Length 95th (ft)	625	50	15	0	0	0	0	0
Control Delay (s)	491.1	71.9	12.4	0.0	0.0	10.6	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s)	491.1	71.9	0.9			0.0		
Approach LOS	F	F						

Intersection Summary				
Average Delay	52.6			
Intersection Capacity Utilization	76.8%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
87: O St & Santa Clara Street

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	55	30	0	379	0	0	0	0	225	102	608
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	60	33	0	412	0	0	0	0	245	111	661

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total (vph)	92	412	0	355	661
Volume Left (vph)	0	0	0	245	0
Volume Right (vph)	33	0	0	0	661
Hadj (s)	-0.18	0.03	0.00	0.17	-0.57
Departure Headway (s)	5.4	5.1	5.9	5.4	3.2
Degree Utilization, x	0.14	0.59	0.00	0.53	0.59
Capacity (veh/h)	609	671	533	631	1118
Control Delay (s)	9.2	15.1	8.9	14.4	10.6
Approach Delay (s)	9.2	15.1	0.0	12.0	
Approach LOS	A	C	A	B	

Intersection Summary			
Delay	12.7		
HCM Level of Service	B		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	341	81	0	533	0	0	0	11	316	27	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	371	88	0	579	0	0	0	12	343	29	147

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total (vph)	459	579	12	373	147
Volume Left (vph)	0	0	0	343	0
Volume Right (vph)	88	0	12	0	147
Hadj (s)	-0.08	0.03	-0.57	0.22	-0.57
Departure Headway (s)	6.4	6.4	7.9	7.0	3.2
Degree Utilization, x	0.81	1.03	0.03	0.73	0.13
Capacity (veh/h)	556	553	388	373	1121
Control Delay (s)	31.4	70.3	11.2	26.7	6.7
Approach Delay (s)	31.4	70.3	11.2	21.1	
Approach LOS	D	F	B	C	

Intersection Summary			
Delay	42.2		
HCM Level of Service	E		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
89: M St & San Benito Street

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	196	211	0	0	0	171	0	108	11	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	213	229	0	0	0	186	0	117	12	0	0	0
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	0			229			748	655	115	611	655	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			229			748	655	115	611	655	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	87			100			100	65	99	100	100	100
cM capacity (veh/h)	1622			1336			271	333	916	245	333	1084

Direction, Lane #	SE 1	SE 2	SE 3	NW 1	NE 1	NE 2
Volume Total	213	115	115	186	78	51
Volume Left	213	0	0	0	0	0
Volume Right	0	0	0	186	0	12
cSH	1622	1700	1700	1700	333	392
Volume to Capacity	0.13	0.07	0.07	0.11	0.23	0.13
Queue Length 95th (ft)	11	0	0	0	22	11
Control Delay (s)	7.6	0.0	0.0	0.0	19.1	15.6
Lane LOS	A				C	C
Approach Delay (s)	3.6			0.0	17.7	
Approach LOS					C	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	853	497	0	0	0	251	0	170	117	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	927	540	0	0	0	273	0	185	127	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1065										
pX, platoon unblocked												
vC, conflicting volume	0			540			2531	2395	270	2344	2395	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			540			2531	2395	270	2344	2395	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	43			100			100	0	83	0	100	100
cM capacity (veh/h)	1622			1024			8	14	728	0	14	1084

Direction, Lane #	SE 1	SE 2	SE 3	NW 1	NE 1	NE 2
Volume Total	927	270	270	273	123	189
Volume Left	927	0	0	0	0	0
Volume Right	0	0	0	273	0	127
cSH	1622	1700	1700	1700	14	42
Volume to Capacity	0.57	0.16	0.16	0.16	8.67	4.51
Queue Length 95th (ft)	96	0	0	0	Err	Err
Control Delay (s)	10.1	0.0	0.0	0.0	Err	Err
Lane LOS	B				F	F
Approach Delay (s)	6.4			0.0	Err	
Approach LOS					F	

Intersection Summary				
Average Delay	1524.6			
Intersection Capacity Utilization	74.7%	ICU Level of Service	D	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
90: Broadway St & Santa Clara Street

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	141	242	10	5	62	35	6	10	12	60	18	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	263	11	5	67	38	7	11	13	65	20	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		502										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	105			274			715	691	268	691	678	86
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			84			593	566	77	565	550	86
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 %	90			100			98	97	98	80	94	97
cM capacity (veh/h)	1486			1310			307	335	851	333	342	972

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	427	111	30	117
Volume Left	153	5	7	65
Volume Right	11	38	13	33
cSH	1486	1310	441	409
Volume to Capacity	0.10	0.00	0.07	0.29
Queue Length 95th (ft)	9	0	6	29
Control Delay (s)	3.4	0.4	13.8	17.3
Lane LOS	A	A	B	C
Approach Delay (s)	3.4	0.4	13.8	17.3
Approach LOS			B	C

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
90: Broadway St & Santa Clara Street

4/25/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	34	357	0	7	280	35	4	3	5	71	31	73
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	388	0	8	304	38	4	3	5	77	34	79
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		478										
pX, platoon unblocked												
vC, conflicting volume	342			388			897	820	194	614	801	323
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	342			388			897	820	194	614	801	323
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			99			98	99	99	79	89	88
cM capacity (veh/h)	1213			1167			184	297	815	360	305	672

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	231	194	350	13	190
Volume Left	37	0	8	4	77
Volume Right	0	0	38	5	79
cSH	1213	1700	1167	316	430
Volume to Capacity	0.03	0.11	0.01	0.04	0.44
Queue Length 95th (ft)	2	0	0	3	55
Control Delay (s)	1.5	0.0	0.2	16.9	19.9
Lane LOS	A		A	C	C
Approach Delay (s)	0.8		0.2	16.9	19.9
Approach LOS				C	C

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
91: E Hamilton Ave & Van Ness Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	2	4	6	0	23	5	96	8	79	171	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	2	4	7	0	25	5	104	9	86	186	46

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	10	7	25	118	317
Volume Left (vph)	3	7	0	5	86
Volume Right (vph)	4	0	25	9	46
Hadj (s)	-0.17	0.23	-0.57	0.00	0.00
Departure Headway (s)	4.7	5.1	3.2	4.2	4.1
Degree Utilization, x	0.01	0.01	0.02	0.14	0.36
Capacity (veh/h)	696	643	1121	827	878
Control Delay (s)	7.7	8.1	6.3	7.9	9.3
Approach Delay (s)	7.7	6.7		7.9	9.3
Approach LOS	A	A		A	A

Intersection Summary				
Delay	8.8			
HCM Level of Service	A			
Intersection Capacity Utilization	32.6%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
91: E Hamilton Ave & Van Ness Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	4	2	44	1	77	11	273	35	44	335	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	4	2	48	1	84	12	297	38	48	364	15

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	25	49	84	347	427
Volume Left (vph)	18	48	0	12	48
Volume Right (vph)	2	0	84	38	15
Hadj (s)	0.13	0.23	-0.57	-0.02	0.04
Departure Headway (s)	5.9	5.9	3.2	4.6	4.6
Degree Utilization, x	0.04	0.08	0.07	0.44	0.54
Capacity (veh/h)	526	529	1121	764	770
Control Delay (s)	9.1	9.4	6.5	11.1	12.8
Approach Delay (s)	9.1	7.6		11.1	12.8
Approach LOS	A	A		B	B

Intersection Summary				
Delay	11.3			
HCM Level of Service	B			
Intersection Capacity Utilization	52.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
92: E California Ave & Van Ness Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	21	360	70	15	284	25	31	100	16	139	140	77
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	391	76	16	309	27	34	109	17	151	152	84
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	862	690	194	953	723	117	236			126		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	862	690	194	953	723	117	236			126		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	0	91	0	0	97	97			90		
cM capacity (veh/h)	0	322	847	0	308	935	1331			1460		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	490	352	160	387
Volume Left	23	16	34	151
Volume Right	76	27	17	84
cSH	0	0	1331	1460
Volume to Capacity	Err	Err	0.03	0.10
Queue Length 95th (ft)	Err	Err	2	9
Control Delay (s)	Err	Err	1.8	3.6
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	1.8	3.6
Approach LOS	F	F		

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

HCM Unsignalized Intersection Capacity Analysis
92: E California Ave & Van Ness Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	142	538	60	92	474	43	113	132	171	402	222	135
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	585	65	100	515	47	123	143	186	437	241	147
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	1975	1764	315	2028	1744	236	388			329		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1975	1764	315	2028	1744	236	388			329		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	0	91	0	0	94	90			64		
cM capacity (veh/h)	0	49	726	0	50	803	1170			1230		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	804	662	452	825
Volume Left	154	100	123	437
Volume Right	65	47	186	147
cSH	0	0	1170	1230
Volume to Capacity	Err	Err	0.10	0.36
Queue Length 95th (ft)	Err	Err	9	41
Control Delay (s)	Err	Err	3.1	7.1
Lane LOS	F	F	A	A
Approach Delay (s)	Err	Err	3.1	7.1
Approach LOS	F	F		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	133.7%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
96: E Church Ave & Golden State Blvd

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	135	543	420	151	445	395	529	1113	156	268	946	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	3893	1742	1947	2049	1742	1947	3821		1947	3761	
Flt Permitted	0.25	1.00	1.00	0.29	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	512	3893	1742	595	2049	1742	1947	3821		1947	3761	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	590	457	164	484	429	575	1210	170	291	1028	301
RTOR Reduction (vph)	0	0	291	0	0	315	0	18	0	0	39	0
Lane Group Flow (vph)	147	590	166	164	484	114	575	1362	0	291	1290	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0	16.0	15.0	22.0		10.0	17.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0	16.0	15.0	22.0		10.0	17.0	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.25	0.37		0.17	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1038	465	159	546	465	487	1401		325	1066	
v/s Ratio Prot		0.15			0.24		c0.30	0.36		0.15	c0.34	
v/s Ratio Perm	c0.29		0.10	0.28		0.07						
v/c Ratio	1.07	0.57	0.36	1.03	0.89	0.25	1.18	0.97		0.90	1.21	
Uniform Delay, d1	22.0	19.0	17.8	22.0	21.1	17.3	22.5	18.7		24.5	21.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	97.7	0.7	0.5	79.9	15.9	0.3	100.8	17.7		25.4	103.6	
Delay (s)	119.7	19.7	18.3	101.9	37.0	17.5	123.3	36.4		49.9	125.1	
Level of Service	F	B	B	F	D	B	F	D		D	F	
Approach Delay (s)		31.5			39.1			61.9			111.6	
Approach LOS		C			D			E			F	

Intersection Summary			
HCM Average Control Delay	65.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	184	615	366	224	825	550	674	1463	176	494	1097	700
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	3893	1742	1947	2049	1742	1947	3831		1947	3666	
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	315	3893	1742	606	2049	1742	1947	3831		1947	3666	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	668	398	243	897	598	733	1590	191	537	1192	761
RTOR Reduction (vph)	0	0	206	0	0	207	0	13	0	0	53	0
Lane Group Flow (vph)	200	668	192	243	897	391	733	1768	0	537	1901	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4		4	4		4						
Actuated Green, G (s)	26.0	26.0	26.0	26.0	26.0	26.0	11.0	23.0		9.0	21.0	
Effective Green, g (s)	26.0	26.0	26.0	26.0	26.0	26.0	11.0	23.0		9.0	21.0	
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.33		0.13	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	117	1446	647	225	761	647	306	1259		250	1100	
v/s Ratio Prot		0.17			0.44		c0.38	0.46		0.28	c0.52	
v/s Ratio Perm	c0.63		0.11	0.40		0.22						
v/c Ratio	1.71	0.46	0.30	1.08	1.18	0.60	2.40	1.40		2.15	1.73	
Uniform Delay, d1	22.0	16.7	15.5	22.0	22.0	17.8	29.5	23.5		30.5	24.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	352.8	0.2	0.3	82.9	93.8	1.6	637.9	186.6		529.7	331.3	
Delay (s)	374.8	16.9	15.8	104.9	115.8	19.4	667.4	210.1		560.2	355.8	
Level of Service	F	B	B	F	F	B	F	F		F	F	
Approach Delay (s)		73.1			81.1			343.4			399.9	
Approach LOS		E			F			F			F	

Intersection Summary

HCM Average Control Delay	261.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	157.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	432	973	834	17	16	318
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	470	1058	907	18	17	346
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		446				
pX, platoon unblocked						
vC, conflicting volume	925				2384	462
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	925				2384	462
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	36				0	37
cM capacity (veh/h)	734				10	546

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	470	529	529	604	321	363
Volume Left	470	0	0	0	0	17
Volume Right	0	0	0	0	18	346
cSH	734	1700	1700	1700	1700	156
Volume to Capacity	0.64	0.31	0.31	0.36	0.19	2.33
Queue Length 95th (ft)	117	0	0	0	0	759
Control Delay (s)	18.2	0.0	0.0	0.0	0.0	662.5
Lane LOS	C					F
Approach Delay (s)	5.6			0.0		662.5
Approach LOS						F

Intersection Summary				
Average Delay	88.5			
Intersection Capacity Utilization	78.1%	ICU Level of Service		D
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	581	1534	1188	21	16	583
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	632	1667	1291	23	17	634
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		446				
pX, platoon unblocked						
vC, conflicting volume	1314				3399	657
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1314				3399	657
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	0				0	0
cM capacity (veh/h)	522				0	407

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	632	834	834	861	453	651
Volume Left	632	0	0	0	0	17
Volume Right	0	0	0	0	23	634
cSH	522	1700	1700	1700	1700	0
Volume to Capacity	1.21	0.49	0.49	0.51	0.27	Err
Queue Length 95th (ft)	592	0	0	0	0	Err
Control Delay (s)	136.3	0.0	0.0	0.0	0.0	Err
Lane LOS	F					F
Approach Delay (s)	37.5			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	808	43	21	802	2	33	1	4	0	0	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	878	47	23	872	2	36	1	4	0	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		715										
pX, platoon unblocked												
vC, conflicting volume	874			925			1408	1839	462	1380	1861	437
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	874			925			1408	1839	462	1380	1861	437
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	99			97			62	98	99	100	100	99
cM capacity (veh/h)	768			734			94	72	546	98	69	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	448	486	459	438	41	8
Volume Left	9	0	23	0	36	0
Volume Right	0	47	0	2	4	8
cSH	768	1700	734	1700	102	567
Volume to Capacity	0.01	0.29	0.03	0.26	0.40	0.01
Queue Length 95th (ft)	1	0	2	0	42	1
Control Delay (s)	0.3	0.0	0.9	0.0	62.2	11.4
Lane LOS	A		A		F	B
Approach Delay (s)	0.2		0.5		62.2	11.4
Approach LOS					F	B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
99: E Church Ave & S Sunland Ave

4/28/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	607	16	39	503	0	24	0	43	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	660	17	42	547	0	26	0	47	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		679										
pX, platoon unblocked												
vC, conflicting volume	547			677			1027	1300	339	1008	1309	273
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	547			677			1027	1300	339	1008	1309	273
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			95			86	100	93	100	100	100
cM capacity (veh/h)	1019			910			182	153	657	174	151	724

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	330	347	316	273	73	0
Volume Left	0	0	42	0	26	0
Volume Right	0	17	0	0	47	0
cSH	1019	1700	910	1700	340	1700
Volume to Capacity	0.00	0.20	0.05	0.16	0.21	0.00
Queue Length 95th (ft)	0	0	4	0	20	0
Control Delay (s)	0.0	0.0	1.7	0.0	18.5	0.0
Lane LOS			A		C	A
Approach Delay (s)	0.0		0.9		18.5	0.0
Approach LOS					C	A

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	104	335	67	137	265	26	24	1336	342	116	1262	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1947	1998		1947	2022		1947	3893	1742	1947	3893	1742
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1947	1998		1947	2022		1947	3893	1742	1947	3893	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	364	73	149	288	28	26	1452	372	126	1372	103
RTOR Reduction (vph)	0	10	0	0	5	0	0	0	218	0	0	44
Lane Group Flow (vph)	113	427	0	149	311	0	26	1452	154	126	1372	59
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.2	15.1		7.8	16.7		2.9	25.7	25.7	6.2	29.0	29.0
Effective Green, g (s)	6.2	15.1		7.8	16.7		2.9	25.7	25.7	6.2	29.0	29.0
Actuated g/C Ratio	0.09	0.21		0.11	0.24		0.04	0.36	0.36	0.09	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	171	426		215	477		80	1413	632	171	1595	714
v/s Ratio Prot	0.06	c0.21		c0.08	0.15		0.01	c0.37		c0.06	c0.35	
v/s Ratio Perm									0.09			0.03
v/c Ratio	0.66	1.00		0.69	0.65		0.33	1.03	0.24	0.74	0.86	0.08
Uniform Delay, d1	31.3	27.8		30.3	24.4		33.0	22.5	15.8	31.5	19.1	12.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	44.1		9.3	3.2		2.4	31.3	0.2	15.2	5.0	0.1
Delay (s)	40.5	71.9		39.6	27.6		35.4	53.8	16.0	46.7	24.0	12.8
Level of Service	D	E		D	C		D	D	B	D	C	B
Approach Delay (s)		65.4			31.5			45.9			25.1	
Approach LOS		E			C			D			C	

Intersection Summary

HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
101: S East Ave & Golden State Blvd

4/28/2011

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	65	25	29	49	37	6	1	1627	39	18	2574	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1947	1882		1947	2003		1947	3893	1742	1947	3893	1742
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1947	1882		1947	2003		1947	3893	1742	1947	3893	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	32	53	40	7	1	1768	42	20	2798	38
RTOR Reduction (vph)	0	28	0	0	6	0	0	0	13	0	0	5
Lane Group Flow (vph)	71	31	0	53	41	0	1	1768	29	20	2798	33
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	5.9	9.5		4.3	7.9		1.0	43.6	43.6	2.5	45.1	45.1
Effective Green, g (s)	5.9	9.5		4.3	7.9		1.0	43.6	43.6	2.5	45.1	45.1
Actuated g/C Ratio	0.08	0.13		0.06	0.10		0.01	0.57	0.57	0.03	0.59	0.59
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	236		110	208		26	2236	1001	64	2313	1035
v/s Ratio Prot	c0.04	0.02		0.03	c0.02		0.00	0.45		c0.01	c0.72	
v/s Ratio Perm									0.02			0.02
v/c Ratio	0.47	0.13		0.48	0.20		0.04	0.79	0.03	0.31	1.21	0.03
Uniform Delay, d1	33.5	29.5		34.7	31.1		37.0	12.6	7.0	35.9	15.4	6.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.3		3.3	0.5		0.6	2.0	0.0	2.8	98.7	0.0
Delay (s)	35.8	29.8		38.0	31.6		37.6	14.6	7.0	38.6	114.1	6.4
Level of Service	D	C		D	C		D	B	A	D	F	A
Approach Delay (s)		33.1			35.0			14.4			112.1	
Approach LOS		C			C			B			F	

Intersection Summary

HCM Average Control Delay	72.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
102: E Jensen Ave & Golden State Blvd

4/28/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Volume (vph)	378	405	159	954	670	18	183	182	1365	412	254	2038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.95		0.97	0.95
Frt	1.00	0.96		1.00	1.00			1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	3776	3728		3776	3878			3776	3758		3776	3759
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)	3776	3728		3776	3878			3776	3758		3776	3759
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	411	440	173	1037	728	20	199	198	1484	448	276	2215
RTOR Reduction (vph)	0	28	0	0	2	0	0	0	19	0	0	18
Lane Group Flow (vph)	411	585	0	1037	746	0	0	397	1913	0	276	2860
Turn Type	Prot			Prot			Prot	Prot			Prot	
Protected Phases	3	8		7	4		5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	17.0	19.0		29.0	31.0			9.0	75.0		11.0	77.0
Effective Green, g (s)	17.0	19.0		29.0	31.0			9.0	75.0		11.0	77.0
Actuated g/C Ratio	0.11	0.13		0.19	0.21			0.06	0.50		0.07	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	428	472		730	801			227	1879		277	1930
v/s Ratio Prot	0.11	c0.16		c0.27	0.19			c0.11	0.51		0.07	c0.76
v/s Ratio Perm												
v/c Ratio	0.96	1.24		1.42	0.93			1.75	1.02		1.00	1.48
Uniform Delay, d1	66.2	65.5		60.5	58.5			70.5	37.5		69.5	36.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	33.3	124.8		197.2	17.4			354.6	25.4		52.7	219.6
Delay (s)	99.4	190.3		257.7	75.9			425.1	62.9		122.2	256.1
Level of Service	F	F		F	E			F	E		F	F
Approach Delay (s)		153.8			181.5				124.7			244.3
Approach LOS		F			F				F			F

Intersection Summary			
HCM Average Control Delay	186.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	143.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR
Lane Configurations	
Volume (vph)	610
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	663
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Volume (vph)	653	621	517	1124	914	32	281	271	1920	443	502	2970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.95		0.97	0.95
Frt	1.00	0.93		1.00	0.99			1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	3776	3628		3776	3873			3776	3784		3776	3788
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)	3776	3628		3776	3873			3776	3784		3776	3788
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	710	675	562	1222	993	35	305	295	2087	482	546	3228
RTOR Reduction (vph)	0	90	0	0	0	0	0	0	13	0	0	12
Lane Group Flow (vph)	710	1147	0	1222	1028	0	0	600	2556	0	546	3921
Turn Type	Prot			Prot			Prot	Prot			Prot	
Protected Phases	3	8		7	4		5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	15.0	28.0		24.0	37.0			10.0	70.0		12.0	72.0
Effective Green, g (s)	15.0	28.0		24.0	37.0			10.0	70.0		12.0	72.0
Actuated g/C Ratio	0.10	0.19		0.16	0.25			0.07	0.47		0.08	0.48
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	378	677		604	955			252	1766		302	1818
v/s Ratio Prot	0.19	c0.32		c0.32	0.27			c0.16	0.68		0.14	c1.03
v/s Ratio Perm												
v/c Ratio	1.88	1.69		2.02	1.08			2.38	1.45		1.81	2.16
Uniform Delay, d1	67.5	61.0		63.0	56.5			70.0	40.0		69.0	39.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	405.2	318.6		466.2	52.0			633.5	204.5		376.5	522.3
Delay (s)	472.7	379.6		529.2	108.5			703.5	244.5		445.5	561.3
Level of Service	F	F		F	F			F	F		F	F
Approach Delay (s)		413.5			337.0				331.4			547.1
Approach LOS		F			F				F			F

Intersection Summary

HCM Average Control Delay	427.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	197.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR
Lane Configurations	
Volume (vph)	649
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	705
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis
104: Orange Ave & Golden State Blvd

4/28/2011

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	51	0	27	0	0	0	0	1081	79	29	1020	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	0	29	0	0	0	0	1175	86	32	1109	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1835	2390	630	1759	2433	554	1109			1261		
vC1, stage 1 conf vol	1218	1218		1172	1172							
vC2, stage 2 conf vol	617	1172		588	1261							
vCu, unblocked vol	1835	2390	630	1759	2433	554	1109			1261		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	60	100	93	100	100	100	100			94		
cM capacity (veh/h)	137	129	424	137	117	476	626			547		

Direction, Lane #	NB 1	SB 1	SE 1	SE 2	SE 3	NW 1	NW 2	NW 3
Volume Total	85	0	0	783	478	32	739	370
Volume Left	55	0	0	0	0	32	0	0
Volume Right	29	0	0	0	86	0	0	0
cSH	179	1700	1700	1700	1700	547	1700	1700
Volume to Capacity	0.47	0.00	0.00	0.46	0.28	0.06	0.43	0.22
Queue Length 95th (ft)	57	0	0	0	0	5	0	0
Control Delay (s)	42.0	0.0	0.0	0.0	0.0	12.0	0.0	0.0
Lane LOS	E	A				B		
Approach Delay (s)	42.0	0.0	0.0			0.3		
Approach LOS	E	A						

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	43.5%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
104: Orange Ave & Golden State Blvd

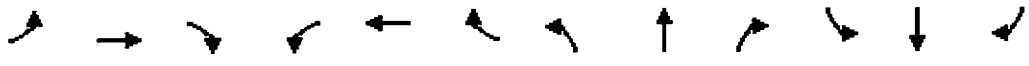
4/28/2011

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	150	0	96	0	0	0	0	1562	96	61	1990	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	0	104	0	0	0	0	1698	104	66	2163	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2964	4046	901	3145	4098	1082	2163			1802		
vC1, stage 1 conf vol	1750	1750		2296	2296							
vC2, stage 2 conf vol	1214	2296		849	1802							
vCu, unblocked vol	2964	4046	901	3145	4098	1082	2163			1802		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	63	100	100	100	100			80		
cM capacity (veh/h)	54	38	281	24	29	213	244			338		

Direction, Lane #	NB 1	SB 1	SE 1	SE 2	SE 3	NW 1	NW 2	NW 3
Volume Total	267	0	0	1132	670	66	1442	721
Volume Left	163	0	0	0	0	66	0	0
Volume Right	104	0	0	0	104	0	0	0
cSH	79	1700	1700	1700	1700	338	1700	1700
Volume to Capacity	3.40	0.00	0.00	0.67	0.39	0.20	0.85	0.42
Queue Length 95th (ft)	Err	0	0	0	0	18	0	0
Control Delay (s)	Err	0.0	0.0	0.0	0.0	18.2	0.0	0.0
Lane LOS	F	A				C		
Approach Delay (s)	Err	0.0	0.0			0.5		
Approach LOS	F	A						

Intersection Summary				
Average Delay	622.2			
Intersection Capacity Utilization	75.9%	ICU Level of Service	D	
Analysis Period (min)	15			

HANFORD PROJECT CONDITIONS
SYNCHRO OUTPUT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	754	26	117	907	28	0	0	49	0	0	565
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	820	28	127	986	30	0	0	53	0	0	614
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	1016			848			2299	2209	424	1823	2208	508
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1016			848			2299	2209	424	1823	2208	508
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	92			84			0	100	91	100	100	0
cM capacity (veh/h)	678			785			0	34	579	36	34	510

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	52	546	301	127	657	359	53	614
Volume Left	52	0	0	127	0	0	0	0
Volume Right	0	0	28	0	0	30	53	614
cSH	678	1700	1700	785	1700	1700	579	510
Volume to Capacity	0.08	0.32	0.18	0.16	0.39	0.21	0.09	1.20
Queue Length 95th (ft)	6	0	0	14	0	0	8	576
Control Delay (s)	10.7	0.0	0.0	10.5	0.0	0.0	11.9	135.1
Lane LOS	B			B			B	F
Approach Delay (s)	0.6			1.2			11.9	135.1
Approach LOS							B	F

Intersection Summary				
Average Delay	31.5			
Intersection Capacity Utilization	67.6%	ICU Level of Service		C
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
1: SR 198 & 9 th Ave

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	838	988	33	40	1009	59	0	0	315	0	0	95
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	911	1074	36	43	1097	64	0	0	342	0	0	103
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	1161			1110			3652	4161	555	3917	4147	580
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1161			1110			3652	4161	555	3917	4147	580
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	0			93			0	0	28	0	0	77
cM capacity (veh/h)	598			625			0	0	475	0	0	457

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SE
Volume Total	911	716	394	43	731	430	342	103
Volume Left	911	0	0	43	0	0	0	0
Volume Right	0	0	36	0	0	64	342	103
cSH	598	1700	1700	625	1700	1700	475	457
Volume to Capacity	1.52	0.42	0.23	0.07	0.43	0.25	0.72	0.23
Queue Length 95th (ft)	1163	0	0	6	0	0	144	21
Control Delay (s)	263.3	0.0	0.0	11.2	0.0	0.0	29.7	15.2
Lane LOS	F			B			D	C
Approach Delay (s)	118.7			0.4			29.7	15.2
Approach LOS							D	C

Intersection Summary			
Average Delay	68.7		
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	40	0	145	0	276	0	0	585	102	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	0	158	0	300	0	0	636	111	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	991	1047	300	747			300			1070	991
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	991	1047	300	747			300			1070	991
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	81	100	79	100			100			100	100
cM capacity (veh/h)	225	228	740	862			1261			156	246

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	201	300	747
Volume Left	43	0	0
Volume Right	158	0	111
cSH	944	1700	1700
Volume to Capacity	0.21	0.18	0.44
Queue Length 95th (ft)	20	0	0
Control Delay (s)	14.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	48	0	209	0	746	0	0	332	134	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	0	227	0	811	0	0	361	146	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	1245	1317	811	507			811			1358	1245
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1245	1317	811	507			811			1358	1245
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	65	100	40	100			100			100	100
cM capacity (veh/h)	151	157	379	1058			815			51	174

Direction, Lane #	WB 1	NB 1	SE
Volume Total	279	811	507
Volume Left	52	0	0
Volume Right	227	0	146
cSH	381	1700	1700
Volume to Capacity	0.73	0.48	0.30
Queue Length 95th (ft)	142	0	0
Control Delay (s)	36.3	0.0	0.0
Lane LOS	E		
Approach Delay (s)	36.3	0.0	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (veh/h)	110	0	228	0	273	35	0	574	0	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	0	248	0	297	38	0	624	0	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	940	959	624	624			335			1064	940
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	940	959	624	624			335			1064	940
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	51	100	49	100			100			100	100
cM capacity (veh/h)	244	257	485	957			1225			98	264

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	367	335	624
Volume Left	120	0	0
Volume Right	248	38	0
cSH	543	1700	1700
Volume to Capacity	0.68	0.20	0.37
Queue Length 95th (ft)	127	0	0
Control Delay (s)	24.3	0.0	0.0
Lane LOS	C		
Approach Delay (s)	24.3	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (veh/h)	105	0	213	0	822	109	0	290	0	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	0	232	0	893	118	0	315	0	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	1268	1327	315	315			1012			1384	1268
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1268	1327	315	315			1012			1384	1268
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	22	100	68	100			100			100	100
cM capacity (veh/h)	145	155	725	1245			685			82	169

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	346	1012	315
Volume Left	114	0	0
Volume Right	232	118	0
cSH	345	1700	1700
Volume to Capacity	1.00	0.60	0.19
Queue Length 95th (ft)	286	0	0
Control Delay (s)	84.6	0.0	0.0
Lane LOS	F		
Approach Delay (s)	84.6	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	17.5		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	569	7	47	828	11	6	12	17	79	14	100
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	618	8	51	900	12	7	13	18	86	15	109
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	912			626			1502	1847	313	1553	1845	456
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912			626			1502	1847	313	1553	1845	456
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	86			95			86	78	97	0	75	80
cM capacity (veh/h)	743			951			47	60	683	54	60	551

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	105	412	214	51	600	312	38	210
Volume Left	105	0	0	51	0	0	7	86
Volume Right	0	0	8	0	0	12	18	109
cSH	743	1700	1700	951	1700	1700	99	102
Volume to Capacity	0.14	0.24	0.13	0.05	0.35	0.18	0.38	2.05
Queue Length 95th (ft)	12	0	0	4	0	0	39	446
Control Delay (s)	10.6	0.0	0.0	9.0	0.0	0.0	62.4	574.9
Lane LOS	B			A			F	F
Approach Delay (s)	1.5			0.5			62.4	574.9
Approach LOS							F	F

Intersection Summary			
Average Delay	64.1		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	1032	13	18	1057	9	47	155	67	16	7	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	1122	14	20	1149	10	51	168	73	17	8	23
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	1159			1136			1889	2446	568	2030	2448	579
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1159			1136			1889	2446	568	2030	2448	579
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	90			97			0	0	84	0	72	95
cM capacity (veh/h)	599			611			29	27	466	0	27	458

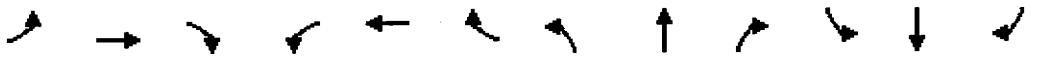
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	60	748	388	20	766	393	232	48
Volume Left	60	0	0	20	0	0	51	17
Volume Right	0	0	14	0	0	10	73	23
cSH	599	1700	1700	611	1700	1700	36	0
Volume to Capacity	0.10	0.44	0.23	0.03	0.45	0.23	8.22	Err
Queue Length 95th (ft)	8	0	0	2	0	0	Err	Err
Control Delay (s)	11.7	0.0	0.0	11.1	0.0	0.0	Err	Err
Lane LOS	B			B			F	F
Approach Delay (s)	0.6			0.2			Err	Err
Approach LOS							F	F

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	59.1%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	87	556	13	4	791	4	12	5	6	4	8	87
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	604	14	4	860	4	13	5	7	4	9	95
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	864			618			1338	1673	309	1371	1678	432
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	864			618			1338	1673	309	1371	1678	432
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	88			100			83	93	99	95	89	83
cM capacity (veh/h)	774			958			77	83	687	89	82	572

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	95	403	216	4	573	291	25	108
Volume Left	95	0	0	4	0	0	13	4
Volume Right	0	0	14	0	0	4	7	95
cSH	774	1700	1700	958	1700	1700	102	336
Volume to Capacity	0.12	0.24	0.13	0.00	0.34	0.17	0.24	0.32
Queue Length 95th (ft)	10	0	0	0	0	0	22	34
Control Delay (s)	10.3	0.0	0.0	8.8	0.0	0.0	51.2	20.7
Lane LOS	B			A			F	C
Approach Delay (s)	1.4			0.0			51.2	20.7
Approach LOS							F	C

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	43.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	102	997	9	3	973	10	0	42	23	2	3	104
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	111	1084	10	3	1058	11	0	46	25	2	3	113
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	1068			1093			1960	2385	547	1881	2385	534
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1068			1093			1960	2385	547	1881	2385	534
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	83			99			100	0	95	0	88	77
cM capacity (veh/h)	648			634			23	28	481	0	28	490

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	111	722	371	3	705	363	71	118
Volume Left	111	0	0	3	0	0	0	2
Volume Right	0	0	10	0	0	11	25	113
cSH	648	1700	1700	634	1700	1700	42	0
Volume to Capacity	0.17	0.42	0.22	0.01	0.41	0.21	1.70	Err
Queue Length 95th (ft)	15	0	0	0	0	0	182	Err
Control Delay (s)	11.7	0.0	0.0	10.7	0.0	0.0	549.4	Err
Lane LOS	B			B			F	F
Approach Delay (s)	1.1			0.0			549.4	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	539	16	114	780	4	7	6	44	2	7	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	586	17	124	848	4	8	7	48	2	8	20
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	852			603			1298	1703	302	1451	1710	426
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	852			603			1298	1703	302	1451	1710	426
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	99			87			92	92	93	97	90	97
cM capacity (veh/h)	782			970			96	79	694	72	78	577

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SE
Volume Total	4	391	213	124	565	287	62	29
Volume Left	4	0	0	124	0	0	8	2
Volume Right	0	0	17	0	0	4	48	20
cSH	782	1700	1700	970	1700	1700	268	181
Volume to Capacity	0.01	0.23	0.13	0.13	0.33	0.17	0.23	0.16
Queue Length 95th (ft)	0	0	0	11	0	0	22	14
Control Delay (s)	9.6	0.0	0.0	9.3	0.0	0.0	22.4	28.6
Lane LOS	A			A			C	D
Approach Delay (s)	0.1			1.2			22.4	28.6
Approach LOS							C	D

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	994	21	45	912	8	12	8	132	3	13	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	1080	23	49	991	9	13	9	143	3	14	17
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	1000			1103			1755	2235	552	1827	2242	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1000			1103			1755	2235	552	1827	2242	500
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			92			62	77	70	87	62	97
cM capacity (veh/h)	688			629			34	37	478	25	37	516

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	23	730	383	49	661	339	165	35
Volume Left	23	0	0	49	0	0	13	3
Volume Right	0	0	23	0	0	9	143	17
cSH	688	1700	1700	629	1700	1700	180	64
Volume to Capacity	0.03	0.42	0.23	0.08	0.39	0.20	0.92	0.54
Queue Length 95th (ft)	3	0	0	6	0	0	175	56
Control Delay (s)	10.4	0.0	0.0	11.2	0.0	0.0	99.0	114.7
Lane LOS	B			B			F	F
Approach Delay (s)	0.2			0.5			99.0	114.7
Approach LOS							F	F

Intersection Summary				
Average Delay	8.9			
Intersection Capacity Utilization	53.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Volume (veh/h)	14	24	66	107	18	20	65	231	191	55	513	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	26	72	116	20	22	71	251	208	60	558	15
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	1109	1285	565	1186	1189	355	573			459		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1109	1285	565	1186	1189	355	573			459		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	90	82	86	0	88	97	93			95		
cM capacity (veh/h)	150	145	524	112	165	689	1000			1102		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	113	158	71	459	60	573
Volume Left	15	116	71	0	60	0
Volume Right	72	22	0	208	0	15
cSH	270	133	1000	1700	1102	1700
Volume to Capacity	0.42	1.19	0.07	0.27	0.05	0.34
Queue Length 95th (ft)	49	235	6	0	4	0
Control Delay (s)	27.6	202.4	8.9	0.0	8.5	0.0
Lane LOS	D	F	A		A	
Approach Delay (s)	27.6	202.4	1.2		0.8	
Approach LOS	D	F				

Intersection Summary				
Average Delay	25.2			
Intersection Capacity Utilization	56.2%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Volume (veh/h)	26	18	71	175	27	39	96	782	132	15	240	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	20	77	190	29	42	104	850	143	16	261	41
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	1430	1516	282	1434	1465	922	302			993		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1430	1516	282	1434	1465	922	302			993		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	61	82	90	0	74	87	92			98		
cM capacity (veh/h)	72	107	757	79	115	328	1259			696		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	125	262	104	993	16	302
Volume Left	28	190	104	0	16	0
Volume Right	77	42	0	143	0	41
cSH	185	94	1259	1700	696	1700
Volume to Capacity	0.67	2.78	0.08	0.58	0.02	0.18
Queue Length 95th (ft)	101	623	7	0	2	0
Control Delay (s)	57.4	899.3	8.1	0.0	10.3	0.0
Lane LOS	F	F	A		B	
Approach Delay (s)	57.4	899.3	0.8		0.5	
Approach LOS	F	F				

Intersection Summary				
Average Delay	135.2			
Intersection Capacity Utilization	82.7%	ICU Level of Service		E
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	153	90	77	69	34	39	178	43	118	469	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.95		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1759		1770	1770		1770	1808		1770	1859	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1759		1770	1770		1770	1808		1770	1859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	166	98	84	75	37	42	193	47	128	510	7
RTOR Reduction (vph)	0	22	0	0	16	0	0	10	0	0	1	0
Lane Group Flow (vph)	10	242	0	84	96	0	42	230	0	128	516	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	1.1	16.3		6.9	22.1		4.1	20.6		8.2	24.7	
Effective Green, g (s)	1.1	16.3		6.9	22.1		4.1	20.6		8.2	24.7	
Actuated g/C Ratio	0.02	0.24		0.10	0.32		0.06	0.30		0.12	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	29	422		180	575		107	548		213	675	
v/s Ratio Prot	0.01	c0.14		c0.05	0.05		0.02	0.13		c0.07	c0.28	
v/s Ratio Perm												
v/c Ratio	0.34	0.57		0.47	0.17		0.39	0.42		0.60	0.76	
Uniform Delay, d1	33.1	22.8		28.8	16.4		30.8	18.9		28.3	19.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	1.9		1.9	0.1		2.4	0.5		4.7	5.2	
Delay (s)	40.1	24.7		30.7	16.5		33.1	19.5		33.1	24.3	
Level of Service	D	C		C	B		C	B		C	C	
Approach Delay (s)		25.2			22.6			21.5			26.0	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	24.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.63			
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	73	37	67	164	119	113	706	52	43	212	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1769		1770	1745		1770	1843		1770	1846	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1769		1770	1745		1770	1843		1770	1846	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	79	40	73	178	129	123	767	57	47	230	15
RTOR Reduction (vph)	0	16	0	0	21	0	0	2	0	0	2	0
Lane Group Flow (vph)	13	103	0	73	286	0	123	822	0	47	243	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	1.3	15.2		7.6	21.5		11.2	47.0		5.0	40.8	
Effective Green, g (s)	1.3	15.2		7.6	21.5		11.2	47.0		5.0	40.8	
Actuated g/C Ratio	0.01	0.17		0.08	0.24		0.12	0.52		0.06	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	25	296		148	413		218	954		97	829	
v/s Ratio Prot	0.01	0.06		c0.04	c0.16		c0.07	c0.45		0.03	0.13	
v/s Ratio Perm												
v/c Ratio	0.52	0.35		0.49	0.69		0.56	0.86		0.48	0.29	
Uniform Delay, d1	44.4	33.4		39.8	31.6		37.5	19.1		41.6	15.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.1	0.7		2.6	4.9		3.3	8.1		3.8	0.2	
Delay (s)	62.6	34.1		42.3	36.6		40.8	27.1		45.4	16.1	
Level of Service	E	C		D	D		D	C		D	B	
Approach Delay (s)		36.9			37.7			28.9			20.8	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM Average Control Delay	30.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	69.5%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

BAKERSFIELD FUTURE PLUS PROJECT CONDITIONS

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1255	419	0	2223	1340	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2		4.9	4.9	
Lane Util. Factor	1.00	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	0.97	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		5085	4921	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		5085	4921	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1364	455	0	2416	1457	400
RTOR Reduction (vph)	0	2	0	0	33	0
Lane Group Flow (vph)	1364	453	0	2416	1824	0
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	85.8	85.8		55.1	55.1	
Effective Green, g (s)	85.8	85.8		55.1	55.1	
Actuated g/C Ratio	0.57	0.57		0.37	0.37	
Clearance Time (s)	4.2	4.2		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		4.0	4.0	
Lane Grp Cap (vph)	1012	905		1868	1808	
v/s Ratio Prot	c0.77			c0.48	0.37	
v/s Ratio Perm		0.29				
v/c Ratio	1.35	0.50		1.29	1.01	
Uniform Delay, d1	32.1	19.3		47.5	47.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	163.1	0.4		136.1	23.4	
Delay (s)	195.2	19.7		183.6	70.8	
Level of Service	F	B		F	E	
Approach Delay (s)	151.3			183.6	70.8	
Approach LOS	F			F	E	

Intersection Summary

HCM Average Control Delay	139.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	120.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	623	651	0	1436	1133	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2		4.9	4.9	
Lane Util. Factor	1.00	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	0.96	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		5085	4868	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		5085	4868	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	677	708	0	1561	1232	492
RTOR Reduction (vph)	0	9	0	0	111	0
Lane Group Flow (vph)	677	699	0	1561	1613	0
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	29.7	29.7		26.1	26.1	
Effective Green, g (s)	29.7	29.7		26.1	26.1	
Actuated g/C Ratio	0.46	0.46		0.40	0.40	
Clearance Time (s)	4.2	4.2		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		4.0	4.0	
Lane Grp Cap (vph)	810	724		2045	1958	
v/s Ratio Prot	0.38			0.31	c0.33	
v/s Ratio Perm		c0.44				
v/c Ratio	0.84	0.97		0.76	0.82	
Uniform Delay, d1	15.5	17.1		16.7	17.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.5	24.9		1.9	3.1	
Delay (s)	22.9	42.0		18.6	20.4	
Level of Service	C	D		B	C	
Approach Delay (s)	32.7			18.6	20.4	
Approach LOS	C			B	C	

Intersection Summary

HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	9.1
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	547	2	433	0	0	0	0	270	50	135	361	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.87						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.99						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1526						3539	1583	1770	3539	
Flt Permitted	0.95	0.99						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1526						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	595	2	471	0	0	0	0	293	54	147	392	0
RTOR Reduction (vph)	0	237	0	0	0	0	0	0	42	0	0	0
Lane Group Flow (vph)	535	296	0	0	0	0	0	293	12	147	392	0
Turn Type	Split								Perm	Prot		
Protected Phases	8	8						6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	21.7	21.7						12.2	12.2	6.1	22.0	
Effective Green, g (s)	21.7	21.7						12.2	12.2	6.1	22.0	
Actuated g/C Ratio	0.40	0.40						0.23	0.23	0.11	0.41	
Clearance Time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Vehicle Extension (s)	3.8	3.8						4.5	4.5	2.0	4.5	
Lane Grp Cap (vph)	681	618						806	360	201	1453	
v/s Ratio Prot	c0.32	0.19						c0.08		c0.08	0.11	
v/s Ratio Perm									0.01			
v/c Ratio	0.79	0.48						0.36	0.03	0.73	0.27	
Uniform Delay, d1	13.9	11.8						17.4	16.1	23.0	10.5	
Progression Factor	1.00	1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	0.8						0.5	0.1	11.2	0.2	
Delay (s)	20.1	12.5						17.9	16.2	34.1	10.6	
Level of Service	C	B						B	B	C	B	
Approach Delay (s)		16.3			0.0			17.6			17.0	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	13.6
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1057	7	175	0	0	0	0	281	68	246	115	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.96						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.97						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1636						3539	1583	1770	3539	
Flt Permitted	0.95	0.97						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1636						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1149	8	190	0	0	0	0	305	74	267	125	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	61	0	0	0
Lane Group Flow (vph)	689	643	0	0	0	0	0	305	13	267	125	0
Turn Type	Split								Perm	Prot		
Protected Phases	8	8						6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	38.5	38.5						14.4	14.4	14.6	32.7	
Effective Green, g (s)	38.5	38.5						14.4	14.4	14.6	32.7	
Actuated g/C Ratio	0.47	0.47						0.18	0.18	0.18	0.40	
Clearance Time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Vehicle Extension (s)	3.8	3.8						4.5	4.5	2.0	4.5	
Lane Grp Cap (vph)	798	777						628	281	319	1427	
v/s Ratio Prot	c0.41	0.39						c0.09		c0.15	0.04	
v/s Ratio Perm									0.01			
v/c Ratio	0.86	0.83						0.49	0.05	0.84	0.09	
Uniform Delay, d1	19.0	18.4						30.0	27.7	32.1	15.0	
Progression Factor	1.00	1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.8	7.5						1.0	0.1	16.4	0.0	
Delay (s)	28.8	25.9						31.0	27.8	48.5	15.0	
Level of Service	C	C						C	C	D	B	
Approach Delay (s)		27.4			0.0			30.4			37.8	
Approach LOS		C			A			C			D	

Intersection Summary

HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	13.6
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	236	171	105	185	65	374	412	173	36	213	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3401		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3401		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	257	186	114	201	71	407	448	188	39	232	286
RTOR Reduction (vph)	0	0	149	0	49	0	0	0	126	0	0	246
Lane Group Flow (vph)	232	257	38	114	223	0	407	448	62	39	232	40
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	11.0	12.5	12.5	8.3	9.8		14.5	20.3	20.3	2.9	8.7	8.7
Effective Green, g (s)	11.0	12.5	12.5	8.3	9.8		14.5	20.3	20.3	2.9	8.7	8.7
Actuated g/C Ratio	0.18	0.20	0.20	0.13	0.16		0.23	0.33	0.33	0.05	0.14	0.14
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	1.5	2.0	2.0	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	314	714	319	237	538		414	1159	518	83	497	222
v/s Ratio Prot	c0.13	0.07		0.06	c0.07		c0.23	c0.13		0.02	0.07	
v/s Ratio Perm			0.02						0.04			0.03
v/c Ratio	0.74	0.36	0.12	0.48	0.41		0.98	0.39	0.12	0.47	0.47	0.18
Uniform Delay, d1	24.1	21.3	20.2	24.9	23.5		23.6	16.1	14.6	28.8	24.5	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.1	0.1	0.6	0.2		39.4	0.1	0.0	1.5	0.3	0.1
Delay (s)	31.8	21.4	20.3	25.4	23.7		63.1	16.1	14.6	30.3	24.8	23.6
Level of Service	C	C	C	C	C		E	B	B	C	C	C
Approach Delay (s)		24.7			24.2			34.2			24.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	473	673	216	281	102	460	443	181	89	773	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3398		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3398		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	399	514	732	235	305	111	500	482	197	97	840	565
RTOR Reduction (vph)	0	0	349	0	26	0	0	0	162	0	0	323
Lane Group Flow (vph)	399	514	383	235	390	0	500	482	35	97	840	242
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	31.0	35.7	35.7	19.0	23.7		39.0	25.4	25.4	45.6	32.0	32.0
Effective Green, g (s)	31.0	35.7	35.7	19.0	23.7		39.0	25.4	25.4	45.6	32.0	32.0
Actuated g/C Ratio	0.22	0.25	0.25	0.13	0.16		0.27	0.18	0.18	0.32	0.22	0.22
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	1.5	2.0	2.0	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	382	879	393	234	560		480	626	280	562	788	353
v/s Ratio Prot	c0.23	0.15		c0.13	0.11		c0.28	0.14		0.05	c0.24	
v/s Ratio Perm			c0.24						0.02			0.15
v/c Ratio	1.04	0.58	0.97	1.00	0.70		1.04	0.77	0.12	0.17	1.07	0.69
Uniform Delay, d1	56.3	47.5	53.5	62.3	56.6		52.3	56.4	49.8	35.4	55.8	51.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	58.1	0.6	38.0	59.9	3.0		52.3	5.1	0.1	0.1	51.1	4.4
Delay (s)	114.5	48.1	91.5	122.3	59.7		104.7	61.5	49.9	35.5	107.0	55.6
Level of Service	F	D	F	F	E		F	E	D	D	F	E
Approach Delay (s)		83.5			82.3			77.9			83.0	
Approach LOS		F			F			E			F	

Intersection Summary

HCM Average Control Delay	81.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	143.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	312	91	123	247	26	84	677	309	44	485	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3489		1770	3373		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3489		1770	3373		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	339	99	134	268	28	91	736	336	48	527	79
RTOR Reduction (vph)	0	0	78	0	11	0	0	60	0	0	0	52
Lane Group Flow (vph)	165	339	21	134	285	0	91	1012	0	48	527	27
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	8.9	13.4	13.4	6.1	10.6		5.7	23.4		3.4	21.1	21.1
Effective Green, g (s)	8.9	13.4	13.4	6.1	10.6		5.7	23.4		3.4	21.1	21.1
Actuated g/C Ratio	0.14	0.22	0.22	0.10	0.17		0.09	0.38		0.05	0.34	0.34
Clearance Time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	254	764	342	174	596		162	1271		97	1202	538
v/s Ratio Prot	0.09	c0.10		c0.08	0.08		c0.05	c0.30		0.03	0.15	
v/s Ratio Perm			0.01									0.02
v/c Ratio	0.65	0.44	0.06	0.77	0.48		0.56	0.80		0.49	0.44	0.05
Uniform Delay, d1	25.1	21.1	19.4	27.3	23.3		27.0	17.2		28.5	15.9	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.2	0.2	0.0	17.2	0.2		2.6	3.3		1.4	0.1	0.0
Delay (s)	29.4	21.3	19.4	44.5	23.5		29.6	20.5		30.0	16.0	13.8
Level of Service	C	C	B	D	C		C	C		C	B	B
Approach Delay (s)		23.2			30.0			21.2			16.8	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	11.4
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	317	152	263	381	52	79	609	255	68	914	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3475		1770	3383		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3475		1770	3383		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	345	165	286	414	57	86	662	277	74	993	187
RTOR Reduction (vph)	0	0	137	0	12	0	0	48	0	0	0	123
Lane Group Flow (vph)	147	345	28	286	459	0	86	891	0	74	993	65
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	9.9	12.7	12.7	15.0	17.8		5.5	25.9		5.4	25.8	25.8
Effective Green, g (s)	9.9	12.7	12.7	15.0	17.8		5.5	25.9		5.4	25.8	25.8
Actuated g/C Ratio	0.13	0.17	0.17	0.20	0.24		0.07	0.35		0.07	0.34	0.34
Clearance Time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	234	601	269	355	827		130	1171		128	1221	546
v/s Ratio Prot	0.08	0.10		c0.16	c0.13		c0.05	0.26		0.04	c0.28	
v/s Ratio Perm			0.02									0.04
v/c Ratio	0.63	0.57	0.10	0.81	0.55		0.66	0.76		0.58	0.81	0.12
Uniform Delay, d1	30.7	28.6	26.2	28.5	25.0		33.7	21.7		33.6	22.3	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.8	0.8	0.1	11.8	0.5		9.4	2.7		3.9	4.0	0.0
Delay (s)	34.5	29.4	26.3	40.4	25.5		43.1	24.4		37.5	26.3	16.8
Level of Service	C	C	C	D	C		D	C		D	C	B
Approach Delay (s)		29.8			31.1			25.9			25.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	11.4
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	220	30	44	234	39	39	179	56	33	72	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3475		1770	3464		1770	1863	1583	1770	1685	
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00	1.00	0.64	1.00	
Satd. Flow (perm)	1770	3475		1770	3464		1152	1863	1583	1183	1685	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	310	239	33	48	254	42	42	195	61	36	78	136
RTOR Reduction (vph)	0	12	0	0	20	0	0	0	50	0	101	0
Lane Group Flow (vph)	310	260	0	48	276	0	42	195	11	36	113	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	13.1	21.4		2.2	10.5		8.3	8.3	8.3	8.3	8.3	
Effective Green, g (s)	13.1	21.4		2.2	10.5		8.3	8.3	8.3	8.3	8.3	
Actuated g/C Ratio	0.29	0.47		0.05	0.23		0.18	0.18	0.18	0.18	0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	505	1620		85	792		208	337	286	214	305	
v/s Ratio Prot	c0.18	0.07		0.03	c0.08			c0.10			0.07	
v/s Ratio Perm							0.04		0.01	0.03		
v/c Ratio	0.61	0.16		0.56	0.35		0.20	0.58	0.04	0.17	0.37	
Uniform Delay, d1	14.2	7.1		21.4	14.8		16.0	17.2	15.5	15.9	16.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.0		5.0	0.1		0.2	1.5	0.0	0.1	0.3	
Delay (s)	15.8	7.1		26.4	14.9		16.2	18.7	15.5	16.0	16.8	
Level of Service	B	A		C	B		B	B	B	B	B	
Approach Delay (s)		11.7			16.5			17.7			16.7	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	405	66	77	408	43	54	226	71	51	283	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3465		1770	3488		1770	1863	1583	1770	1719	
Flt Permitted	0.95	1.00		0.95	1.00		0.16	1.00	1.00	0.58	1.00	
Satd. Flow (perm)	1770	3465		1770	3488		296	1863	1583	1082	1719	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	440	72	84	443	47	59	246	77	55	308	326
RTOR Reduction (vph)	0	17	0	0	11	0	0	0	46	0	47	0
Lane Group Flow (vph)	190	495	0	84	479	0	59	246	31	55	587	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	9.7	19.0		5.3	14.6		25.2	25.2	25.2	25.2	25.2	
Effective Green, g (s)	9.7	19.0		5.3	14.6		25.2	25.2	25.2	25.2	25.2	
Actuated g/C Ratio	0.15	0.30		0.08	0.23		0.40	0.40	0.40	0.40	0.40	
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	270	1037		148	802		117	739	628	429	682	
v/s Ratio Prot	c0.11	0.14		0.05	c0.14			0.13			c0.34	
v/s Ratio Perm							0.20		0.02	0.05		
v/c Ratio	0.70	0.48		0.57	0.60		0.50	0.33	0.05	0.13	0.86	
Uniform Delay, d1	25.5	18.2		28.0	21.8		14.4	13.3	11.8	12.2	17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.6	0.1		3.0	0.8		1.2	0.1	0.0	0.0	10.5	
Delay (s)	32.2	18.3		31.0	22.6		15.7	13.4	11.8	12.2	28.0	
Level of Service	C	B		C	C		B	B	B	B	C	
Approach Delay (s)		22.1			23.8			13.4			26.7	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	109	65	298	223	400	98	1524	193	95	1483	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4999		1770	5056	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4999		1770	5056	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	118	71	324	242	435	107	1657	210	103	1612	64
RTOR Reduction (vph)	0	0	59	0	0	147	0	15	0	0	4	0
Lane Group Flow (vph)	122	118	12	324	242	288	107	1852	0	103	1672	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.4	17.1	17.1	18.4	26.1	26.1	8.0	38.5		7.9	38.4	
Effective Green, g (s)	9.4	17.1	17.1	18.4	26.1	26.1	8.0	38.5		7.9	38.4	
Actuated g/C Ratio	0.09	0.17	0.17	0.19	0.26	0.26	0.08	0.39		0.08	0.39	
Clearance Time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Vehicle Extension (s)	2.0	5.4	5.4	2.0	5.3	5.3	2.0	4.5		2.0	5.2	
Lane Grp Cap (vph)	168	611	273	329	932	417	143	1942		141	1959	
v/s Ratio Prot	0.07	0.03		c0.18	0.07		c0.06	c0.37		0.06	0.33	
v/s Ratio Perm			0.01			c0.18						
v/c Ratio	0.73	0.19	0.04	0.98	0.26	0.69	0.75	0.95		0.73	0.85	
Uniform Delay, d1	43.6	35.1	34.2	40.2	28.9	32.9	44.6	29.4		44.6	27.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.4	0.4	0.2	45.0	0.3	6.4	16.9	11.6		15.4	4.3	
Delay (s)	56.0	35.5	34.4	85.3	29.2	39.2	61.5	41.0		59.9	32.0	
Level of Service	E	D	C	F	C	D	E	D		E	C	
Approach Delay (s)		43.3			51.7			42.1			33.7	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	7.4
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	195	197	283	282	350	111	1458	267	103	2238	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4967		1770	5061	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4967		1770	5061	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	212	214	308	307	380	121	1585	290	112	2433	79
RTOR Reduction (vph)	0	0	109	0	0	117	0	19	0	0	3	0
Lane Group Flow (vph)	226	212	105	308	307	263	121	1856	0	112	2509	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	18.1	22.0	22.0	21.3	25.2	25.2	9.3	62.9		10.7	64.3	
Effective Green, g (s)	18.1	22.0	22.0	21.3	25.2	25.2	9.3	62.9		10.7	64.3	
Actuated g/C Ratio	0.13	0.16	0.16	0.16	0.19	0.19	0.07	0.47		0.08	0.48	
Clearance Time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Vehicle Extension (s)	2.0	5.4	5.4	2.0	5.3	5.3	2.0	4.5		2.0	5.2	
Lane Grp Cap (vph)	239	581	260	281	665	297	123	2330		141	2427	
v/s Ratio Prot	0.13	0.06		c0.17	0.09		c0.07	0.37		0.06	c0.50	
v/s Ratio Perm			0.07			c0.17						
v/c Ratio	0.95	0.36	0.41	1.10	0.46	0.89	0.98	0.80		0.79	1.03	
Uniform Delay, d1	57.5	49.8	50.2	56.4	48.4	53.0	62.3	30.2		60.6	34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.6	0.9	2.4	81.8	1.2	27.3	75.5	2.2		24.2	27.7	
Delay (s)	100.1	50.8	52.6	138.2	49.6	80.3	137.8	32.4		84.8	62.6	
Level of Service	F	D	D	F	D	F	F	C		F	E	
Approach Delay (s)		68.5			88.8			38.8			63.6	
Approach LOS		E			F			D			E	

Intersection Summary

HCM Average Control Delay	60.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	134.1	Sum of lost time (s)	12.3
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	342	39	381	277	4	659	58	56	2	88	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3532		1770	1725			1794	
Flt Permitted	0.55	1.00	1.00	0.50	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1026	3539	1583	929	3532		1770	1725			1794	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	372	42	414	301	4	716	63	61	2	96	36
RTOR Reduction (vph)	0	0	24	0	1	0	0	22	0	0	10	0
Lane Group Flow (vph)	21	372	18	414	304	0	716	102	0	0	124	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		2			6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)	54.9	54.9	54.9	54.9	54.9		47.8	47.8			13.3	
Effective Green, g (s)	54.9	54.9	54.9	54.9	54.9		47.8	47.8			13.3	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42		0.37	0.37			0.10	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			2.0	
Lane Grp Cap (vph)	432	1491	667	391	1488		649	633			183	
v/s Ratio Prot		0.11			0.09		c0.40	0.06			c0.07	
v/s Ratio Perm	0.02		0.01	c0.45								
v/c Ratio	0.05	0.25	0.03	1.06	0.20		1.10	0.16			0.68	
Uniform Delay, d1	22.3	24.4	22.1	37.7	23.9		41.3	27.8			56.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	61.9	0.1		67.0	0.2			7.6	
Delay (s)	22.3	24.5	22.1	99.6	24.0		108.3	27.9			64.0	
Level of Service	C	C	C	F	C		F	C			E	
Approach Delay (s)		24.2			67.5			96.4			64.0	
Approach LOS		C			E			F			E	

Intersection Summary

HCM Average Control Delay	69.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	130.3	Sum of lost time (s)	14.3
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	462	53	312	403	4	479	84	104	3	107	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3534		1770	1708			1774	
Flt Permitted	0.46	1.00	1.00	0.42	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	857	3539	1583	785	3534		1770	1708			1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	502	58	339	438	4	521	91	113	3	116	63
RTOR Reduction (vph)	0	0	28	0	1	0	0	28	0	0	14	0
Lane Group Flow (vph)	64	502	30	339	441	0	521	176	0	0	168	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		2			6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)	63.4	63.4	63.4	63.4	63.4		39.5	39.5			16.9	
Effective Green, g (s)	63.4	63.4	63.4	63.4	63.4		39.5	39.5			16.9	
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.47		0.29	0.29			0.13	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			2.0	
Lane Grp Cap (vph)	405	1673	748	371	1671		521	503			224	
v/s Ratio Prot		0.14			0.12		c0.29	0.10			c0.09	
v/s Ratio Perm	0.07		0.02	c0.43								
v/c Ratio	0.16	0.30	0.04	0.91	0.26		1.00	0.35			0.75	
Uniform Delay, d1	20.1	21.7	19.0	32.8	21.3		47.3	37.2			56.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.1	0.0	26.6	0.1		39.4	0.6			11.8	
Delay (s)	20.4	21.9	19.0	59.5	21.4		86.7	37.8			68.3	
Level of Service	C	C	B	E	C		F	D			E	
Approach Delay (s)		21.4			37.9			73.0			68.3	
Approach LOS		C			D			E			E	

Intersection Summary

HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	134.1	Sum of lost time (s)	14.3
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	95	69	195	138	46	60	733	147	46	697	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1745		1770	1793		1770	3450		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1745		1770	1793		1770	3450		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	103	75	212	150	50	65	797	160	50	758	96
RTOR Reduction (vph)	0	35	0	0	15	0	0	19	0	0	0	64
Lane Group Flow (vph)	78	143	0	212	185	0	65	938	0	50	758	32
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	5.1	10.9		11.1	16.9		3.7	22.4		3.4	22.1	22.1
Effective Green, g (s)	5.1	10.9		11.1	16.9		3.7	22.4		3.4	22.1	22.1
Actuated g/C Ratio	0.08	0.16		0.17	0.25		0.06	0.34		0.05	0.33	0.33
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	1.0	2.0		1.5	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	136	286		296	456		99	1164		91	1178	527
v/s Ratio Prot	0.04	c0.08		c0.12	0.10		c0.04	c0.27		0.03	0.21	
v/s Ratio Perm												0.02
v/c Ratio	0.57	0.50		0.72	0.41		0.66	0.81		0.55	0.64	0.06
Uniform Delay, d1	29.6	25.3		26.2	20.6		30.7	20.0		30.8	18.8	15.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.6	0.5		6.7	0.2		11.3	3.9		3.6	0.9	0.0
Delay (s)	33.2	25.8		32.9	20.8		42.1	24.0		34.4	19.7	15.1
Level of Service	C	C		C	C		D	C		C	B	B
Approach Delay (s)		28.0			27.0			25.1			20.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	208	70	153	175	39	77	954	431	59	852	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.97		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1792		1770	1812		1770	3374		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1792		1770	1812		1770	3374		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	226	76	166	190	42	84	1037	468	64	926	189
RTOR Reduction (vph)	0	12	0	0	8	0	0	47	0	0	0	93
Lane Group Flow (vph)	150	290	0	166	224	0	84	1458	0	64	926	96
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	9.1	19.2		10.1	20.2		6.2	44.8		5.5	44.1	44.1
Effective Green, g (s)	9.1	19.2		10.1	20.2		6.2	44.8		5.5	44.1	44.1
Actuated g/C Ratio	0.09	0.20		0.10	0.21		0.06	0.46		0.06	0.45	0.45
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	1.0	2.0		1.5	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	164	350		182	373		112	1539		99	1589	711
v/s Ratio Prot	0.08	c0.16		c0.09	0.12		c0.05	c0.43		0.04	0.26	
v/s Ratio Perm												0.06
v/c Ratio	0.91	0.83		0.91	0.60		0.75	0.95		0.65	0.58	0.14
Uniform Delay, d1	44.2	37.9		43.6	35.3		45.2	25.6		45.4	20.2	15.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	45.2	14.2		41.8	1.9		21.8	12.4		10.4	0.4	0.0
Delay (s)	89.4	52.1		85.4	37.2		67.0	37.9		55.8	20.5	15.9
Level of Service	F	D		F	D		E	D		E	C	B
Approach Delay (s)		64.5			57.3			39.5			21.7	
Approach LOS		E			E			D			C	

Intersection Summary

HCM Average Control Delay	38.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	13.3
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	110	43	100	84	35	87	610	69	27	335	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1784		1770	1780		1770	3485		1770	3505	
Flt Permitted	0.67	1.00		0.65	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1256	1784		1214	1780		1770	3485		1770	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	120	47	109	91	38	95	663	75	29	364	25
RTOR Reduction (vph)	0	27	0	0	29	0	0	11	0	0	7	0
Lane Group Flow (vph)	60	140	0	109	100	0	95	727	0	29	382	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	6.6	6.6		6.6	6.6		3.4	17.2		0.8	14.6	
Effective Green, g (s)	6.6	6.6		6.6	6.6		3.4	17.2		0.8	14.6	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.09	0.45		0.02	0.38	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	217	308		210	308		158	1569		37	1340	
v/s Ratio Prot		0.08			0.06		c0.05	c0.21		0.02	0.11	
v/s Ratio Perm	0.05			c0.09								
v/c Ratio	0.28	0.45		0.52	0.32		0.60	0.46		0.78	0.29	
Uniform Delay, d1	13.7	14.2		14.4	13.8		16.7	7.3		18.6	8.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.4		0.9	0.2		4.4	0.1		63.9	0.0	
Delay (s)	14.0	14.6		15.3	14.1		21.1	7.4		82.5	8.2	
Level of Service	B	B		B	B		C	A		F	A	
Approach Delay (s)		14.4			14.6			8.9			13.4	
Approach LOS		B			B			A			B	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	140	168	134	98	34	114	503	98	30	789	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.92		1.00	0.96		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1710		1770	1791		1770	3452		1770	3512	
Flt Permitted	0.67	1.00		0.39	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1239	1710		731	1791		1770	3452		1770	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	152	183	146	107	37	124	547	107	33	858	46
RTOR Reduction (vph)	0	75	0	0	21	0	0	21	0	0	6	0
Lane Group Flow (vph)	33	260	0	146	123	0	124	633	0	33	898	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	13.9	13.9		13.9	13.9		5.2	22.7		1.9	19.4	
Effective Green, g (s)	13.9	13.9		13.9	13.9		5.2	22.7		1.9	19.4	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.10	0.44		0.04	0.37	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	331	456		195	478		177	1504		65	1308	
v/s Ratio Prot		0.15			0.07		c0.07	c0.18		0.02	c0.26	
v/s Ratio Perm	0.03			c0.20								
v/c Ratio	0.10	0.57		0.75	0.26		0.70	0.42		0.51	0.69	
Uniform Delay, d1	14.4	16.5		17.5	15.0		22.7	10.2		24.6	13.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.1		12.8	0.1		9.8	0.1		2.3	1.2	
Delay (s)	14.4	17.6		30.3	15.1		32.5	10.2		26.9	15.0	
Level of Service	B	B		C	B		C	B		C	B	
Approach Delay (s)		17.3			22.8			13.8			15.4	
Approach LOS		B			C			B			B	

Intersection Summary

HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	58	38	32	65	28	39	359	22	25	232	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1847		1770	1838	
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	0.59	1.00		0.52	1.00	
Satd. Flow (perm)	1863	1863	1583	1863	1863	1583	1098	1847		968	1838	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	63	41	35	71	30	42	390	24	27	252	25
RTOR Reduction (vph)	0	0	35	0	0	26	0	5	0	0	7	0
Lane Group Flow (vph)	34	63	6	35	71	4	42	409	0	27	270	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	2.9	2.9	2.9	2.9	2.9	2.9	7.7	7.7		7.7	7.7	
Effective Green, g (s)	2.9	2.9	2.9	2.9	2.9	2.9	7.7	7.7		7.7	7.7	
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.39	0.39		0.39	0.39	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	270	270	230	270	270	230	423	711		373	708	
v/s Ratio Prot		0.03			c0.04			c0.22			0.15	
v/s Ratio Perm	0.02		0.00	0.02		0.00	0.04			0.03		
v/c Ratio	0.13	0.23	0.03	0.13	0.26	0.02	0.10	0.58		0.07	0.38	
Uniform Delay, d1	7.4	7.6	7.3	7.5	7.6	7.3	3.9	4.9		3.9	4.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2	0.0	0.1	0.2	0.0	0.0	0.7		0.0	0.1	
Delay (s)	7.5	7.7	7.4	7.5	7.8	7.3	4.0	5.6		3.9	4.6	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		7.6			7.6			5.4			4.5	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	20.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	104	52	34	125	20	35	357	40	32	524	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1835		1770	1837	
Flt Permitted	0.71	1.00	1.00	0.71	1.00	1.00	0.34	1.00		0.51	1.00	
Satd. Flow (perm)	1331	1863	1583	1331	1863	1583	640	1835		953	1837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	113	57	37	136	22	38	388	43	35	570	58
RTOR Reduction (vph)	0	0	47	0	0	18	0	6	0	0	6	0
Lane Group Flow (vph)	66	113	10	37	136	4	38	425	0	35	622	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	5.6	5.6	5.6	5.6	5.6	5.6	16.1	16.1		16.1	16.1	
Effective Green, g (s)	5.6	5.6	5.6	5.6	5.6	5.6	16.1	16.1		16.1	16.1	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.52	0.52		0.52	0.52	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	240	335	285	240	335	285	331	950		493	951	
v/s Ratio Prot		0.06			c0.07			0.23			c0.34	
v/s Ratio Perm	0.05		0.01	0.03		0.00	0.06			0.04		
v/c Ratio	0.28	0.34	0.04	0.15	0.41	0.01	0.11	0.45		0.07	0.65	
Uniform Delay, d1	11.0	11.1	10.5	10.8	11.3	10.5	3.8	4.7		3.8	5.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2	0.0	0.1	0.3	0.0	0.1	0.1		0.0	1.2	
Delay (s)	11.2	11.3	10.5	10.9	11.6	10.5	3.9	4.8		3.8	6.7	
Level of Service	B	B	B	B	B	B	A	A		A	A	
Approach Delay (s)		11.1			11.3			4.8			6.6	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	31.1	Sum of lost time (s)	9.4
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	69	54	91	76	56	66	1901	39	47	1537	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.93			0.97		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1740			1764		1770	5070		1770	5039	
Flt Permitted	0.53	1.00			0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	984	1740			1453		1770	5070		1770	5039	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	75	59	99	83	61	72	2066	42	51	1671	108
RTOR Reduction (vph)	0	42	0	0	17	0	0	2	0	0	6	0
Lane Group Flow (vph)	60	92	0	0	226	0	72	2106	0	51	1773	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	12.7	12.7			13.0		4.2	33.7		3.9	33.4	
Effective Green, g (s)	12.7	12.7			13.0		4.2	33.7		3.9	33.4	
Actuated g/C Ratio	0.20	0.20			0.21		0.07	0.53		0.06	0.53	
Clearance Time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Vehicle Extension (s)	0.2	0.2			0.2		2.0	5.7		2.0	5.7	
Lane Grp Cap (vph)	197	349			298		117	2695		109	2655	
v/s Ratio Prot		0.05					c0.04	c0.42		0.03	0.35	
v/s Ratio Perm	0.06				c0.16							
v/c Ratio	0.30	0.26			0.76		0.62	0.78		0.47	0.67	
Uniform Delay, d1	21.6	21.4			23.7		28.8	11.9		28.7	11.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1			9.3		6.6	1.9		1.2	1.0	
Delay (s)	21.9	21.6			33.1		35.4	13.8		29.9	11.9	
Level of Service	C	C			C		D	B		C	B	
Approach Delay (s)		21.7			33.1			14.5			12.4	
Approach LOS		C			C			B			B	

Intersection Summary

HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	7.9
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	106	36	104	54	68	74	1798	67	169	2248	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.96			0.96		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1792			1747		1770	5058		1770	5062	
Flt Permitted	0.52	1.00			0.70		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	970	1792			1248		1770	5058		1770	5062	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	115	39	113	59	74	80	1954	73	184	2443	76
RTOR Reduction (vph)	0	15	0	0	19	0	0	3	0	0	3	0
Lane Group Flow (vph)	84	139	0	0	227	0	80	2024	0	184	2516	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	15.1	15.1			15.4		6.1	41.7		10.3	45.9	
Effective Green, g (s)	15.1	15.1			15.4		6.1	41.7		10.3	45.9	
Actuated g/C Ratio	0.19	0.19			0.19		0.08	0.52		0.13	0.57	
Clearance Time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Vehicle Extension (s)	0.2	0.2			0.2		2.0	5.7		2.0	5.7	
Lane Grp Cap (vph)	183	337			240		135	2630		227	2897	
v/s Ratio Prot		0.08					0.05	0.40		c0.10	c0.50	
v/s Ratio Perm	0.09				c0.18							
v/c Ratio	0.46	0.41			0.94		0.59	0.77		0.81	0.87	
Uniform Delay, d1	28.9	28.6			32.0		35.8	15.4		34.0	14.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.3			42.2		4.6	1.8		18.4	3.4	
Delay (s)	29.6	28.9			74.2		40.4	17.2		52.4	18.0	
Level of Service	C	C			E		D	B		D	B	
Approach Delay (s)		29.2			74.2			18.1			20.3	
Approach LOS		C			E			B			C	

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	7.9
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	26	5	21	26	69	2	707	28	48	339	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.89		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1820		1770	1659		1770	3519		1770	3511	
Flt Permitted	1.00	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1863	1820		1863	1659		1770	3519		1770	3511	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	28	5	23	28	75	2	768	30	52	368	21
RTOR Reduction (vph)	0	5	0	0	68	0	0	4	0	0	5	0
Lane Group Flow (vph)	25	28	0	23	35	0	2	794	0	52	384	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	3.0	3.0		3.0	3.0		1.5	15.9		1.7	16.1	
Effective Green, g (s)	3.0	3.0		3.0	3.0		1.5	15.9		1.7	16.1	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.04	0.46		0.05	0.47	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	163	160		163	146		78	1636		88	1653	
v/s Ratio Prot		0.02			c0.02		0.00	c0.23		c0.03	0.11	
v/s Ratio Perm	0.01			0.01								
v/c Ratio	0.15	0.18		0.14	0.24		0.03	0.49		0.59	0.23	
Uniform Delay, d1	14.4	14.5		14.4	14.5		15.7	6.3		15.9	5.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		0.1	0.3		0.0	0.1		6.9	0.0	
Delay (s)	14.6	14.7		14.6	14.8		15.7	6.4		22.8	5.4	
Level of Service	B	B		B	B		B	A		C	A	
Approach Delay (s)		14.6			14.8			6.4			7.5	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	38	18	59	27	91	15	608	27	84	727	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.88		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1771		1770	1647		1770	3517		1770	3502	
Flt Permitted	0.80	1.00		0.80	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1490	1771		1490	1647		1770	3517		1770	3502	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	41	20	64	29	99	16	661	29	91	790	59
RTOR Reduction (vph)	0	17	0	0	86	0	0	4	0	0	7	0
Lane Group Flow (vph)	43	44	0	64	42	0	16	686	0	91	842	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	5.0	5.0		5.0	5.0		1.1	15.8		3.3	18.0	
Effective Green, g (s)	5.0	5.0		5.0	5.0		1.1	15.8		3.3	18.0	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.03	0.42		0.09	0.48	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	198	235		198	218		52	1474		155	1672	
v/s Ratio Prot		0.02			0.03		0.01	c0.20		0.05	c0.24	
v/s Ratio Perm	0.03			c0.04								
v/c Ratio	0.22	0.19		0.32	0.19		0.31	0.47		0.59	0.50	
Uniform Delay, d1	14.6	14.5		14.8	14.6		17.9	7.9		16.5	6.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.3	0.2		1.2	0.1		3.6	0.1	
Delay (s)	14.8	14.7		15.2	14.7		19.2	8.0		20.2	6.9	
Level of Service	B	B		B	B		B	A		C	A	
Approach Delay (s)		14.7			14.9			8.2			8.2	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	37.7	Sum of lost time (s)	9.6
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	49	35	3	9	46	43	13	398	11	35	201	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	38	3	10	50	47	14	433	12	38	218	14

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	95	107	14	445	38	233
Volume Left (vph)	53	10	14	0	38	0
Volume Right (vph)	3	47	0	12	0	14
Hadj (s)	0.13	-0.21	0.53	0.02	0.53	-0.01
Departure Headway (s)	6.1	5.8	6.0	5.5	6.2	5.6
Degree Utilization, x	0.16	0.17	0.02	0.68	0.07	0.36
Capacity (veh/h)	517	547	580	636	553	610
Control Delay (s)	10.3	9.9	7.9	17.9	8.4	10.7
Approach Delay (s)	10.3	9.9	17.6		10.3	
Approach LOS	B	A	C		B	

Intersection Summary			
Delay	13.9		
HCM Level of Service	B		
Intersection Capacity Utilization	46.3%	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			Stop			Stop	
Volume (vph)	42	58	21	32	65	56	17	415	22	71	584	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	63	23	35	71	61	18	451	24	77	635	73

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	132	166	18	475	77	708
Volume Left (vph)	46	35	18	0	77	0
Volume Right (vph)	23	61	0	24	0	73
Hadj (s)	0.00	-0.14	0.53	0.00	0.53	-0.04
Departure Headway (s)	7.5	7.2	7.1	6.6	7.0	6.5
Degree Utilization, x	0.28	0.33	0.04	0.87	0.15	1.27
Capacity (veh/h)	446	463	492	537	498	563
Control Delay (s)	13.4	13.9	9.2	38.2	10.1	155.1
Approach Delay (s)	13.4	13.9	37.1		140.8	
Approach LOS	B	B	E		F	

Intersection Summary			
Delay	84.3		
HCM Level of Service	F		
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	1140	91	116	924	245	134	75	344	347	343	1007
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	5.3		3.7	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	0.88	1.00	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5029		1770	5085	1583	1770	1863	2787	1770	1633	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5029		1770	5085	1583	1770	1863	2787	1770	1633	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	1239	99	126	1004	266	146	82	374	377	373	1095
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	340	0	32	170
Lane Group Flow (vph)	124	1330	0	126	1004	266	146	82	34	377	736	531
Turn Type	Prot			Prot		Free	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						Free			3			4
Actuated Green, G (s)	10.6	33.7		8.3	31.4	120.0	11.0	11.0	11.0	50.0	50.0	50.0
Effective Green, g (s)	10.6	33.7		8.3	31.4	120.0	11.0	11.0	11.0	50.0	50.0	50.0
Actuated g/C Ratio	0.09	0.28		0.07	0.26	1.00	0.09	0.09	0.09	0.42	0.42	0.42
Clearance Time (s)	3.7	5.3		3.7	5.3		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1		2.0	4.5		4.5	4.5	4.5	7.1	7.1	7.1
Lane Grp Cap (vph)	156	1412		122	1331	1583	162	171	255	738	680	627
v/s Ratio Prot	0.07	c0.26		c0.07	0.20		c0.08	0.04		0.21	c0.45	
v/s Ratio Perm						0.17			0.01			0.35
v/c Ratio	0.79	0.94		1.03	0.75	0.17	0.90	0.48	0.13	0.51	1.08	0.85
Uniform Delay, d1	53.6	42.2		55.9	40.8	0.0	54.0	51.8	50.1	25.9	35.0	31.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.3	12.8		90.5	2.8	0.2	44.6	3.6	0.4	2.0	58.7	12.3
Delay (s)	76.0	55.0		146.4	43.5	0.2	98.5	55.4	50.5	28.0	93.7	43.8
Level of Service	E	D		F	D	A	F	E	D	C	F	D
Approach Delay (s)		56.7			44.6			62.8			61.3	
Approach LOS		E			D			E			E	

Intersection Summary

HCM Average Control Delay	55.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	500	1485	243	188	1155	690	146	125	291	326	546	1193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	5.3		3.7	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	0.88	1.00	0.95	0.95
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4978		1770	5085	1583	1770	1863	2787	1770	1662	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	4978		1770	5085	1583	1770	1863	2787	1770	1662	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	543	1614	264	204	1255	750	159	136	316	354	593	1297
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	291	0	17	298
Lane Group Flow (vph)	543	1862	0	204	1255	750	159	136	25	354	978	597
Turn Type	Prot			Prot		Free	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						Free			3			4
Actuated Green, G (s)	27.3	41.7		14.3	28.7	140.0	11.0	11.0	11.0	56.0	56.0	56.0
Effective Green, g (s)	27.3	41.7		14.3	28.7	140.0	11.0	11.0	11.0	56.0	56.0	56.0
Actuated g/C Ratio	0.20	0.30		0.10	0.20	1.00	0.08	0.08	0.08	0.40	0.40	0.40
Clearance Time (s)	3.7	5.3		3.7	5.3		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1		2.0	4.5		4.5	4.5	4.5	7.1	7.1	7.1
Lane Grp Cap (vph)	345	1483		181	1042	1583	139	146	219	708	665	602
v/s Ratio Prot	c0.31	c0.37		0.12	c0.25		c0.09	0.07		0.20	c0.59	
v/s Ratio Perm						0.47			0.01			0.40
v/c Ratio	1.57	1.26		1.13	1.20	0.47	1.14	0.93	0.11	0.50	1.47	0.99
Uniform Delay, d1	56.4	49.1		62.9	55.6	0.0	64.5	64.1	60.0	31.5	42.0	41.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	271.9	120.6		105.2	101.2	1.0	120.2	55.1	0.4	2.0	219.7	34.8
Delay (s)	328.2	169.8		168.0	156.9	1.0	184.7	119.2	60.4	33.5	261.7	76.6
Level of Service	F	F		F	F	A	F	F	E	C	F	E
Approach Delay (s)		205.3			105.0			105.8			151.9	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	151.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	125.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1308	1003	0	1249	23	479	16	705	31	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.0		5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91	1.00		0.91	1.00	0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085	1583		5085	1583	1681	1690	1583	1770		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.63		1.00
Satd. Flow (perm)	1770	5085	1583		5085	1583	1681	1690	1583	1183		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1422	1090	0	1358	25	521	17	766	34	0	37
RTOR Reduction (vph)	0	0	0	0	0	10	0	0	86	0	0	35
Lane Group Flow (vph)	11	1422	1090	0	1358	15	271	267	680	34	0	2
Turn Type	Prot		Free			Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases			Free						3	4		4
Actuated Green, G (s)	1.2	39.8	95.8		34.5	34.5	36.5	36.5	36.5	6.3		6.3
Effective Green, g (s)	1.2	39.8	95.8		34.5	34.5	36.5	36.5	36.5	6.3		6.3
Actuated g/C Ratio	0.01	0.42	1.00		0.36	0.36	0.38	0.38	0.38	0.07		0.07
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	22	2113	1583		1831	570	640	644	603	78		104
v/s Ratio Prot	0.01	0.28			0.27	0.01	0.16	0.16				
v/s Ratio Perm			c0.69						c0.43	0.03		0.00
v/c Ratio	0.50	0.67	0.69		0.74	0.03	0.42	0.41	1.13	0.44		0.02
Uniform Delay, d1	47.0	22.7	0.0		26.8	19.8	21.9	21.8	29.6	43.0		41.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	6.4	1.1	2.5		1.8	0.0	0.9	0.9	77.1	1.4		0.0
Delay (s)	53.4	23.9	2.5		28.6	19.8	22.8	22.7	106.7	44.5		41.9
Level of Service	D	C	A		C	B	C	C	F	D		D
Approach Delay (s)		14.7			28.4			72.1			43.1	
Approach LOS		B			C			E			D	

Intersection Summary

HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	4.6
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1168	1202	0	2243	68	301	9	586	55	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.0		5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91	1.00		0.91	1.00	0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085	1583		5085	1583	1681	1690	1583	1770		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.64		1.00
Satd. Flow (perm)	1770	5085	1583		5085	1583	1681	1690	1583	1200		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	1270	1307	0	2438	74	327	10	637	60	0	80
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	46	0	0	75
Lane Group Flow (vph)	75	1270	1307	0	2438	61	167	170	591	60	0	5
Turn Type	Prot		Free			Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases			Free						3	4		4
Actuated Green, G (s)	8.0	76.8	144.6		64.7	64.7	46.4	46.4	46.4	8.2		8.2
Effective Green, g (s)	8.0	76.8	144.6		64.7	64.7	46.4	46.4	46.4	8.2		8.2
Actuated g/C Ratio	0.06	0.53	1.00		0.45	0.45	0.32	0.32	0.32	0.06		0.06
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	98	2701	1583		2275	708	539	542	508	68		90
v/s Ratio Prot	0.04	0.25			c0.48	0.04	0.10	0.10				
v/s Ratio Perm			c0.83						c0.37	0.05		0.00
v/c Ratio	0.77	0.47	0.83		1.07	0.09	0.31	0.31	1.16	0.88		0.05
Uniform Delay, d1	67.4	21.2	0.0		39.9	23.0	37.0	37.1	49.1	67.7		64.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	26.8	0.3	5.1		41.4	0.1	0.7	0.7	93.3	68.1		0.1
Delay (s)	94.1	21.5	5.1		81.4	23.0	37.7	37.8	142.4	135.8		64.6
Level of Service	F	C	A		F	C	D	D	F	F		E
Approach Delay (s)		15.4			79.7			106.2			95.1	
Approach LOS		B			E			F			F	

Intersection Summary			
HCM Average Control Delay	57.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	144.6	Sum of lost time (s)	9.9
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	765	1124	116	52	585	118	229	485	82	90	210	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.94	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	4975		1770	3203	1441
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	4975		1770	3203	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	832	1222	126	57	636	128	249	527	89	98	228	296
RTOR Reduction (vph)	0	0	56	0	0	86	0	20	0	0	64	140
Lane Group Flow (vph)	832	1222	70	57	636	42	249	596	0	98	297	23
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	3	8		7	4		6	6		2	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	30.0	45.4	45.4	5.1	20.5	20.5	18.7	18.7		14.7	14.7	14.7
Effective Green, g (s)	30.0	45.4	45.4	5.1	20.5	20.5	18.7	18.7		14.7	14.7	14.7
Actuated g/C Ratio	0.29	0.44	0.44	0.05	0.20	0.20	0.18	0.18		0.14	0.14	0.14
Clearance Time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Vehicle Extension (s)	1.0	2.0	2.0	0.5	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	990	1545	691	168	1002	312	617	895		250	453	204
v/s Ratio Prot	0.24	c0.35		0.02	c0.13		0.07	c0.12		0.06	c0.09	
v/s Ratio Perm			0.04			0.03						0.02
v/c Ratio	0.84	0.79	0.10	0.34	0.63	0.13	0.40	0.67		0.39	0.66	0.11
Uniform Delay, d1	34.8	25.2	17.3	47.8	38.3	34.4	37.7	39.7		40.6	42.3	39.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.3	2.7	0.0	0.4	1.0	0.1	0.2	1.5		0.4	2.6	0.1
Delay (s)	41.0	27.9	17.3	48.3	39.3	34.5	37.9	41.2		41.0	44.9	39.1
Level of Service	D	C	B	D	D	C	D	D		D	D	D
Approach Delay (s)		32.3			39.2			40.2			42.7	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	503	823	206	177	1070	104	278	527	59	134	746	685
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	5009		1770	3264	1441
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	5009		1770	3264	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	547	895	224	192	1163	113	302	573	64	146	811	745
RTOR Reduction (vph)	0	0	142	0	0	38	0	10	0	0	22	255
Lane Group Flow (vph)	547	895	82	192	1163	75	302	627	0	146	1057	222
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	3	8		7	4		6	6		2	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	20.4	37.5	37.5	12.4	29.5	29.5	22.1	22.1		39.5	39.5	39.5
Effective Green, g (s)	20.4	37.5	37.5	12.4	29.5	29.5	22.1	22.1		39.5	39.5	39.5
Actuated g/C Ratio	0.16	0.28	0.28	0.09	0.22	0.22	0.17	0.17		0.30	0.30	0.30
Clearance Time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Vehicle Extension (s)	1.0	2.0	2.0	0.5	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	532	1008	451	323	1140	355	577	841		531	980	433
v/s Ratio Prot	c0.16	0.25		0.06	c0.23		0.09	c0.13		0.08	c0.32	
v/s Ratio Perm			0.05			0.05						0.15
v/c Ratio	1.03	0.89	0.18	0.59	1.02	0.21	0.52	0.75		0.27	1.08	0.51
Uniform Delay, d1	55.6	45.0	35.5	57.2	51.0	41.6	49.9	52.1		35.1	46.0	38.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	46.4	9.4	0.1	2.0	31.8	0.1	0.4	3.2		0.1	52.5	0.4
Delay (s)	102.0	54.4	35.5	59.1	82.9	41.7	50.3	55.2		35.2	98.5	38.5
Level of Service	F	D	D	E	F	D	D	E		D	F	D
Approach Delay (s)		67.5			76.6			53.7			76.3	
Approach LOS		E			E			D			E	

Intersection Summary

HCM Average Control Delay	70.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	131.6	Sum of lost time (s)	20.1
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	284	1007	49	50	548	135	55	69	95	30	40	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.91		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3515		1770	4934		1770	1701		1770	1632	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3515		1770	4934		1770	1701		1770	1632	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	309	1095	53	54	596	147	60	75	103	33	43	204
RTOR Reduction (vph)	0	3	0	0	49	0	0	73	0	0	178	0
Lane Group Flow (vph)	309	1145	0	54	694	0	60	105	0	33	69	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.2	26.3		3.5	15.6		4.8	9.9		2.1	7.7	
Effective Green, g (s)	14.2	26.3		3.5	15.6		4.8	9.9		2.1	7.7	
Actuated g/C Ratio	0.24	0.44		0.06	0.26		0.08	0.16		0.03	0.13	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Vehicle Extension (s)	1.5	2.0		1.0	2.0		1.5	1.5		1.0	1.5	
Lane Grp Cap (vph)	418	1538		103	1281		141	280		62	209	
v/s Ratio Prot	c0.17	c0.33		0.03	0.14		0.03	c0.06		0.02	c0.04	
v/s Ratio Perm												
v/c Ratio	0.74	0.74		0.52	0.54		0.43	0.38		0.53	0.33	
Uniform Delay, d1	21.2	14.1		27.5	19.2		26.3	22.4		28.5	23.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.8	1.7		2.2	0.3		0.8	0.3		4.3	0.3	
Delay (s)	27.1	15.8		29.7	19.4		27.1	22.7		32.9	24.2	
Level of Service	C	B		C	B		C	C		C	C	
Approach Delay (s)		18.2			20.1			23.8			25.2	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	8.5
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	819	63	85	1255	10	61	12	57	3	25	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.88		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3502		1770	5079		1770	1632		1770	1660	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3502		1770	5079		1770	1632		1770	1660	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	890	68	92	1364	11	66	13	62	3	27	71
RTOR Reduction (vph)	0	6	0	0	1	0	0	53	0	0	65	0
Lane Group Flow (vph)	83	952	0	92	1374	0	66	22	0	3	33	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	4.9	23.0		4.9	23.0		5.2	8.4		0.9	4.6	
Effective Green, g (s)	4.9	23.0		4.9	23.0		5.2	8.4		0.9	4.6	
Actuated g/C Ratio	0.09	0.41		0.09	0.41		0.09	0.15		0.02	0.08	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Vehicle Extension (s)	1.5	2.0		1.0	2.0		1.5	1.5		1.0	1.5	
Lane Grp Cap (vph)	156	1451		156	2105		166	247		29	138	
v/s Ratio Prot	0.05	c0.27		c0.05	0.27		c0.04	c0.01		0.00	c0.02	
v/s Ratio Perm												
v/c Ratio	0.53	0.66		0.59	0.65		0.40	0.09		0.10	0.24	
Uniform Delay, d1	24.2	13.1		24.3	13.0		23.7	20.3		26.9	23.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.8		3.6	0.6		0.6	0.1		0.6	0.3	
Delay (s)	25.9	13.9		28.0	13.6		24.2	20.3		27.5	24.1	
Level of Service	C	B		C	B		C	C		C	C	
Approach Delay (s)		14.9			14.5			22.2			24.2	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	22.3
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1169	19	98	554	45	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		4.0	5.0	4.0	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	1.00		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	5073		1770	5085	1676	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	5073		1770	5085	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1271	21	107	602	49	78
RTOR Reduction (vph)	2	0	0	0	68	0
Lane Group Flow (vph)	1290	0	107	602	59	0
Turn Type			Prot			
Protected Phases	2		1	6	4	
Permitted Phases						
Actuated Green, G (s)	18.3		3.5	25.8	4.9	
Effective Green, g (s)	18.3		3.5	25.8	4.9	
Actuated g/C Ratio	0.46		0.09	0.65	0.12	
Clearance Time (s)	5.0		4.0	5.0	4.0	
Vehicle Extension (s)	4.0		1.0	4.0	1.5	
Lane Grp Cap (vph)	2338		156	3305	207	
v/s Ratio Prot	c0.25		c0.06	0.12	c0.03	
v/s Ratio Perm						
v/c Ratio	0.55		0.69	0.18	0.28	
Uniform Delay, d1	7.7		17.6	2.8	15.8	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.4		9.5	0.0	0.3	
Delay (s)	8.1		27.1	2.8	16.1	
Level of Service	A		C	A	B	
Approach Delay (s)	8.1			6.5	16.1	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	39.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	820	68	107	1258	35	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		4.0	5.0	4.0	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	0.99		1.00	1.00	0.90	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	5027		1770	5085	1661	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	5027		1770	5085	1661	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	891	74	116	1367	38	92
RTOR Reduction (vph)	11	0	0	0	81	0
Lane Group Flow (vph)	954	0	116	1367	49	0
Turn Type			Prot			
Protected Phases	2		1	6	4	
Permitted Phases						
Actuated Green, G (s)	18.3		4.8	27.1	4.7	
Effective Green, g (s)	18.3		4.8	27.1	4.7	
Actuated g/C Ratio	0.45		0.12	0.66	0.12	
Clearance Time (s)	5.0		4.0	5.0	4.0	
Vehicle Extension (s)	4.0		1.0	4.0	1.5	
Lane Grp Cap (vph)	2255		208	3378	191	
v/s Ratio Prot	0.19		c0.07	c0.27	c0.03	
v/s Ratio Perm						
v/c Ratio	0.42		0.56	0.40	0.25	
Uniform Delay, d1	7.7		17.0	3.1	16.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2		1.8	0.1	0.3	
Delay (s)	7.8		18.8	3.3	16.7	
Level of Service	A		B	A	B	
Approach Delay (s)	7.8			4.5	16.7	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	1001	60	155	528	61	90	468	136	83	220	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5042		1770	5007		1770	3420		1770	3366	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5042		1770	5007		1770	3420		1770	3366	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	1088	65	168	574	66	98	509	148	90	239	116
RTOR Reduction (vph)	0	7	0	0	15	0	0	33	0	0	76	0
Lane Group Flow (vph)	118	1146	0	168	625	0	98	624	0	90	279	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	11.5	21.8		10.2	20.5		11.3	20.2		6.5	15.4	
Effective Green, g (s)	11.5	21.8		10.2	20.5		11.3	20.2		6.5	15.4	
Actuated g/C Ratio	0.15	0.28		0.13	0.27		0.15	0.26		0.08	0.20	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	266	1437		236	1342		261	903		150	678	
v/s Ratio Prot	0.07	c0.23		c0.09	0.12		0.06	c0.18		c0.05	0.08	
v/s Ratio Perm												
v/c Ratio	0.44	0.80		0.71	0.47		0.38	0.69		0.60	0.41	
Uniform Delay, d1	29.6	25.3		31.7	23.4		29.4	25.3		33.7	26.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	3.0		8.2	0.1		0.3	1.9		4.3	0.1	
Delay (s)	30.0	28.3		39.9	23.5		29.7	27.2		38.0	26.8	
Level of Service	C	C		D	C		C	C		D	C	
Approach Delay (s)		28.4			26.9			27.5			29.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	17.8
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	932	81	279	1047	69	77	491	353	119	709	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5024		1770	5038		1770	3317		1770	3467	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5024		1770	5038		1770	3317		1770	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	1013	88	303	1138	75	84	534	384	129	771	122
RTOR Reduction (vph)	0	11	0	0	8	0	0	149	0	0	14	0
Lane Group Flow (vph)	167	1090	0	303	1205	0	84	769	0	129	879	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	10.2	18.3		14.1	22.2		9.3	28.2		8.7	27.6	
Effective Green, g (s)	10.2	18.3		14.1	22.2		9.3	28.2		8.7	27.6	
Actuated g/C Ratio	0.12	0.21		0.16	0.25		0.11	0.32		0.10	0.32	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	207	1056		287	1284		189	1074		177	1099	
v/s Ratio Prot	0.09	c0.22		c0.17	0.24		0.05	c0.23		0.07	c0.25	
v/s Ratio Perm												
v/c Ratio	0.81	1.03		1.06	0.94		0.44	0.72		0.73	0.80	
Uniform Delay, d1	37.5	34.4		36.5	31.8		36.5	25.9		38.1	27.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.1	36.3		68.6	12.8		0.6	1.9		11.9	4.0	
Delay (s)	56.5	70.7		105.1	44.5		37.1	27.8		50.0	31.2	
Level of Service	E	E		F	D		D	C		D	C	
Approach Delay (s)		68.8			56.6			28.6			33.6	
Approach LOS		E			E			C			C	

Intersection Summary

HCM Average Control Delay	49.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	13.8
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	354	773	45	63	425	60	102	492	149	77	305	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95		0.97	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3510		3433	4991		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3510		3433	4991		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	385	840	49	68	462	65	111	535	162	84	332	138
RTOR Reduction (vph)	0	4	0	0	24	0	0	0	124	0	0	113
Lane Group Flow (vph)	385	885	0	68	503	0	111	535	38	84	332	25
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases									4			8
Actuated Green, G (s)	15.4	24.3		2.9	11.8		8.8	15.5	15.5	5.1	11.8	11.8
Effective Green, g (s)	15.4	24.3		2.9	11.8		8.8	15.5	15.5	5.1	11.8	11.8
Actuated g/C Ratio	0.24	0.37		0.04	0.18		0.13	0.24	0.24	0.08	0.18	0.18
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	810	1306		152	902		239	840	376	138	640	286
v/s Ratio Prot	0.11	c0.25		0.02	c0.10		c0.06	c0.15		0.05	0.09	
v/s Ratio Perm									0.02			0.02
v/c Ratio	0.48	0.68		0.45	0.56		0.46	0.64	0.10	0.61	0.52	0.09
Uniform Delay, d1	21.5	17.2		30.4	24.4		26.1	22.4	19.5	29.1	24.2	22.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.1		0.8	0.4		0.5	1.2	0.0	5.1	0.3	0.0
Delay (s)	21.6	18.3		31.2	24.8		26.6	23.5	19.5	34.3	24.5	22.3
Level of Service	C	B		C	C		C	C	B	C	C	C
Approach Delay (s)		19.3			25.5			23.2			25.4	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	18.1
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	283	804	97	211	1031	92	104	449	136	101	688	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95		0.97	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3482		3433	5023		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3482		3433	5023		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	308	874	105	229	1121	100	113	488	148	110	748	286
RTOR Reduction (vph)	0	11	0	0	12	0	0	0	115	0	0	206
Lane Group Flow (vph)	308	968	0	229	1209	0	113	488	33	110	748	80
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases									4			8
Actuated Green, G (s)	9.1	25.2		7.5	23.6		5.8	17.4	17.4	10.3	21.9	21.9
Effective Green, g (s)	9.1	25.2		7.5	23.6		5.8	17.4	17.4	10.3	21.9	21.9
Actuated g/C Ratio	0.12	0.32		0.10	0.30		0.07	0.22	0.22	0.13	0.28	0.28
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	401	1126		331	1522		132	790	354	234	995	445
v/s Ratio Prot	0.09	c0.28		0.07	c0.24		c0.06	0.14		c0.06	c0.21	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.77	0.86		0.69	0.79		0.86	0.62	0.09	0.47	0.75	0.18
Uniform Delay, d1	33.4	24.7		34.1	24.9		35.6	27.3	24.0	31.3	25.5	21.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	6.5		5.0	2.8		37.5	1.0	0.0	0.5	2.9	0.1
Delay (s)	41.1	31.2		39.1	27.7		73.1	28.3	24.0	31.8	28.4	21.3
Level of Service	D	C		D	C		E	C	C	C	C	C
Approach Delay (s)		33.6			29.5			34.2			27.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	22.1
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	807	5	17	532	17	4	3	1	6	6	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	0.95
Frt	1.00	1.00		1.00	1.00		1.00	0.96		1.00	0.93	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5081		1770	5062		1770	1793		1770	1647	1504
Flt Permitted	0.95	1.00		0.95	1.00		1.00	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	5081		1770	5062		1863	1793		1863	1647	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	877	5	18	578	18	4	3	1	7	7	18
RTOR Reduction (vph)	0	1	0	0	3	0	0	1	0	0	6	12
Lane Group Flow (vph)	38	881	0	18	593	0	4	3	0	7	7	0
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	0.6	12.5		0.5	12.4		0.5	0.5		0.5	0.5	0.5
Effective Green, g (s)	0.6	12.5		0.5	12.4		0.5	0.5		0.5	0.5	0.5
Actuated g/C Ratio	0.02	0.47		0.02	0.47		0.02	0.02		0.02	0.02	0.02
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5		1.5	1.5	1.5
Lane Grp Cap (vph)	40	2406		34	2378		35	34		35	31	28
v/s Ratio Prot	c0.02	c0.17		0.01	0.12			0.00			c0.00	
v/s Ratio Perm							0.00			0.00		0.00
v/c Ratio	0.95	0.37		0.53	0.25		0.11	0.09		0.20	0.23	0.01
Uniform Delay, d1	12.9	4.4		12.8	4.2		12.7	12.7		12.8	12.8	12.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	120.2	0.0		6.7	0.0		0.5	0.4		1.0	1.4	0.0
Delay (s)	133.1	4.5		19.5	4.2		13.3	13.1		13.8	14.1	12.7
Level of Service	F	A		B	A		B	B		B	B	B
Approach Delay (s)		9.8			4.7			13.2			13.5	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	26.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	979	10	12	997	16	1	34	14	15	24	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	0.95
Frt	1.00	1.00		1.00	1.00		1.00	0.96		1.00	0.98	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5077		1770	5074		1770	1782		1770	1742	1504
Flt Permitted	0.95	1.00		0.95	1.00		1.00	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	5077		1770	5074		1863	1782		1863	1742	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1064	11	13	1084	17	1	37	15	16	26	25
RTOR Reduction (vph)	0	1	0	0	2	0	0	14	0	0	3	20
Lane Group Flow (vph)	55	1074	0	13	1099	0	1	38	0	16	26	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	1.6	17.4		0.6	16.4		2.6	2.6		2.6	2.6	2.6
Effective Green, g (s)	1.6	17.4		0.6	16.4		2.6	2.6		2.6	2.6	2.6
Actuated g/C Ratio	0.05	0.52		0.02	0.49		0.08	0.08		0.08	0.08	0.08
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5		1.5	1.5	1.5
Lane Grp Cap (vph)	85	2637		32	2484		145	138		145	135	117
v/s Ratio Prot	c0.03	0.21		0.01	c0.22			c0.02			0.02	
v/s Ratio Perm							0.00			0.01		0.00
v/c Ratio	0.65	0.41		0.41	0.44		0.01	0.28		0.11	0.19	0.01
Uniform Delay, d1	15.7	4.9		16.3	5.6		14.3	14.6		14.4	14.5	14.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.0	0.0		3.0	0.0		0.0	0.4		0.1	0.3	0.0
Delay (s)	27.7	4.9		19.3	5.6		14.3	15.0		14.5	14.7	14.3
Level of Service	C	A		B	A		B	B		B	B	B
Approach Delay (s)		6.0			5.8			14.9			14.5	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	33.5	Sum of lost time (s)	12.9
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	608	25	129	493	134	31	334	153	36	116	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5055		1770	4922		1770	1775		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5055		1770	4922		1770	1775		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	661	27	140	536	146	34	363	166	39	126	60
RTOR Reduction (vph)	0	5	0	0	59	0	0	19	0	0	0	38
Lane Group Flow (vph)	191	683	0	140	623	0	34	510	0	39	126	22
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	6.9	15.0		8.1	16.2		2.1	23.8		3.2	24.9	24.9
Effective Green, g (s)	6.9	15.0		8.1	16.2		2.1	23.8		3.2	24.9	24.9
Actuated g/C Ratio	0.10	0.22		0.12	0.24		0.03	0.35		0.05	0.37	0.37
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	350	1120		212	1178		55	624		84	685	582
v/s Ratio Prot	0.06	c0.14		c0.08	0.13		0.02	c0.29		c0.02	0.07	
v/s Ratio Perm												0.01
v/c Ratio	0.55	0.61		0.66	0.53		0.62	0.82		0.46	0.18	0.04
Uniform Delay, d1	28.9	23.7		28.5	22.4		32.4	20.0		31.4	14.5	13.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.6		5.9	0.2		13.6	7.7		1.5	0.0	0.0
Delay (s)	29.8	24.4		34.3	22.6		46.1	27.7		32.9	14.6	13.7
Level of Service	C	C		C	C		D	C		C	B	B
Approach Delay (s)		25.6			24.6			28.8			17.5	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	17.6
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	920	35	252	814	84	27	203	264	145	435	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5057		1770	5014		1770	1705		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5057		1770	5014		1770	1705		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	258	1000	38	274	885	91	29	221	287	158	473	212
RTOR Reduction (vph)	0	5	0	0	14	0	0	56	0	0	0	129
Lane Group Flow (vph)	258	1033	0	274	962	0	29	452	0	158	473	83
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	8.2	18.7		11.1	21.6		2.4	26.4		8.1	32.1	32.1
Effective Green, g (s)	8.2	18.7		11.1	21.6		2.4	26.4		8.1	32.1	32.1
Actuated g/C Ratio	0.10	0.23		0.14	0.26		0.03	0.32		0.10	0.39	0.39
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	344	1155		240	1322		52	550		175	730	620
v/s Ratio Prot	0.08	c0.20		c0.15	c0.19		0.02	c0.26		c0.09	0.25	
v/s Ratio Perm												0.05
v/c Ratio	0.75	0.89		1.14	0.73		0.56	0.82		0.90	0.65	0.13
Uniform Delay, d1	35.9	30.6		35.4	27.5		39.2	25.6		36.5	20.3	16.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.9	8.9		101.7	1.7		7.2	9.1		40.6	1.5	0.0
Delay (s)	43.8	39.6		137.1	29.2		46.4	34.7		77.1	21.8	16.0
Level of Service	D	D		F	C		D	C		E	C	B
Approach Delay (s)		40.4			52.8			35.3			30.7	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	22.6
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	284	113	295	344	181	199	1747	178	180	1361	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Lane Util. Factor	0.97	0.91		0.97	0.91		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4868		3433	4822		1770	5015		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4868		3433	4822		1770	5015		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	309	123	321	374	197	216	1899	193	196	1479	264
RTOR Reduction (vph)	0	82	0	0	109	0	0	13	0	0	0	131
Lane Group Flow (vph)	212	350	0	321	462	0	216	2079	0	196	1479	133
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.8	14.9		8.8	16.9		13.1	37.2		9.4	33.5	33.5
Effective Green, g (s)	6.8	14.9		8.8	16.9		13.1	37.2		9.4	33.5	33.5
Actuated g/C Ratio	0.08	0.17		0.10	0.19		0.15	0.42		0.11	0.38	0.38
Clearance Time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Vehicle Extension (s)	2.0	5.2		2.0	5.2		2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	265	824		343	926		263	2120		189	1936	603
v/s Ratio Prot	0.06	0.07		c0.09	c0.10		0.12	c0.41		c0.11	0.29	
v/s Ratio Perm												0.08
v/c Ratio	0.80	0.42		0.94	0.50		0.82	0.98		1.04	0.76	0.22
Uniform Delay, d1	39.9	32.7		39.3	31.8		36.3	25.0		39.3	23.8	18.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.9	0.8		31.8	0.9		17.5	15.3		75.5	2.2	0.4
Delay (s)	54.8	33.5		71.1	32.7		53.8	40.3		114.8	26.0	18.8
Level of Service	D	C		E	C		D	D		F	C	B
Approach Delay (s)		40.5			46.5			41.6			34.0	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	374	649	329	479	421	165	161	1654	257	290	1870	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Lane Util. Factor	0.97	0.91		0.97	0.91		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4828		3433	4871		1770	4983		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4828		3433	4871		1770	4983		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	705	358	521	458	179	175	1798	279	315	2033	332
RTOR Reduction (vph)	0	76	0	0	59	0	0	17	0	0	0	94
Lane Group Flow (vph)	407	987	0	521	578	0	175	2060	0	315	2033	238
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	16.3	21.6		14.8	20.1		12.3	47.6		18.3	53.6	53.6
Effective Green, g (s)	16.3	21.6		14.8	20.1		12.3	47.6		18.3	53.6	53.6
Actuated g/C Ratio	0.14	0.18		0.12	0.17		0.10	0.40		0.15	0.45	0.45
Clearance Time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Vehicle Extension (s)	2.0	5.2		2.0	5.2		2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	466	869		423	816		181	1977		270	2271	707
v/s Ratio Prot	0.12	c0.20		c0.15	0.12		0.10	c0.41		c0.18	0.40	
v/s Ratio Perm												0.15
v/c Ratio	0.87	1.14		1.23	0.71		0.97	1.04		1.17	0.90	0.34
Uniform Delay, d1	50.8	49.2		52.6	47.2		53.6	36.2		50.9	30.6	21.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.9	75.1		123.4	3.7		56.3	32.1		107.5	5.4	0.6
Delay (s)	66.8	124.3		176.0	50.8		110.0	68.3		158.4	36.0	22.3
Level of Service	E	F		F	D		F	E		F	D	C
Approach Delay (s)		108.4			107.1			71.5			48.7	
Approach LOS		F			F			E			D	

Intersection Summary

HCM Average Control Delay	76.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	338	39	86	601	16	105	38	61	24	21	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	5007		1770	5066			1797	1583		1815	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	5007		1770	5066			1797	1583		1815	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	367	42	93	653	17	114	41	66	26	23	38
RTOR Reduction (vph)	0	16	0	0	3	0	0	0	56	0	0	36
Lane Group Flow (vph)	42	393	0	93	667	0	0	155	10	0	49	2
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases									4			3
Actuated Green, G (s)	1.8	14.4		3.3	16.5			6.9	6.9		2.8	2.8
Effective Green, g (s)	1.8	14.4		3.3	16.5			6.9	6.9		2.8	2.8
Actuated g/C Ratio	0.04	0.31		0.07	0.36			0.15	0.15		0.06	0.06
Clearance Time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0			1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	69	1564		127	1813			269	237		110	96
v/s Ratio Prot	0.02	0.08		c0.05	c0.13			c0.09			c0.03	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.61	0.25		0.73	0.37			0.58	0.04		0.45	0.02
Uniform Delay, d1	21.8	11.8		21.0	10.9			18.2	16.8		20.9	20.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	10.0	0.0		17.0	0.0			1.9	0.0		1.0	0.0
Delay (s)	31.8	11.9		38.0	11.0			20.1	16.8		21.9	20.4
Level of Service	C	B		D	B			C	B		C	C
Approach Delay (s)		13.7			14.3			19.1			21.3	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	13.8
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	806	91	129	493	6	69	13	102	6	6	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	5008		1770	5075			1787	1583		1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	5008		1770	5075			1787	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	876	99	140	536	7	75	14	111	7	7	26
RTOR Reduction (vph)	0	14	0	0	1	0	0	0	100	0	0	25
Lane Group Flow (vph)	35	961	0	140	542	0	0	89	11	0	14	1
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases									4			3
Actuated Green, G (s)	1.7	19.2		5.6	23.7			5.2	5.2		1.5	1.5
Effective Green, g (s)	1.7	19.2		5.6	23.7			5.2	5.2		1.5	1.5
Actuated g/C Ratio	0.03	0.38		0.11	0.47			0.10	0.10		0.03	0.03
Clearance Time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0			1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	60	1915		197	2396			185	164		54	47
v/s Ratio Prot	0.02	c0.19		c0.08	c0.11			c0.05			c0.01	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.58	0.50		0.71	0.23			0.48	0.07		0.26	0.02
Uniform Delay, d1	23.9	11.8		21.5	7.8			21.2	20.3		23.8	23.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	9.0	0.1		9.6	0.0			0.7	0.1		0.9	0.1
Delay (s)	32.9	11.9		31.1	7.8			21.9	20.4		24.7	23.7
Level of Service	C	B		C	A			C	C		C	C
Approach Delay (s)		12.6			12.6			21.1			24.1	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	23.6
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	289	71	12	541	0	67	26	2	3	41	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			1.00	1.00
Satd. Flow (prot)	1770	4935		1770	5085			1794			1857	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97			1.00	1.00
Satd. Flow (perm)	1770	4935		1770	5085			1794			1857	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	314	77	13	588	0	73	28	2	3	45	62
RTOR Reduction (vph)	0	41	0	0	0	0	0	1	0	0	0	57
Lane Group Flow (vph)	22	350	0	13	588	0	0	102	0	0	48	5
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	0.7	13.7		0.7	13.7			3.3			2.9	2.9
Effective Green, g (s)	0.7	13.7		0.7	13.7			3.3			2.9	2.9
Actuated g/C Ratio	0.02	0.36		0.02	0.36			0.09			0.08	0.08
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Vehicle Extension (s)	1.5	2.0		1.0	2.0			1.0			1.5	1.5
Lane Grp Cap (vph)	33	1798		33	1853			157			143	122
v/s Ratio Prot	c0.01	0.07		0.01	c0.12			c0.06			c0.03	
v/s Ratio Perm												0.00
v/c Ratio	0.67	0.19		0.39	0.32			0.65			0.34	0.04
Uniform Delay, d1	18.3	8.2		18.2	8.6			16.6			16.4	16.1
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	32.9	0.0		2.8	0.0			7.1			0.5	0.0
Delay (s)	51.3	8.2		21.0	8.6			23.7			16.9	16.1
Level of Service	D	A		C	A			C			B	B
Approach Delay (s)		10.5			8.9			23.7			16.5	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	37.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	697	140	25	423	9	95	29	30	6	28	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	1.00
Frt	1.00	0.97		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (prot)	1770	4958		1770	5069			1759			1845	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (perm)	1770	4958		1770	5069			1759			1845	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	758	152	27	460	10	103	32	33	7	30	64
RTOR Reduction (vph)	0	30	0	0	2	0	0	10	0	0	0	60
Lane Group Flow (vph)	65	880	0	27	468	0	0	158	0	0	37	4
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	3.4	16.1		0.9	13.6			8.2			3.0	3.0
Effective Green, g (s)	3.4	16.1		0.9	13.6			8.2			3.0	3.0
Actuated g/C Ratio	0.08	0.36		0.02	0.30			0.18			0.07	0.07
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Vehicle Extension (s)	1.5	2.0		1.0	2.0			1.0			1.5	1.5
Lane Grp Cap (vph)	133	1766		35	1525			319			122	105
v/s Ratio Prot	c0.04	c0.18		0.02	0.09			c0.09			c0.02	
v/s Ratio Perm												0.00
v/c Ratio	0.49	0.50		0.77	0.31			0.50			0.30	0.04
Uniform Delay, d1	20.1	11.4		22.0	12.2			16.6			20.1	19.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.0	0.1		62.6	0.0			0.4			0.5	0.1
Delay (s)	21.1	11.5		84.6	12.2			17.1			20.6	19.8
Level of Service	C	B		F	B			B			C	B
Approach Delay (s)		12.1			16.1			17.1			20.1	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	263	61	60	404	43	67	246	78	38	183	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4942		1770	5012		1770	1863	1583	1770	1804	
Flt Permitted	0.95	1.00		0.95	1.00		0.60	1.00	1.00	0.59	1.00	
Satd. Flow (perm)	1770	4942		1770	5012		1123	1863	1583	1099	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	286	66	65	439	47	73	267	85	41	199	53
RTOR Reduction (vph)	0	46	0	0	17	0	0	0	61	0	17	0
Lane Group Flow (vph)	38	306	0	65	469	0	73	267	24	41	235	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	0.9	11.3		2.0	12.4		10.3	10.3	10.3	10.3	10.3	
Effective Green, g (s)	0.9	11.3		2.0	12.4		10.3	10.3	10.3	10.3	10.3	
Actuated g/C Ratio	0.02	0.30		0.05	0.33		0.28	0.28	0.28	0.28	0.28	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	43	1501		95	1671		311	516	438	304	499	
v/s Ratio Prot	0.02	0.06		c0.04	c0.09			c0.14			0.13	
v/s Ratio Perm							0.07		0.01	0.04		
v/c Ratio	0.88	0.20		0.68	0.28		0.23	0.52	0.05	0.13	0.47	
Uniform Delay, d1	18.1	9.6		17.3	9.1		10.4	11.4	9.9	10.1	11.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	91.0	0.0		15.0	0.0		0.1	0.4	0.0	0.1	0.3	
Delay (s)	109.1	9.6		32.3	9.2		10.5	11.7	9.9	10.2	11.4	
Level of Service	F	A		C	A		B	B	A	B	B	
Approach Delay (s)		19.3			11.9			11.2			11.3	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	37.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	577	57	56	425	54	70	333	99	47	300	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5017		1770	4999		1770	1863	1583	1770	1822	
Flt Permitted	0.95	1.00		0.95	1.00		0.41	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	1770	5017		1770	4999		754	1863	1583	805	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	627	62	61	462	59	76	362	108	51	326	55
RTOR Reduction (vph)	0	16	0	0	23	0	0	0	74	0	10	0
Lane Group Flow (vph)	64	673	0	61	498	0	76	362	34	51	371	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	3.1	12.7		3.1	12.7		13.5	13.5	13.5	13.5	13.5	
Effective Green, g (s)	3.1	12.7		3.1	12.7		13.5	13.5	13.5	13.5	13.5	
Actuated g/C Ratio	0.07	0.30		0.07	0.30		0.31	0.31	0.31	0.31	0.31	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	128	1485		128	1480		237	586	498	253	573	
v/s Ratio Prot	c0.04	c0.13		0.03	0.10			0.19			c0.20	
v/s Ratio Perm							0.10		0.02	0.06		
v/c Ratio	0.50	0.45		0.48	0.34		0.32	0.62	0.07	0.20	0.65	
Uniform Delay, d1	19.2	12.3		19.1	11.8		11.2	12.5	10.3	10.8	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1		1.0	0.0		0.3	1.4	0.0	0.1	1.9	
Delay (s)	20.3	12.4		20.1	11.9		11.5	13.9	10.3	10.9	14.5	
Level of Service	C	B		C	B		B	B	B	B	B	
Approach Delay (s)		13.0			12.7			12.8			14.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	42.9	Sum of lost time (s)	13.6
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	179	68	57	57	125	151	97	705	29	96	645	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	16	12	12
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.93		1.00	0.92		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3297		3433	3249		3433	3518		3891	3379	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3297		3433	3249		3433	3518		3891	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	74	62	62	136	164	105	766	32	104	701	304
RTOR Reduction (vph)	0	48	0	0	135	0	0	3	0	0	51	0
Lane Group Flow (vph)	195	88	0	62	165	0	105	795	0	104	954	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.5	16.3		3.6	12.4		5.2	24.8		5.0	24.6	
Effective Green, g (s)	7.5	16.3		3.6	12.4		5.2	24.8		5.0	24.6	
Actuated g/C Ratio	0.11	0.23		0.05	0.18		0.07	0.35		0.07	0.35	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	368	768		177	576		255	1246		278	1187	
v/s Ratio Prot	c0.06	c0.03		0.02	c0.05		c0.03	0.23		0.03	c0.28	
v/s Ratio Perm												
v/c Ratio	0.53	0.12		0.35	0.29		0.41	0.64		0.37	0.80	
Uniform Delay, d1	29.6	21.2		32.1	25.0		30.9	18.9		31.0	20.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.0		0.4	0.1		0.4	0.8		0.3	3.8	
Delay (s)	30.2	21.2		32.5	25.1		31.3	19.6		31.3	24.3	
Level of Service	C	C		C	C		C	B		C	C	
Approach Delay (s)		26.5			26.3			21.0			25.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	26.3
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	209	134	67	79	132	132	868	57	219	803	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	16	12	12
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.94		1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3331		3433	3208		3433	3506		3891	3380	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3331		3433	3208		3433	3506		3891	3380	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	227	146	73	86	143	143	943	62	238	873	373
RTOR Reduction (vph)	0	117	0	0	124	0	0	4	0	0	43	0
Lane Group Flow (vph)	391	256	0	73	105	0	143	1001	0	238	1203	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.0	16.7		5.3	11.0		7.3	34.2		7.8	34.7	
Effective Green, g (s)	11.0	16.7		5.3	11.0		7.3	34.2		7.8	34.7	
Actuated g/C Ratio	0.13	0.20		0.06	0.13		0.09	0.41		0.09	0.41	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	448	660		216	419		297	1422		360	1391	
v/s Ratio Prot	c0.11	c0.08		0.02	0.03		0.04	0.29		c0.06	c0.36	
v/s Ratio Perm												
v/c Ratio	0.87	0.39		0.34	0.25		0.48	0.70		0.66	0.86	
Uniform Delay, d1	36.0	29.4		37.8	32.9		36.7	20.8		37.0	22.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.4	0.1		0.3	0.1		0.4	1.3		3.5	5.7	
Delay (s)	52.4	29.5		38.2	33.1		37.1	22.1		40.5	28.3	
Level of Service	D	C		D	C		D	C		D	C	
Approach Delay (s)		41.2			34.3			24.0			30.3	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	2	1	2	525	185	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1	2	571	201	22
RTOR Reduction (vph)	0	1	0	0	0	12
Lane Group Flow (vph)	2	0	2	571	201	10
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	0.5	0.5	0.5	15.4	10.9	10.9
Effective Green, g (s)	0.5	0.5	0.5	15.4	10.9	10.9
Actuated g/C Ratio	0.02	0.02	0.02	0.63	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	1.0	1.0	1.0	2.0	2.0	2.0
Lane Grp Cap (vph)	36	32	36	2225	1574	704
v/s Ratio Prot	c0.00		0.00	c0.16	0.06	
v/s Ratio Perm		0.00				0.01
v/c Ratio	0.06	0.00	0.06	0.26	0.13	0.01
Uniform Delay, d1	11.8	11.8	11.8	2.0	4.0	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.2	0.0	0.0	0.0
Delay (s)	12.0	11.8	12.0	2.0	4.0	3.8
Level of Service	B	B	B	A	A	A
Approach Delay (s)	11.9			2.1	4.0	
Approach LOS	B			A	A	

Intersection Summary

HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	24.5	Sum of lost time (s)	8.6
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	33	9	18	455	637	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	10	20	495	692	26
RTOR Reduction (vph)	0	10	0	0	0	10
Lane Group Flow (vph)	36	0	20	495	692	16
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	0.6	0.6	0.5	17.2	12.7	12.7
Effective Green, g (s)	0.6	0.6	0.5	17.2	12.7	12.7
Actuated g/C Ratio	0.02	0.02	0.02	0.65	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	1.0	1.0	1.0	2.0	2.0	2.0
Lane Grp Cap (vph)	40	36	34	2306	1702	762
v/s Ratio Prot	c0.02		0.01	c0.14	c0.20	
v/s Ratio Perm		0.00				0.01
v/c Ratio	0.90	0.01	0.59	0.21	0.41	0.02
Uniform Delay, d1	12.9	12.6	12.8	1.9	4.4	3.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	101.8	0.0	15.6	0.0	0.1	0.0
Delay (s)	114.7	12.6	28.5	1.9	4.5	3.6
Level of Service	F	B	C	A	A	A
Approach Delay (s)	92.5			2.9	4.4	
Approach LOS	F			A	A	

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	26.4	Sum of lost time (s)	13.2
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	0	12	141	0	53	96	1883	104	284	1628	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1794		1681	1905	1583	1770	5045		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1794		1681	1905	1583	1770	5045		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	0	13	153	0	58	104	2047	113	309	1770	153
RTOR Reduction (vph)	0	12	0	0	0	52	0	4	0	0	0	25
Lane Group Flow (vph)	63	1	0	76	77	6	104	2156	0	309	1770	128
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	10.0	10.0		13.3	13.3	13.3	11.2	56.5		22.5	67.8	67.8
Effective Green, g (s)	10.0	10.0		13.3	13.3	13.3	11.2	56.5		22.5	67.8	67.8
Actuated g/C Ratio	0.08	0.08		0.11	0.11	0.11	0.09	0.48		0.19	0.57	0.57
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	149	151		188	213	177	167	2399		335	2902	903
v/s Ratio Prot	c0.04	0.00		c0.05	0.04		0.06	c0.43		c0.17	0.35	
v/s Ratio Perm						0.00						0.08
v/c Ratio	0.42	0.01		0.40	0.36	0.04	0.62	0.90		0.92	0.61	0.14
Uniform Delay, d1	51.7	49.9		49.1	48.8	47.0	51.8	28.5		47.3	16.8	11.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.7	0.0		3.5	2.6	0.2	5.1	5.3		29.6	0.6	0.2
Delay (s)	56.4	49.9		52.5	51.4	47.2	56.9	33.9		76.9	17.4	12.1
Level of Service	E	D		D	D	D	E	C		E	B	B
Approach Delay (s)		55.2			50.7			34.9			25.2	
Approach LOS		E			D			C			C	

Intersection Summary

HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	118.8	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	7	53	225	11	241	89	2072	10	93	2293	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1833		1681	1918	1583	1770	5082		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1833		1681	1918	1583	1770	5082		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	8	58	245	12	262	97	2252	11	101	2492	115
RTOR Reduction (vph)	0	49	0	0	0	129	0	0	0	0	0	17
Lane Group Flow (vph)	190	17	0	127	130	133	97	2263	0	101	2492	98
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	17.7	17.7		17.5	17.5	17.5	8.1	60.4		8.3	60.6	60.6
Effective Green, g (s)	17.7	17.7		17.5	17.5	17.5	8.1	60.4		8.3	60.6	60.6
Actuated g/C Ratio	0.15	0.15		0.15	0.15	0.15	0.07	0.50		0.07	0.50	0.50
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	260	269		244	279	230	119	2549		122	2559	797
v/s Ratio Prot	c0.11	0.01		0.08	0.07		0.05	0.45		c0.06	c0.49	
v/s Ratio Perm						c0.08						0.06
v/c Ratio	0.73	0.06		0.52	0.47	0.58	0.82	0.89		0.83	0.97	0.12
Uniform Delay, d1	49.1	44.2		47.6	47.2	48.0	55.4	27.0		55.3	29.1	15.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.9	0.2		4.4	3.0	6.2	31.8	4.5		33.5	12.4	0.2
Delay (s)	61.9	44.4		51.9	50.2	54.2	87.2	31.5		88.8	41.5	16.0
Level of Service	E	D		D	D	D	F	C		F	D	B
Approach Delay (s)		57.4			52.6			33.8			42.2	
Approach LOS		E			D			C			D	

Intersection Summary

HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.4	Sum of lost time (s)	11.6
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1343	1042	135	133	534	58	401	624	420	107	263	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1460	1133	147	145	580	63	436	678	457	116	286	450
RTOR Reduction (vph)	0	0	54	0	0	52	0	0	142	0	0	385
Lane Group Flow (vph)	1460	1133	93	145	580	11	436	678	315	116	286	65
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	62.1	58.2	58.2	29.2	25.3	25.3	19.0	32.9	32.9	7.3	21.2	21.2
Effective Green, g (s)	62.1	58.2	58.2	29.2	25.3	25.3	19.0	32.9	32.9	7.3	21.2	21.2
Actuated g/C Ratio	0.43	0.40	0.40	0.20	0.17	0.17	0.13	0.23	0.23	0.05	0.15	0.15
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0
Lane Grp Cap (vph)	1462	1413	632	688	614	275	447	799	357	172	515	230
v/s Ratio Prot	c0.43	0.32		0.04	c0.16		c0.13	0.19		c0.03	0.08	
v/s Ratio Perm			0.06			0.01			c0.20			0.04
v/c Ratio	1.00	0.80	0.15	0.21	0.94	0.04	0.98	0.85	0.88	0.67	0.56	0.28
Uniform Delay, d1	41.8	38.7	28.0	48.7	59.6	50.1	63.2	54.1	54.6	68.1	57.9	55.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.0	3.2	0.0	0.1	23.1	0.0	35.7	8.0	21.0	7.9	0.7	0.2
Delay (s)	64.8	41.9	28.0	48.7	82.7	50.2	98.9	62.1	75.6	76.0	58.7	55.8
Level of Service	E	D	C	D	F	D	F	E	E	E	E	E
Approach Delay (s)		53.4			73.8			76.2			59.5	
Approach LOS		D			E			E			E	

Intersection Summary

HCM Average Control Delay	63.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	145.8	Sum of lost time (s)	16.9
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1001	1367	335	447	1221	88	283	603	299	113	822	949
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1088	1486	364	486	1327	96	308	655	325	123	893	1032
RTOR Reduction (vph)	0	0	83	0	0	39	0	0	162	0	0	227
Lane Group Flow (vph)	1088	1486	281	486	1327	57	308	655	163	123	893	805
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	29.0	60.1	60.1	14.0	45.1	45.1	11.0	34.7	34.7	23.0	46.7	46.7
Effective Green, g (s)	29.0	60.1	60.1	14.0	45.1	45.1	11.0	34.7	34.7	23.0	46.7	46.7
Actuated g/C Ratio	0.19	0.40	0.40	0.09	0.30	0.30	0.07	0.23	0.23	0.15	0.31	0.31
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0
Lane Grp Cap (vph)	664	1418	634	320	1064	476	252	819	366	526	1102	493
v/s Ratio Prot	c0.32	0.42		0.14	c0.37		c0.09	0.19		0.04	0.25	
v/s Ratio Perm			0.18			0.04			0.10			c0.51
v/c Ratio	1.64	1.05	0.44	1.52	1.25	0.12	1.22	0.80	0.44	0.23	0.81	1.63
Uniform Delay, d1	60.5	45.0	32.8	68.0	52.5	38.0	69.5	54.4	49.4	55.8	47.6	51.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	294.1	37.5	0.2	248.9	119.2	0.0	130.2	5.1	0.3	0.1	4.4	293.7
Delay (s)	354.6	82.5	32.9	316.9	171.6	38.1	199.7	59.5	49.7	55.8	51.9	345.3
Level of Service	F	F	C	F	F	D	F	E	D	E	D	F
Approach Delay (s)		177.1			201.9			90.6			200.0	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	175.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	112.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1225	7	13	782	47	16	34	1	83	77	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3536		1770	3509		1770	1855		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3536		1770	3509		1770	1855		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	1332	8	14	850	51	17	37	1	90	84	71
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	62
Lane Group Flow (vph)	103	1340	0	14	897	0	17	37	0	90	84	9
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	5.2	32.1		0.8	27.7		0.8	4.2		4.0	7.4	7.4
Effective Green, g (s)	5.2	32.1		0.8	27.7		0.8	4.2		4.0	7.4	7.4
Actuated g/C Ratio	0.09	0.56		0.01	0.48		0.01	0.07		0.07	0.13	0.13
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	161	1981		25	1696		25	136		124	241	204
v/s Ratio Prot	c0.06	c0.38		0.01	0.26		0.01	0.02		c0.05	c0.05	
v/s Ratio Perm												0.01
v/c Ratio	0.64	0.68		0.56	0.53		0.68	0.27		0.73	0.35	0.04
Uniform Delay, d1	25.1	8.9		28.1	10.3		28.1	25.1		26.1	22.8	21.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	0.7		15.9	0.1		46.7	0.4		16.3	0.3	0.0
Delay (s)	31.2	9.6		44.0	10.4		74.8	25.5		42.4	23.1	21.9
Level of Service	C	A		D	B		E	C		D	C	C
Approach Delay (s)		11.2			10.9			40.7			29.8	
Approach LOS		B			B			D			C	

Intersection Summary

HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	1811	18	37	1497	62	79	94	10	182	64	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3534		1770	3518		1770	1836		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3534		1770	3518		1770	1836		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	1968	20	40	1627	67	86	102	11	198	70	107
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	0	90
Lane Group Flow (vph)	105	1988	0	40	1692	0	86	110	0	198	70	17
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	9.5	72.7		5.1	68.3		7.7	12.4		14.1	18.8	18.8
Effective Green, g (s)	9.5	72.7		5.1	68.3		7.7	12.4		14.1	18.8	18.8
Actuated g/C Ratio	0.08	0.60		0.04	0.57		0.06	0.10		0.12	0.16	0.16
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	140	2132		75	1994		113	189		207	291	247
v/s Ratio Prot	c0.06	c0.56		0.02	0.48		0.05	c0.06		c0.11	0.04	
v/s Ratio Perm												0.01
v/c Ratio	0.75	0.93		0.53	0.85		0.76	0.58		0.96	0.24	0.07
Uniform Delay, d1	54.3	21.7		56.5	21.8		55.5	51.6		52.9	44.6	43.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.0	8.0		3.6	3.4		23.3	2.9		49.4	0.2	0.0
Delay (s)	72.3	29.7		60.1	25.2		78.8	54.5		102.3	44.7	43.4
Level of Service	E	C		E	C		E	D		F	D	D
Approach Delay (s)		31.8			26.0			65.0			74.7	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1116	106	73	670	22	112	414	94	20	258	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3493		1770	3522		1770	3441		1770	3462	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3493		1770	3522		1770	3441		1770	3462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	1213	115	79	728	24	122	450	102	22	280	48
RTOR Reduction (vph)	0	7	0	0	2	0	0	21	0	0	16	0
Lane Group Flow (vph)	103	1321	0	79	750	0	122	531	0	22	312	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.2	33.1		5.1	32.0		7.5	20.5		2.7	15.7	
Effective Green, g (s)	6.2	33.1		5.1	32.0		7.5	20.5		2.7	15.7	
Actuated g/C Ratio	0.08	0.44		0.07	0.42		0.10	0.27		0.04	0.21	
Clearance Time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Vehicle Extension (s)	0.5	2.0		0.5	2.0		0.5	2.0		0.5	2.0	
Lane Grp Cap (vph)	145	1527		119	1489		175	932		63	718	
v/s Ratio Prot	c0.06	c0.38		0.04	0.21		c0.07	c0.15		0.01	0.09	
v/s Ratio Perm												
v/c Ratio	0.71	0.86		0.66	0.50		0.70	0.57		0.35	0.43	
Uniform Delay, d1	33.9	19.3		34.5	16.0		33.0	23.8		35.6	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.8	5.2		10.3	0.1		9.4	0.5		1.2	0.2	
Delay (s)	46.6	24.5		44.8	16.1		42.4	24.3		36.9	26.3	
Level of Service	D	C		D	B		D	C		D	C	
Approach Delay (s)		26.1			18.8			27.5			27.0	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	6.4
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	1678	92	56	1257	15	189	322	9	33	656	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3512		1770	3533		1770	3524		1770	3484	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3512		1770	3533		1770	3524		1770	3484	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	1824	100	61	1366	16	205	350	10	36	713	82
RTOR Reduction (vph)	0	3	0	0	1	0	0	1	0	0	7	0
Lane Group Flow (vph)	147	1921	0	61	1381	0	205	359	0	36	788	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	12.2	66.0		6.0	59.8		13.8	37.6		4.8	28.6	
Effective Green, g (s)	12.2	66.0		6.0	59.8		13.8	37.6		4.8	28.6	
Actuated g/C Ratio	0.09	0.51		0.05	0.46		0.11	0.29		0.04	0.22	
Clearance Time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Vehicle Extension (s)	0.5	2.0		0.5	2.0		0.5	2.0		0.5	2.0	
Lane Grp Cap (vph)	168	1801		83	1642		190	1030		66	774	
v/s Ratio Prot	c0.08	c0.55		0.03	0.39		c0.12	0.10		0.02	c0.23	
v/s Ratio Perm												
v/c Ratio	0.88	1.07		0.73	0.84		1.08	0.35		0.55	1.02	
Uniform Delay, d1	57.5	31.3		60.6	30.3		57.4	35.9		60.9	50.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.3	41.5		24.9	3.9		87.9	0.1		4.9	37.0	
Delay (s)	92.8	72.9		85.4	34.2		145.3	36.0		65.7	87.0	
Level of Service	F	E		F	C		F	D		E	F	
Approach Delay (s)		74.3			36.4			75.6			86.1	
Approach LOS		E			D			E			F	

Intersection Summary

HCM Average Control Delay	65.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	128.7	Sum of lost time (s)	10.8
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	805	65	152	601	68	108	570	262	127	304	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	875	71	165	653	74	117	620	285	138	330	146
RTOR Reduction (vph)	0	0	38	0	0	51	0	0	206	0	0	115
Lane Group Flow (vph)	125	875	33	165	653	23	117	620	79	138	330	31
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.8	18.5	18.5	7.9	20.6	20.6	10.4	17.2	17.2	7.3	14.1	14.1
Effective Green, g (s)	5.8	18.5	18.5	7.9	20.6	20.6	10.4	17.2	17.2	7.3	14.1	14.1
Actuated g/C Ratio	0.09	0.28	0.28	0.12	0.31	0.31	0.16	0.26	0.26	0.11	0.21	0.21
Clearance Time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.5	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	154	1408	438	209	1091	488	276	911	408	193	747	334
v/s Ratio Prot	0.07	0.17		c0.09	c0.18		0.07	c0.18		c0.08	0.09	
v/s Ratio Perm			0.02			0.01			0.05			0.02
v/c Ratio	0.81	0.62	0.08	0.79	0.60	0.05	0.42	0.68	0.19	0.72	0.44	0.09
Uniform Delay, d1	30.0	21.1	17.8	28.6	19.6	16.2	25.5	22.3	19.4	28.7	22.9	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5	0.6	0.0	16.5	0.6	0.0	0.4	1.7	0.1	10.0	0.2	0.0
Delay (s)	55.4	21.7	17.9	45.1	20.2	16.2	25.9	24.0	19.5	38.7	23.1	21.2
Level of Service	E	C	B	D	C	B	C	C	B	D	C	C
Approach Delay (s)		25.4			24.5			23.0			26.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	11.5
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1350	118	189	924	113	76	470	101	131	738	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1467	128	205	1004	123	83	511	110	142	802	304
RTOR Reduction (vph)	0	0	33	0	0	84	0	0	85	0	0	108
Lane Group Flow (vph)	268	1467	95	205	1004	39	83	511	25	142	802	196
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	14.3	29.8	29.8	11.4	26.9	26.9	5.8	19.3	19.3	8.9	22.4	22.4
Effective Green, g (s)	14.3	29.8	29.8	11.4	26.9	26.9	5.8	19.3	19.3	8.9	22.4	22.4
Actuated g/C Ratio	0.17	0.35	0.35	0.13	0.32	0.32	0.07	0.23	0.23	0.10	0.26	0.26
Clearance Time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.5	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	297	1776	553	237	1116	499	120	801	358	185	929	416
v/s Ratio Prot	c0.15	c0.29		0.12	0.28		0.05	c0.14		0.08	c0.23	
v/s Ratio Perm			0.06			0.02			0.02			0.12
v/c Ratio	0.90	0.83	0.17	0.86	0.90	0.08	0.69	0.64	0.07	0.77	0.86	0.47
Uniform Delay, d1	34.8	25.4	19.2	36.2	27.9	20.5	38.9	29.8	25.9	37.2	30.0	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.0	3.1	0.1	25.6	9.6	0.0	13.0	1.2	0.0	15.7	8.1	0.3
Delay (s)	62.9	28.5	19.3	61.8	37.5	20.5	51.9	31.1	26.0	52.8	38.1	26.8
Level of Service	E	C	B	E	D	C	D	C	C	D	D	C
Approach Delay (s)		32.8			39.7			32.7			37.0	
Approach LOS		C			D			C			D	

Intersection Summary

HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	553	452	317	548	26	46	41	72	34	384	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4742		1770	5051		1770	1863	1583	1770	1837	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	4742		1770	5051		1770	1863	1583	1770	1837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	601	491	345	596	28	50	45	78	37	417	43
RTOR Reduction (vph)	0	162	0	0	7	0	0	0	56	0	4	0
Lane Group Flow (vph)	208	930	0	345	617	0	50	45	22	37	456	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	22.8	19.9		17.9	15.0		3.7	22.9	22.9	3.4	22.6	
Effective Green, g (s)	22.8	19.9		17.9	15.0		3.7	22.9	22.9	3.4	22.6	
Actuated g/C Ratio	0.28	0.25		0.22	0.19		0.05	0.28	0.28	0.04	0.28	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	500	1169		393	939		81	529	449	75	514	
v/s Ratio Prot	0.12	c0.20		c0.19	0.12		c0.03	0.02		0.02	c0.25	
v/s Ratio Perm									0.01			
v/c Ratio	0.42	0.88dr		0.88	0.66		0.62	0.09	0.05	0.49	0.89	
Uniform Delay, d1	23.5	28.5		30.3	30.5		37.8	21.2	21.0	37.8	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	3.6		18.8	1.3		9.4	0.0	0.0	1.9	16.3	
Delay (s)	23.7	32.1		49.1	31.7		47.3	21.2	21.0	39.7	44.1	
Level of Service	C	C		D	C		D	C	C	D	D	
Approach Delay (s)		30.7			37.9			28.7			43.8	
Approach LOS		C			D			C			D	

Intersection Summary

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	16.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	1321	52	67	940	84	184	321	183	171	138	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5056		1770	5023		1770	1863	1583	1770	1694	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5056		1770	5023		1770	1863	1583	1770	1694	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	222	1436	57	73	1022	91	200	349	199	186	150	230
RTOR Reduction (vph)	0	4	0	0	12	0	0	0	153	0	65	0
Lane Group Flow (vph)	222	1489	0	73	1101	0	200	349	46	186	315	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	13.1	30.6		5.3	22.8		11.2	18.8	18.8	10.7	18.3	
Effective Green, g (s)	13.1	30.6		5.3	22.8		11.2	18.8	18.8	10.7	18.3	
Actuated g/C Ratio	0.16	0.37		0.06	0.28		0.14	0.23	0.23	0.13	0.22	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	283	1887		114	1397		242	427	363	231	378	
v/s Ratio Prot	0.13	c0.29		0.04	c0.22		0.11	c0.19		0.11	c0.19	
v/s Ratio Perm									0.03			
v/c Ratio	0.78	0.79		0.64	0.79		0.83	0.82	0.13	0.81	0.83	
Uniform Delay, d1	33.1	22.8		37.4	27.4		34.5	30.0	25.1	34.6	30.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.3	2.1		8.8	2.8		19.2	11.0	0.1	17.2	13.9	
Delay (s)	45.4	24.9		46.3	30.2		53.7	40.9	25.1	51.9	44.3	
Level of Service	D	C		D	C		D	D	C	D	D	
Approach Delay (s)		27.6			31.2			40.1			46.8	
Approach LOS		C			C			D			D	

Intersection Summary

HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	489	66	77	820	19	23	62	56	43	52	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	5068		1770	1863	1583	1770	1785	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	1770	5068		1770	1863	1583	1770	1785	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	532	72	84	891	21	25	67	61	47	57	22
RTOR Reduction (vph)	0	0	47	0	3	0	0	0	54	0	19	0
Lane Group Flow (vph)	134	532	25	84	909	0	25	67	7	47	60	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.3	16.5	16.5	6.2	17.4		0.8	5.0	5.0	1.8	6.0	
Effective Green, g (s)	5.3	16.5	16.5	6.2	17.4		0.8	5.0	5.0	1.8	6.0	
Actuated g/C Ratio	0.11	0.35	0.35	0.13	0.37		0.02	0.11	0.11	0.04	0.13	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	201	1800	561	235	1892		30	200	170	68	230	
v/s Ratio Prot	c0.08	0.10		0.05	c0.18		0.01	c0.04		c0.03	0.03	
v/s Ratio Perm			0.02						0.00			
v/c Ratio	0.67	0.30	0.05	0.36	0.48		0.83	0.34	0.04	0.69	0.26	
Uniform Delay, d1	19.8	10.9	9.9	18.4	11.1		22.8	19.3	18.6	22.1	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.3	0.0	0.0	0.3	0.1		93.0	0.4	0.0	21.6	0.2	
Delay (s)	26.1	10.9	9.9	18.7	11.2		115.8	19.6	18.7	43.8	18.5	
Level of Service	C	B	A	B	B		F	B	B	D	B	
Approach Delay (s)		13.6			11.9			35.0			27.9	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	46.6	Sum of lost time (s)	17.1
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	1466	45	25	974	23	46	37	84	39	20	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	5068		1770	1863	1583	1770	1684	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	1770	5068		1770	1863	1583	1770	1684	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	1593	49	27	1059	25	50	40	91	42	22	39
RTOR Reduction (vph)	0	0	13	0	2	0	0	0	81	0	36	0
Lane Group Flow (vph)	104	1593	36	27	1082	0	50	40	10	42	25	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.1	27.8	27.8	1.2	23.9		3.0	5.8	5.8	1.9	4.7	
Effective Green, g (s)	5.1	27.8	27.8	1.2	23.9		3.0	5.8	5.8	1.9	4.7	
Actuated g/C Ratio	0.09	0.52	0.52	0.02	0.44		0.06	0.11	0.11	0.04	0.09	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	168	2628	818	39	2251		99	201	171	63	147	
v/s Ratio Prot	0.06	c0.31		0.02	c0.21		c0.03	c0.02		0.02	0.02	
v/s Ratio Perm			0.02						0.01			
v/c Ratio	0.62	0.61	0.04	0.69	0.48		0.51	0.20	0.06	0.67	0.17	
Uniform Delay, d1	23.4	9.1	6.4	26.1	10.6		24.7	21.9	21.5	25.6	22.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.7	0.3	0.0	35.0	0.1		1.5	0.2	0.1	18.7	0.2	
Delay (s)	28.1	9.4	6.4	61.1	10.6		26.2	22.1	21.6	44.3	23.0	
Level of Service	C	A	A	E	B		C	C	C	D	C	
Approach Delay (s)		10.5			11.8			23.0			31.7	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	8.6
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	344	83	302	843	50	64	195	118	42	285	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4937		1770	5043		1770	1863	1583	1770	1827	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	4937		1770	5043		1770	1863	1583	1770	1827	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	374	90	328	916	54	70	212	128	46	310	46
RTOR Reduction (vph)	0	49	0	0	7	0	0	0	94	0	7	0
Lane Group Flow (vph)	107	415	0	328	963	0	70	212	34	46	349	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	5.6	16.8		10.9	22.1		3.7	17.8	17.8	3.3	17.4	
Effective Green, g (s)	5.6	16.8		10.9	22.1		3.7	17.8	17.8	3.3	17.4	
Actuated g/C Ratio	0.08	0.25		0.16	0.33		0.06	0.27	0.27	0.05	0.26	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)	150	1251		291	1681		99	500	425	88	479	
v/s Ratio Prot	c0.06	0.08		c0.19	c0.19		c0.04	0.11		0.03	c0.19	
v/s Ratio Perm									0.02			
v/c Ratio	0.71	0.33		1.13	0.57		0.71	0.42	0.08	0.52	0.73	
Uniform Delay, d1	29.6	20.2		27.7	18.2		30.8	20.0	18.1	30.7	22.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.5	0.1		91.5	0.3		17.1	0.2	0.0	2.6	4.7	
Delay (s)	42.1	20.2		119.2	18.5		47.9	20.2	18.2	33.3	27.0	
Level of Service	D	C		F	B		D	C	B	C	C	
Approach Delay (s)		24.3			44.0			24.3			27.7	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	294	1107	75	127	583	105	57	551	235	118	342	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5037		1770	4969		1770	1863	1583	1770	1816	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5037		1770	4969		1770	1863	1583	1770	1816	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	320	1203	82	138	634	114	62	599	255	128	372	74
RTOR Reduction (vph)	0	8	0	0	28	0	0	0	171	0	7	0
Lane Group Flow (vph)	320	1277	0	138	720	0	62	599	84	128	439	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	18.7	28.1		9.0	18.4		5.5	30.9	30.9	7.8	33.2	
Effective Green, g (s)	18.7	28.1		9.0	18.4		5.5	30.9	30.9	7.8	33.2	
Actuated g/C Ratio	0.20	0.30		0.10	0.20		0.06	0.33	0.33	0.08	0.36	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)	355	1517		171	980		104	617	524	148	646	
v/s Ratio Prot	0.18	c0.25		0.08	c0.14		0.04	c0.32		c0.07	0.24	
v/s Ratio Perm									0.05			
v/c Ratio	0.90	0.84		0.81	0.73		0.60	0.97	0.16	0.86	0.68	
Uniform Delay, d1	36.4	30.5		41.3	35.2		42.8	30.8	22.0	42.2	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	24.5	4.2		22.4	2.5		6.0	28.8	0.1	36.4	2.2	
Delay (s)	60.9	34.8		63.7	37.6		48.8	59.5	22.1	78.6	27.8	
Level of Service	E	C		E	D		D	E	C	E	C	
Approach Delay (s)		40.0			41.7			48.4			39.1	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	18.4
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑↑	↱	↰	↑↑		↰	↑↑	
Volume (vph)	0	287	124	283	807	76	180	69	0	21	60	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Lane Util. Factor		0.95	1.00	1.00	0.91	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	5085	1583	1770	3539		1770	3481	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.71	1.00		0.71	1.00	
Satd. Flow (perm)		3539	1583	1770	5085	1583	1317	3539		1314	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	312	135	308	877	83	196	75	0	23	65	8
RTOR Reduction (vph)	0	0	102	0	0	36	0	0	0	0	6	0
Lane Group Flow (vph)	0	312	33	308	877	47	196	75	0	23	67	0
Turn Type			Prot	Prot		Perm	Perm			Perm		
Protected Phases		2	2	1	6			8			4	
Permitted Phases						6	8			4		
Actuated Green, G (s)		10.7	10.7	10.4	25.1	25.1	9.1	9.1		9.1	9.1	
Effective Green, g (s)		10.7	10.7	10.4	25.1	25.1	9.1	9.1		9.1	9.1	
Actuated g/C Ratio		0.24	0.24	0.23	0.57	0.57	0.20	0.20		0.20	0.20	
Clearance Time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Vehicle Extension (s)		2.0	2.0	1.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		853	381	415	2875	895	270	725		269	713	
v/s Ratio Prot		0.09	0.02	c0.17	c0.17			0.02			0.02	
v/s Ratio Perm						0.03	c0.15			0.02		
v/c Ratio		0.37	0.09	0.74	0.31	0.05	0.73	0.10		0.09	0.09	
Uniform Delay, d1		14.0	13.1	15.8	5.1	4.3	16.5	14.3		14.3	14.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	6.2	0.0	0.0	8.0	0.0		0.1	0.0	
Delay (s)		14.1	13.1	21.9	5.1	4.3	24.4	14.4		14.3	14.3	
Level of Service		B	B	C	A	A	C	B		B	B	
Approach Delay (s)		13.8			9.1			21.7			14.3	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	9.3
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑↑	↱	↰	↑↑		↰	↑↑	
Volume (vph)	0	726	357	200	462	46	83	70	0	39	133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Lane Util. Factor		0.95	1.00	1.00	0.91	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	5085	1583	1770	3539		1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.66	1.00		0.70	1.00	
Satd. Flow (perm)		3539	1583	1770	5085	1583	1229	3539		1313	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	789	388	217	502	50	90	76	0	42	145	0
RTOR Reduction (vph)	0	0	247	0	0	17	0	0	0	0	0	0
Lane Group Flow (vph)	0	789	141	217	502	33	90	76	0	42	145	0
Turn Type			Prot	Prot		Perm	Perm			Perm		
Protected Phases		2	2	1	6			8			4	
Permitted Phases						6	8			4		
Actuated Green, G (s)		17.6	17.6	10.0	31.6	31.6	6.6	6.6		6.6	6.6	
Effective Green, g (s)		17.6	17.6	10.0	31.6	31.6	6.6	6.6		6.6	6.6	
Actuated g/C Ratio		0.36	0.36	0.21	0.65	0.65	0.14	0.14		0.14	0.14	
Clearance Time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Vehicle Extension (s)		2.0	2.0	1.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1287	576	366	3320	1034	168	483		179	483	
v/s Ratio Prot		c0.22	0.09	c0.12	0.10			0.02			0.04	
v/s Ratio Perm						0.02	c0.07			0.03		
v/c Ratio		0.61	0.24	0.59	0.15	0.03	0.54	0.16		0.23	0.30	
Uniform Delay, d1		12.6	10.8	17.4	3.2	3.0	19.5	18.4		18.6	18.8	
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	0.1	1.7	0.0	0.0	1.6	0.1		0.2	0.1	
Delay (s)		13.2	10.8	19.1	3.2	3.0	21.1	18.5		18.9	18.9	
Level of Service		B	B	B	A	A	C	B		B	B	
Approach Delay (s)		12.4			7.7			19.9			18.9	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	50	15	17	64	14	9	234	21	26	408	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1803			1810		1770	1840		1770	1863	1583
Flt Permitted		0.98			0.95		0.43	1.00		0.59	1.00	1.00
Satd. Flow (perm)		1777			1733		793	1840		1098	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	54	16	18	70	15	10	254	23	28	443	16
RTOR Reduction (vph)	0	11	0	0	10	0	0	6	0	0	0	10
Lane Group Flow (vph)	0	64	0	0	93	0	10	271	0	28	443	6
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		6
Actuated Green, G (s)		11.5			11.5		13.6	13.6		13.6	13.6	13.6
Effective Green, g (s)		11.5			11.5		13.6	13.6		13.6	13.6	13.6
Actuated g/C Ratio		0.34			0.34		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		596			581		314	730		435	739	628
v/s Ratio Prot								0.15			c0.24	
v/s Ratio Perm		0.04			c0.05		0.01			0.03		0.00
v/c Ratio		0.11			0.16		0.03	0.37		0.06	0.60	0.01
Uniform Delay, d1		7.9			8.0		6.3	7.3		6.4	8.2	6.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			0.3		0.1	0.7		0.1	2.0	0.0
Delay (s)		8.0			8.3		6.4	8.0		6.5	10.2	6.3
Level of Service		A			A		A	A		A	B	A
Approach Delay (s)		8.0			8.3			7.9			9.8	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	34.3	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	137	49	39	143	63	20	968	58	30	510	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1794			1784		1770	1847		1770	1863	1583
Flt Permitted		0.95			0.91		0.39	1.00		0.07	1.00	1.00
Satd. Flow (perm)		1719			1627		721	1847		134	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	149	53	42	155	68	22	1052	63	33	554	24
RTOR Reduction (vph)	0	13	0	0	14	0	0	2	0	0	0	8
Lane Group Flow (vph)	0	211	0	0	251	0	22	1113	0	33	554	16
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		6
Actuated Green, G (s)		20.3			20.3		55.6	55.6		55.6	55.6	55.6
Effective Green, g (s)		20.3			20.3		55.6	55.6		55.6	55.6	55.6
Actuated g/C Ratio		0.24			0.24		0.65	0.65		0.65	0.65	0.65
Clearance Time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		410			388		471	1207		88	1217	1034
v/s Ratio Prot								c0.60			0.30	
v/s Ratio Perm		0.12			c0.15		0.03			0.25		0.01
v/c Ratio		0.51			0.65		0.05	0.92		0.38	0.46	0.02
Uniform Delay, d1		28.1			29.2		5.3	12.9		6.8	7.3	5.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.2			5.0		0.1	12.0		5.5	0.6	0.0
Delay (s)		30.3			34.2		5.4	24.9		12.3	7.8	5.2
Level of Service		C			C		A	C		B	A	A
Approach Delay (s)		30.3			34.2			24.5			8.0	
Approach LOS		C			C			C			A	

Intersection Summary

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	85.1	Sum of lost time (s)	9.2
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	183	22	11	96	23	6	233	14	43	453	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			0.95			0.95	
Frt	1.00	1.00	0.85	1.00	0.97			0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1809			3506			3459	
Flt Permitted	0.67	1.00	1.00	0.63	1.00			0.93			0.91	
Satd. Flow (perm)	1256	1863	1583	1179	1809			3278			3158	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	199	24	12	104	25	7	253	15	47	492	78
RTOR Reduction (vph)	0	0	14	0	15	0	0	11	0	0	31	0
Lane Group Flow (vph)	83	199	10	12	114	0	0	264	0	0	586	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)	11.7	11.7	11.7	11.7	11.7			8.6			8.6	
Effective Green, g (s)	11.7	11.7	11.7	11.7	11.7			8.6			8.6	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40			0.30			0.30	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	508	754	641	477	732			975			940	
v/s Ratio Prot		c0.11			0.06							
v/s Ratio Perm	0.07		0.01	0.01				0.08			c0.19	
v/c Ratio	0.16	0.26	0.02	0.03	0.16			0.27			0.62	
Uniform Delay, d1	5.5	5.7	5.1	5.2	5.5			7.8			8.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.0	0.0			0.1			0.9	
Delay (s)	5.5	5.8	5.2	5.2	5.5			7.8			9.7	
Level of Service	A	A	A	A	A			A			A	
Approach Delay (s)		5.7			5.5			7.8			9.7	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	28.9	Sum of lost time (s)	8.6
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	216	25	19	166	41	18	412	25	39	380	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			0.95			0.95	
Frt	1.00	1.00	0.85	1.00	0.97			0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1807			3503			3458	
Flt Permitted	0.62	1.00	1.00	0.61	1.00			0.93			0.89	
Satd. Flow (perm)	1151	1863	1583	1141	1807			3252			3097	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	235	27	21	180	45	20	448	27	42	413	66
RTOR Reduction (vph)	0	0	17	0	21	0	0	10	0	0	28	0
Lane Group Flow (vph)	75	235	10	21	204	0	0	485	0	0	493	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)	11.8	11.8	11.8	11.8	11.8			11.8			11.8	
Effective Green, g (s)	11.8	11.8	11.8	11.8	11.8			11.8			11.8	
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.37			0.37			0.37	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	422	683	580	418	662			1192			1135	
v/s Ratio Prot		c0.13			0.11							
v/s Ratio Perm	0.07		0.01	0.02				0.15			c0.16	
v/c Ratio	0.18	0.34	0.02	0.05	0.31			0.41			0.43	
Uniform Delay, d1	6.9	7.4	6.5	6.6	7.3			7.6			7.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.0	0.1			0.1			0.1	
Delay (s)	7.0	7.5	6.5	6.6	7.4			7.7			7.8	
Level of Service	A	A	A	A	A			A			A	
Approach Delay (s)		7.3			7.3			7.7			7.8	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	32.2	Sum of lost time (s)	8.6
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	64	11	13	133	14	13	249	11	32	434	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1822		1770	1837		1770	1851		1770	1856	
Flt Permitted	0.66	1.00		0.70	1.00		0.37	1.00		0.59	1.00	
Satd. Flow (perm)	1221	1822		1311	1837		684	1851		1092	1856	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	70	12	14	145	15	14	271	12	35	472	12
RTOR Reduction (vph)	0	8	0	0	8	0	0	4	0	0	2	0
Lane Group Flow (vph)	14	74	0	14	152	0	14	279	0	35	482	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	11.5	11.5		11.5	11.5		12.2	12.2		12.2	12.2	
Effective Green, g (s)	11.5	11.5		11.5	11.5		12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.37	0.37		0.37	0.37	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	427	637		458	642		254	686		405	688	
v/s Ratio Prot		0.04			c0.08			0.15			c0.26	
v/s Ratio Perm	0.01			0.01			0.02			0.03		
v/c Ratio	0.03	0.12		0.03	0.24		0.06	0.41		0.09	0.70	
Uniform Delay, d1	7.0	7.3		7.0	7.6		6.6	7.7		6.7	8.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.0	0.1		0.1	0.5		0.1	3.5	
Delay (s)	7.1	7.3		7.1	7.7		6.8	8.2		6.9	12.3	
Level of Service	A	A		A	A		A	A		A	B	
Approach Delay (s)		7.3			7.7			8.1			11.9	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	32.9	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	114	10	20	79	42	13	1038	10	22	540	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.95		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1840		1770	1765		1770	1860		1770	1859	
Flt Permitted	0.67	1.00		0.66	1.00		0.37	1.00		0.08	1.00	
Satd. Flow (perm)	1241	1840		1229	1765		685	1860		146	1859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	124	11	22	86	46	14	1128	11	24	587	7
RTOR Reduction (vph)	0	4	0	0	24	0	0	0	0	0	1	0
Lane Group Flow (vph)	32	131	0	22	108	0	14	1139	0	24	593	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	17.1	17.1		17.1	17.1		50.9	50.9		50.9	50.9	
Effective Green, g (s)	17.1	17.1		17.1	17.1		50.9	50.9		50.9	50.9	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.66	0.66		0.66	0.66	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	275	408		272	391		452	1226		96	1226	
v/s Ratio Prot		c0.07			0.06			c0.61			0.32	
v/s Ratio Perm	0.03			0.02			0.02			0.16		
v/c Ratio	0.12	0.32		0.08	0.28		0.03	0.93		0.25	0.48	
Uniform Delay, d1	24.0	25.2		23.8	24.9		4.6	11.6		5.4	6.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3		0.1	0.3		0.0	12.3		1.9	0.4	
Delay (s)	24.2	25.5		23.9	25.2		4.6	23.8		7.2	7.0	
Level of Service	C	C		C	C		A	C		A	A	
Approach Delay (s)		25.3			25.0			23.6			7.0	
Approach LOS		C			C			C			A	

Intersection Summary

HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	9.2
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	3	18	15	30	13	29	9	39	76	494	1206	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.88	
Frt		1.00	0.90		1.00	0.91			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1675		1770	1690			1770	5085	2787	
Flt Permitted		0.68	1.00		0.73	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1269	1675		1351	1690			1770	5085	2787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	20	16	33	14	32	10	42	83	537	1311	41
RTOR Reduction (vph)	0	0	31	0	0	31	0	0	0	0	2	0
Lane Group Flow (vph)	0	23	18	0	14	53	0	0	83	537	1350	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		8.6	8.6		8.6	8.6			7.9	21.3	58.3	
Effective Green, g (s)		8.6	8.6		8.6	8.6			7.9	21.3	58.3	
Actuated g/C Ratio		0.07	0.07		0.07	0.07			0.07	0.18	0.49	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		92	122		98	123			118	917	1376	
v/s Ratio Prot			0.01			c0.03			0.05	0.11	c0.48	
v/s Ratio Perm		0.02			0.01							
v/c Ratio		0.25	0.15		0.14	0.43			0.70	0.59	0.98	
Uniform Delay, d1		51.7	51.3		51.3	52.4			54.0	44.4	29.4	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		0.5	0.2		0.2	0.9			14.4	2.1	20.2	
Delay (s)		52.2	51.5		51.5	53.3			68.3	46.5	49.6	
Level of Service		D	D		D	D			E	D	D	
Approach Delay (s)			51.8			53.1				49.5		
Approach LOS			D			D				D		

Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	14.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	8	71	23	32	24	14	7	62	96	738	1812	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.88	
Frt		1.00	0.91		1.00	0.88			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1700		1770	1630			1770	5085	2787	
Flt Permitted		0.61	1.00		0.72	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1130	1700		1337	1630			1770	5085	2787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	77	25	35	26	15	8	67	104	802	1970	39
RTOR Reduction (vph)	0	0	32	0	0	61	0	0	0	0	1	0
Lane Group Flow (vph)	0	86	28	0	26	29	0	0	104	802	2008	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		13.3	13.3		13.3	13.3			7.3	25.8	74.4	
Effective Green, g (s)		13.3	13.3		13.3	13.3			7.3	25.8	74.4	
Actuated g/C Ratio		0.09	0.09		0.09	0.09			0.05	0.18	0.52	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		105	158		124	151			90	915	1446	
v/s Ratio Prot			0.02			0.02			0.06	0.16	c0.72	
v/s Ratio Perm		c0.08			0.02							
v/c Ratio		0.82	0.18		0.21	0.19			1.16	0.88	1.39	
Uniform Delay, d1		63.9	60.0		60.2	60.1			68.0	57.2	34.5	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		35.5	0.2		0.3	0.2			142.8	10.9	179.2	
Delay (s)		99.4	60.2		60.5	60.3			210.9	68.2	213.7	
Level of Service		F	E		E	E			F	E	F	
Approach Delay (s)			83.3			60.4				173.6		
Approach LOS			F			E				F		

Intersection Summary

HCM Average Control Delay	122.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	143.4	Sum of lost time (s)	19.6
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Volume (vph)	23	116	622	15	1388	157	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1		4.7		
Lane Util. Factor		1.00	0.91		0.94		
Frt		1.00	1.00		0.98		
Flt Protected		0.95	1.00		0.96		
Satd. Flow (prot)		1770	5068		4921		
Flt Permitted		0.95	1.00		0.96		
Satd. Flow (perm)		1770	5068		4921		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	126	676	16	1509	171	115
RTOR Reduction (vph)	0	0	2	0	6	0	0
Lane Group Flow (vph)	0	151	690	0	1789	0	0
Turn Type	Prot	Prot					
Protected Phases	1	1	6		7		
Permitted Phases							
Actuated Green, G (s)		10.3	23.7		58.3		
Effective Green, g (s)		10.3	23.7		58.3		
Actuated g/C Ratio		0.09	0.20		0.49		
Clearance Time (s)		4.7	5.1		4.7		
Vehicle Extension (s)		2.0	6.8		8.0		
Lane Grp Cap (vph)		154	1017		2429		
v/s Ratio Prot		c0.09	c0.14		0.36		
v/s Ratio Perm							
v/c Ratio		0.98	0.68		0.74		
Uniform Delay, d1		53.8	43.7		23.8		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		66.3	3.1		2.0		
Delay (s)		120.1	46.8		25.8		
Level of Service		F	D		C		
Approach Delay (s)			59.9		25.8		
Approach LOS			E		C		

Intersection Summary

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	115	14	1068	18	1	1556	59	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1			4.7		
Lane Util. Factor		1.00	0.91			0.94		
Frt		1.00	1.00			0.99		
Flt Protected		0.95	1.00			0.95		
Satd. Flow (prot)		1770	5072			4976		
Flt Permitted		0.95	1.00			0.89		
Satd. Flow (perm)		1770	5072			4644		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	15	1161	20	1	1691	64	29
RTOR Reduction (vph)	0	0	1	0	0	1	0	0
Lane Group Flow (vph)	0	140	1180	0	0	1784	0	0
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			7		
Permitted Phases					7			
Actuated Green, G (s)		10.3	28.8			74.4		
Effective Green, g (s)		10.3	28.8			74.4		
Actuated g/C Ratio		0.07	0.20			0.52		
Clearance Time (s)		4.7	5.1			4.7		
Vehicle Extension (s)		2.0	6.8			8.0		
Lane Grp Cap (vph)		127	1019			2409		
v/s Ratio Prot		c0.08	c0.23					
v/s Ratio Perm						0.38		
v/c Ratio		1.10	1.16			0.74		
Uniform Delay, d1		66.5	57.3			27.0		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		110.0	82.4			2.1		
Delay (s)		176.5	139.7			29.0		
Level of Service		F	F			C		
Approach Delay (s)			143.6			29.0		
Approach LOS			F			C		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	3142	25	0	0	0	0	231	87	404	525	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6		4.2	5.6	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5064						3393		1770	3539	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		5064						3393		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	3415	27	0	0	0	0	251	95	439	571	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	3674	0	0	0	0	0	336	0	439	571	0
Turn Type	Split									Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases												
Actuated Green, G (s)		84.4						19.2		28.2	51.6	
Effective Green, g (s)		84.4						19.2		28.2	51.6	
Actuated g/C Ratio		0.57						0.13		0.19	0.35	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		4.1						3.2		2.0	4.3	
Lane Grp Cap (vph)		2904						443		339	1241	
v/s Ratio Prot		c0.73						c0.10		c0.25	0.16	
v/s Ratio Perm												
v/c Ratio		1.27						0.76		1.29	0.46	
Uniform Delay, d1		31.4						61.8		59.5	37.0	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		122.1						7.3		153.0	0.4	
Delay (s)		153.5						69.1		212.5	37.4	
Level of Service		F						E		F	D	
Approach Delay (s)		153.5			0.0			69.1			113.5	
Approach LOS		F			A			E			F	

Intersection Summary

HCM Average Control Delay	139.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	147.2	Sum of lost time (s)	15.4
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	446	3189	45	0	0	0	0	383	140	349	440	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6		4.2	5.6	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5045						3397		1770	3539	
Flt Permitted		0.99						1.00		0.95	1.00	
Satd. Flow (perm)		5045						3397		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	3466	49	0	0	0	0	416	152	379	478	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	3999	0	0	0	0	0	559	0	379	478	0
Turn Type	Split									Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases												
Actuated Green, G (s)		88.4						22.4		23.8	50.4	
Effective Green, g (s)		88.4						22.4		23.8	50.4	
Actuated g/C Ratio		0.59						0.15		0.16	0.34	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		4.1						3.2		2.0	4.3	
Lane Grp Cap (vph)		2973						507		281	1189	
v/s Ratio Prot		c0.79						c0.16		c0.21	0.14	
v/s Ratio Perm												
v/c Ratio		1.35						1.10		1.35	0.40	
Uniform Delay, d1		30.8						63.8		63.1	38.2	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		157.6						71.3		178.7	0.4	
Delay (s)		188.4						135.1		241.8	38.6	
Level of Service		F						F		F	D	
Approach Delay (s)		188.4			0.0			135.1			128.5	
Approach LOS		F			A			F			F	

Intersection Summary			
HCM Average Control Delay	173.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	119.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱						↑↑	↱	↰	↑↑	
Volume (vph)	353	2567	153	0	0	0	0	359	132	112	507	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6	5.6	4.2	5.6	
Lane Util. Factor		0.91						0.95	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		0.99						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5019						3539	1583	1770	3539	
Flt Permitted		0.99						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5019						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	384	2790	166	0	0	0	0	390	143	122	551	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	3336	0	0	0	0	0	390	133	122	551	0
Turn Type	Split								Perm	Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases									8			
Actuated Green, G (s)		83.4						20.9	20.9	8.8	33.9	
Effective Green, g (s)		83.4						20.9	20.9	8.8	33.9	
Actuated g/C Ratio		0.65						0.16	0.16	0.07	0.26	
Clearance Time (s)		5.6						5.6	5.6	4.2	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		3257						576	257	121	934	
v/s Ratio Prot		c0.66						c0.11		c0.07	0.16	
v/s Ratio Perm									0.08			
v/c Ratio		1.02						0.68	0.52	1.01	0.59	
Uniform Delay, d1		22.5						50.6	49.2	59.9	41.2	
Progression Factor		1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2		22.3						4.3	3.8	84.0	1.1	
Delay (s)		44.9						55.0	53.0	143.9	42.4	
Level of Service		D						D	D	F	D	
Approach Delay (s)		44.9			0.0			54.4			60.8	
Approach LOS		D			A			D			E	

Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	128.5	Sum of lost time (s)	15.4
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↑↑↕						↑↑	↱	↰	↑↑	
Volume (vph)	310	3087	132	0	0	0	0	628	220	170	683	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6	5.6	4.2	5.6	
Lane Util. Factor		0.91						0.95	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5035						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5035						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	3355	143	0	0	0	0	683	239	185	742	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	0	3832	0	0	0	0	0	683	232	185	742	0
Turn Type	Split								Perm	Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases									8			
Actuated Green, G (s)		95.4						26.4	26.4	12.8	43.4	
Effective Green, g (s)		95.4						26.4	26.4	12.8	43.4	
Actuated g/C Ratio		0.64						0.18	0.18	0.09	0.29	
Clearance Time (s)		5.6						5.6	5.6	4.2	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		3202						623	279	151	1024	
v/s Ratio Prot		c0.76						c0.19		c0.10	0.21	
v/s Ratio Perm									0.15			
v/c Ratio		1.20						1.10	0.83	1.23	0.72	
Uniform Delay, d1		27.3						61.8	59.7	68.6	47.9	
Progression Factor		1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2		91.9						65.2	20.9	146.3	2.7	
Delay (s)		119.2						127.0	80.5	214.9	50.7	
Level of Service		F						F	F	F	D	
Approach Delay (s)		119.2			0.0			115.0			83.4	
Approach LOS		F			A			F			F	

Intersection Summary

HCM Average Control Delay	112.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	100	59	87	14	30	19	18	233	4	13	422	68
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	64	95	15	33	21	20	253	4	14	459	74
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								722			817	
pX, platoon unblocked	0.96	0.96	0.96	0.96	0.96		0.96					
vC, conflicting volume	855	821	496	945	855	255	533			258		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	827	791	452	921	827	255	490			258		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	55	79	84	91	89	97	98			99		
cM capacity (veh/h)	242	299	582	165	285	783	1028			1307		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	267	68	277	547
Volume Left	109	15	20	14
Volume Right	95	21	4	74
cSH	324	294	1028	1307
Volume to Capacity	0.83	0.23	0.02	0.01
Queue Length 95th (ft)	177	22	1	1
Control Delay (s)	52.3	20.9	0.8	0.3
Lane LOS	F	C	A	A
Approach Delay (s)	52.3	20.9	0.8	0.3
Approach LOS	F	C		

Intersection Summary			
Average Delay	13.6		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	122	0	142	8	63	7	421	667	59	108	468	385
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	133	0	154	9	68	8	458	725	64	117	509	418
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								722			817	
pX, platoon unblocked	0.46	0.46	0.85	0.46	0.46	0.38	0.85			0.38		
vC, conflicting volume	2667	2657	718	2779	2834	757	927			789		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3277	3256	575	3521	3640	0	823			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	65	0	0	98	33			81		
cM capacity (veh/h)	0	1	438	0	1	416	682			623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	287	85	1247	1045
Volume Left	133	9	458	117
Volume Right	154	8	64	418
cSH	0	1	682	623
Volume to Capacity	Err	130.56	0.67	0.19
Queue Length 95th (ft)	Err	Err	129	17
Control Delay (s)	Err	Err	20.3	5.8
Lane LOS	F	F	C	A
Approach Delay (s)	Err	Err	20.3	5.8
Approach LOS	F	F		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	148.2%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1414	933	0	1803	611	0	0	0	171	0	717
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.4		4.4					4.1	4.1	
Lane Util. Factor		0.86	0.86		0.91					0.95	0.95	
Frt		0.97	0.85		0.96					1.00	0.85	
Flt Protected		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (prot)		4647	1362		4892					1681	1509	
Flt Permitted		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (perm)		4647	1362		4892					1681	1509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1537	1014	0	1960	664	0	0	0	186	0	779
RTOR Reduction (vph)	0	48	309	0	61	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	1925	269	0	2563	0	0	0	0	167	796	0
Turn Type			Perm							Split		
Protected Phases		2			6					4	4	
Permitted Phases			2									
Actuated Green, G (s)		46.6	46.6		46.6					44.9	44.9	
Effective Green, g (s)		46.6	46.6		46.6					44.9	44.9	
Actuated g/C Ratio		0.47	0.47		0.47					0.45	0.45	
Clearance Time (s)		4.4	4.4		4.4					4.1	4.1	
Vehicle Extension (s)		4.5	4.5		4.5					4.1	4.1	
Lane Grp Cap (vph)		2166	635		2280					755	678	
v/s Ratio Prot		0.41			c0.52					0.10	c0.53	
v/s Ratio Perm			0.20									
v/c Ratio		0.89	0.42		1.12					0.22	1.17	
Uniform Delay, d1		24.3	17.8		26.7					16.9	27.6	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		5.2	0.8		62.3					0.2	93.5	
Delay (s)		29.5	18.6		89.0					17.1	121.1	
Level of Service		C	B		F					B	F	
Approach Delay (s)		27.0			89.0			0.0			103.1	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM Average Control Delay	65.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1816	1211	0	2252	615	0	0	0	323	0	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.4		4.4					4.1	4.1	
Lane Util. Factor		0.86	0.86		0.91					0.95	0.95	
Frt		0.97	0.85		0.97					1.00	0.86	
Flt Protected		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (prot)		4645	1362		4922					1681	1516	
Flt Permitted		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (perm)		4645	1362		4922					1681	1516	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1974	1316	0	2448	668	0	0	0	351	0	513
RTOR Reduction (vph)	0	44	310	0	45	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	2496	440	0	3071	0	0	0	0	316	546	0
Turn Type			Perm							Split		
Protected Phases		2			6					4	4	
Permitted Phases			2									
Actuated Green, G (s)		64.6	64.6		64.6					36.9	36.9	
Effective Green, g (s)		64.6	64.6		64.6					36.9	36.9	
Actuated g/C Ratio		0.59	0.59		0.59					0.34	0.34	
Clearance Time (s)		4.4	4.4		4.4					4.1	4.1	
Vehicle Extension (s)		4.5	4.5		4.5					4.1	4.1	
Lane Grp Cap (vph)		2728	800		2891					564	509	
v/s Ratio Prot		0.54			c0.62					0.19	c0.36	
v/s Ratio Perm			0.32									
v/c Ratio		0.91	0.55		1.06					0.56	1.07	
Uniform Delay, d1		20.2	13.8		22.7					29.9	36.5	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		5.5	1.2		36.3					1.6	60.8	
Delay (s)		25.8	15.1		59.0					31.5	97.3	
Level of Service		C	B		E					C	F	
Approach Delay (s)		23.3			59.0			0.0			73.3	
Approach LOS		C			E			A			E	

Intersection Summary

HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	302	1418	0	0	2345	730	1304	0	0	198	0	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Lane Util. Factor	0.97	0.91			0.91	1.00	0.97			0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00			1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	3433			3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (perm)	3433	5085			5085	1583	3433			3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	1541	0	0	2549	793	1417	0	0	215	0	292
RTOR Reduction (vph)	0	0	0	0	0	258	0	0	0	0	0	1
Lane Group Flow (vph)	328	1541	0	0	2549	535	1417	0	0	215	0	291
Turn Type	Prot					Over	Prot			Prot		Over
Protected Phases	5	2			6	4	8			4		5
Permitted Phases												
Actuated Green, G (s)	16.8	78.1			56.1	41.1	41.1			41.1		16.8
Effective Green, g (s)	16.8	78.1			56.1	41.1	41.1			41.1		16.8
Actuated g/C Ratio	0.13	0.60			0.43	0.32	0.32			0.32		0.13
Clearance Time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		2.0
Lane Grp Cap (vph)	444	3055			2194	500	1085			1085		205
v/s Ratio Prot	0.10	0.30			c0.50	0.34	c0.41			0.06		c0.18
v/s Ratio Perm												
v/c Ratio	0.74	0.50			1.16	1.07	1.31			0.20		1.42
Uniform Delay, d1	54.5	14.9			37.0	44.5	44.5			32.4		56.6
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00		1.00
Incremental Delay, d2	5.5	0.2			78.3	59.9	144.4			0.2		215.1
Delay (s)	60.0	15.1			115.2	104.4	188.9			32.6		271.7
Level of Service	E	B			F	F	F			C		F
Approach Delay (s)		23.0			112.7			188.9			170.3	
Approach LOS		C			F			F			F	

Intersection Summary

HCM Average Control Delay	108.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	493	1905	0	0	2668	488	1367	0	0	831	0	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Lane Util. Factor	0.97	0.91			0.91	1.00	0.97			0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00			1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	3433			3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (perm)	3433	5085			5085	1583	3433			3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	536	2071	0	0	2900	530	1486	0	0	903	0	712
RTOR Reduction (vph)	0	0	0	0	0	141	0	0	0	0	0	0
Lane Group Flow (vph)	536	2071	0	0	2900	389	1486	0	0	903	0	712
Turn Type	Prot					Over	Prot			Prot		Over
Protected Phases	5	2			6	4	8			4		5
Permitted Phases												
Actuated Green, G (s)	35.8	94.1			53.1	35.1	35.1			35.1		35.8
Effective Green, g (s)	35.8	94.1			53.1	35.1	35.1			35.1		35.8
Actuated g/C Ratio	0.26	0.67			0.38	0.25	0.25			0.25		0.26
Clearance Time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		2.0
Lane Grp Cap (vph)	878	3418			1929	397	861			861		405
v/s Ratio Prot	0.16	0.41			c0.57	0.25	c0.43			0.26		c0.45
v/s Ratio Perm												
v/c Ratio	0.61	0.61			1.50	0.98	1.73			1.05		1.76
Uniform Delay, d1	46.0	12.7			43.4	52.1	52.4			52.4		52.1
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00		1.00
Incremental Delay, d2	0.9	0.4			229.3	39.9	331.6			44.2		351.1
Delay (s)	46.8	13.1			272.7	92.1	384.0			96.7		403.2
Level of Service	D	B			F	F	F			F		F
Approach Delay (s)		20.0			244.8			384.0			231.8	
Approach LOS		C			F			F			F	

Intersection Summary

HCM Average Control Delay	201.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.64		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	142.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	2335	440	602	2790	14	306	11	1147	37	16	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	
Satd. Flow (prot)	1770	3539	1583	3433	3537		1681	1691	1583		1759	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	
Satd. Flow (perm)	1770	3539	1583	3433	3537		1681	1691	1583		1759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	2538	478	654	3033	15	333	12	1247	40	17	16
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	358	0	7	0
Lane Group Flow (vph)	28	2538	392	654	3048	0	173	172	889	0	66	0
Turn Type	Prot		Perm	Prot			Split		Over	Split		
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2									
Actuated Green, G (s)	4.5	62.0	62.0	23.9	83.4		22.3	22.3	23.9		7.3	
Effective Green, g (s)	4.5	62.0	62.0	23.9	83.4		22.3	22.3	23.9		7.3	
Actuated g/C Ratio	0.03	0.45	0.45	0.17	0.61		0.16	0.16	0.17		0.05	
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	
Lane Grp Cap (vph)	58	1603	717	599	2155		274	275	276		94	
v/s Ratio Prot	0.02	c0.72		0.19	0.86		c0.10	0.10	c0.56		c0.04	
v/s Ratio Perm			0.25									
v/c Ratio	0.48	1.58	0.55	1.09	1.41		0.63	0.63	3.22		0.71	
Uniform Delay, d1	65.1	37.5	27.2	56.5	26.8		53.5	53.4	56.5		63.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	2.3	265.5	1.8	64.3	189.3		7.2	6.9	1008.4		17.8	
Delay (s)	67.4	302.9	29.0	120.8	216.0		60.7	60.3	1064.9		81.6	
Level of Service	E	F	C	F	F		E	E	F		F	
Approach Delay (s)		257.8			199.2			847.3			81.6	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	342.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	136.9	Sum of lost time (s)	21.4
Intersection Capacity Utilization	153.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	2797	428	1349	2797	42	576	11	1265	52	20	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	
Satd. Flow (prot)	1770	3539	1583	3433	3531		1681	1688	1583		1764	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	
Satd. Flow (perm)	1770	3539	1583	3433	3531		1681	1688	1583		1764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	3040	465	1466	3040	46	626	12	1375	57	22	18
RTOR Reduction (vph)	0	0	75	0	0	0	0	0	358	0	6	0
Lane Group Flow (vph)	39	3040	390	1466	3086	0	319	319	1017	0	91	0
Turn Type	Prot		Perm	Prot			Split		Over	Split		
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2									
Actuated Green, G (s)	6.3	58.8	58.8	25.8	80.3		34.0	34.0	25.8		8.0	
Effective Green, g (s)	6.3	58.8	58.8	25.8	80.3		34.0	34.0	25.8		8.0	
Actuated g/C Ratio	0.04	0.40	0.40	0.17	0.54		0.23	0.23	0.17		0.05	
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	
Lane Grp Cap (vph)	75	1406	629	598	1916		386	388	276		95	
v/s Ratio Prot	0.02	c0.86		0.43	0.87		c0.19	0.19	c0.64		c0.05	
v/s Ratio Perm			0.25									
v/c Ratio	0.52	2.16	0.62	2.45	1.61		0.83	0.82	3.68		0.96	
Uniform Delay, d1	69.4	44.6	35.7	61.1	33.9		54.2	54.1	61.1		69.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	3.0	525.3	3.0	658.2	277.1		15.4	15.0	1216.5		78.9	
Delay (s)	72.3	569.9	38.7	719.3	311.0		69.6	69.1	1277.6		148.8	
Level of Service	E	F	D	F	F		E	E	F		F	
Approach Delay (s)		494.8			442.5			894.6			148.8	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	547.0	HCM Level of Service	F
HCM Volume to Capacity ratio	2.04		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	21.4
Intersection Capacity Utilization	175.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	273	2737	119	77	367	0	0	434	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		3.7	4.6			4.6	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.92	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					5034		1770	3539			3253	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					5034		1770	3539			3253	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	297	2975	129	84	399	0	0	472	554
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	0	3398	0	84	399	0	0	1017	0
Turn Type				Split			Prot					
Protected Phases				6	6		3	8			4	
Permitted Phases												
Actuated Green, G (s)					88.4		8.3	52.4			40.4	
Effective Green, g (s)					88.4		8.3	52.4			40.4	
Actuated g/C Ratio					0.59		0.06	0.35			0.27	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2967		98	1236			876	
v/s Ratio Prot					c0.67		c0.05	0.11			c0.31	
v/s Ratio Perm												
v/c Ratio					1.15		0.86	0.32			1.25dr	
Uniform Delay, d1					30.8		70.3	35.8			54.8	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					69.9		46.6	0.1			84.8	
Delay (s)					100.7		116.9	35.9			139.6	
Level of Service					F		F	D			F	
Approach Delay (s)		0.0			100.7			50.0			139.6	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM Average Control Delay	103.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	210	3359	357	118	356	0	0	377	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		3.7	4.6			4.6	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.92	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					5003		1770	3539			3252	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					5003		1770	3539			3252	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	228	3651	388	128	387	0	0	410	483
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	0	4259	0	128	387	0	0	890	0
Turn Type				Split			Prot					
Protected Phases				6	6		3	8			4	
Permitted Phases												
Actuated Green, G (s)					95.4		8.3	45.4			33.4	
Effective Green, g (s)					95.4		8.3	45.4			33.4	
Actuated g/C Ratio					0.64		0.06	0.30			0.22	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					3182		98	1071			724	
v/s Ratio Prot					c0.85		c0.07	0.11			c0.27	
v/s Ratio Perm												
v/c Ratio					1.34		1.31	0.36			1.33dr	
Uniform Delay, d1					27.3		70.8	40.9			58.3	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					154.5		193.5	0.2			115.1	
Delay (s)					181.8		264.4	41.1			173.4	
Level of Service					F		F	D			F	
Approach Delay (s)		0.0			181.8			96.6			173.4	
Approach LOS		A			F			F			F	

Intersection Summary

HCM Average Control Delay	172.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	119.3%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	252	2739	314	98	525	0	0	498	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		4.2	4.6			4.6	4.6
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frt					0.99		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4994		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4994		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	274	2977	341	107	571	0	0	541	137
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	0	3584	0	107	571	0	0	541	129
Turn Type				Split			Prot					Prot
Protected Phases				6	6		3	8			4	4
Permitted Phases												
Actuated Green, G (s)					104.0		8.8	36.8			23.8	23.8
Effective Green, g (s)					104.0		8.8	36.8			23.8	23.8
Actuated g/C Ratio					0.69		0.06	0.25			0.16	0.16
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					3463		104	868			562	251
v/s Ratio Prot					c0.72		c0.06	0.16			c0.15	0.08
v/s Ratio Perm												
v/c Ratio					1.03		1.03	0.66			0.96	0.51
Uniform Delay, d1					23.0		70.6	50.9			62.7	57.8
Progression Factor					1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2					25.3		96.2	1.8			29.1	3.7
Delay (s)					48.3		166.8	52.8			91.8	61.5
Level of Service					D		F	D			F	E
Approach Delay (s)		0.0			48.3			70.8			85.6	
Approach LOS		A			D			E			F	

Intersection Summary

HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	325	3236	329	183	700	0	0	677	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		4.2	4.6			4.6	4.6
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frt					0.99		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5000		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					5000		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	353	3517	358	199	761	0	0	736	175
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	7
Lane Group Flow (vph)	0	0	0	0	4221	0	199	761	0	0	736	168
Turn Type				Split			Prot					Prot
Protected Phases				6	6		3	8			4	4
Permitted Phases												
Actuated Green, G (s)					96.4		13.8	44.4			26.4	26.4
Effective Green, g (s)					96.4		13.8	44.4			26.4	26.4
Actuated g/C Ratio					0.64		0.09	0.30			0.18	0.18
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					3213		163	1048			623	279
v/s Ratio Prot					c0.84		c0.11	0.22			c0.21	0.11
v/s Ratio Perm												
v/c Ratio					1.31		1.22	0.73			1.18	0.60
Uniform Delay, d1					26.8		68.1	47.3			61.8	57.0
Progression Factor					1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2					143.5		142.1	2.6			97.4	5.6
Delay (s)					170.3		210.2	49.9			159.2	62.5
Level of Service					F		F	D			F	E
Approach Delay (s)		0.0			170.3			83.1			140.6	
Approach LOS		A			F			F			F	

Intersection Summary

HCM Average Control Delay	152.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	NBT	NBR	SBL2	SBT	SBR	NWR2
Lane Configurations										
Volume (vph)	21	151	35	2	332	139	61	1138	33	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Lane Util. Factor		0.91			0.91	0.91	1.00	0.95		1.00
Frt		0.97			0.99	0.85	1.00	1.00		0.86
Flt Protected		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)		4926			3370	1441	1770	3524		1611
Flt Permitted		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)		4926			3370	1441	1770	3524		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	164	38	2	361	151	66	1237	36	17
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	227	0	0	376	136	66	1273	0	5
Turn Type	Perm					Perm	Prot			custom
Protected Phases		4			2		1	6		
Permitted Phases	4					2				8
Actuated Green, G (s)		19.6			29.0	29.0	4.3	29.8		19.6
Effective Green, g (s)		19.6			29.0	29.0	4.3	29.8		19.6
Actuated g/C Ratio		0.29			0.43	0.43	0.06	0.45		0.29
Clearance Time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Vehicle Extension (s)		2.0			2.0	2.0	3.0	2.0		2.0
Lane Grp Cap (vph)		1448			1465	627	114	1574		473
v/s Ratio Prot					c0.11		0.04	c0.36		
v/s Ratio Perm		0.05				0.09				0.00
v/c Ratio		0.16			0.26	0.22	0.58	0.81		0.01
Uniform Delay, d1		17.4			12.0	11.8	30.3	16.0		16.7
Progression Factor		1.00			1.00	1.00	1.33	0.55		1.00
Incremental Delay, d2		0.0			0.0	0.1	5.7	2.5		0.0
Delay (s)		17.5			12.0	11.8	46.2	11.2		16.7
Level of Service		B			B	B	D	B		B
Approach Delay (s)		17.5			12.0			12.9		
Approach LOS		B			B			B		

Intersection Summary

HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	9.8
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	NBT	NBR	SBL2	SBT	SBR	NWR2
Lane Configurations										
Volume (vph)	104	483	66	15	706	242	56	726	21	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Lane Util. Factor		0.91			0.91	0.91	1.00	0.95		1.00
Frt		0.98			1.00	0.85	1.00	1.00		0.86
Flt Protected		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)		4954			3374	1441	1770	3524		1611
Flt Permitted		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)		4954			3374	1441	1770	3524		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	525	72	16	767	263	61	789	23	26
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	726	0	0	793	237	61	812	0	7
Turn Type	Perm					Perm	Prot			custom
Protected Phases		4			2		1	6		
Permitted Phases	4					2				8
Actuated Green, G (s)		14.6			19.2	19.2	3.3	19.1		14.6
Effective Green, g (s)		14.6			19.2	19.2	3.3	19.1		14.6
Actuated g/C Ratio		0.29			0.38	0.38	0.06	0.38		0.29
Clearance Time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Vehicle Extension (s)		2.0			2.0	2.0	1.0	2.0		2.0
Lane Grp Cap (vph)		1421			1273	544	115	1322		462
v/s Ratio Prot					c0.24		0.03	c0.23		
v/s Ratio Perm		0.15				0.16				0.00
v/c Ratio		0.51			0.62	0.44	0.53	0.61		0.02
Uniform Delay, d1		15.2			12.9	11.8	23.0	12.9		13.0
Progression Factor		1.00			1.00	1.00	1.31	0.61		1.00
Incremental Delay, d2		0.1			0.7	0.2	2.2	0.6		0.0
Delay (s)		15.3			13.6	12.0	32.3	8.5		13.0
Level of Service		B			B	B	C	A		B
Approach Delay (s)		15.3			13.2			10.1		
Approach LOS		B			B			B		

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	14.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	1650	336	0	608	66	74	176	34	86	181	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.97			0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	4956			5010		1770	3453		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	4956			5010		1770	3453		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	242	1793	365	0	661	72	80	191	37	93	197	55
RTOR Reduction (vph)	0	30	0	0	14	0	0	17	0	0	0	45
Lane Group Flow (vph)	242	2128	0	0	719	0	80	211	0	93	197	10
Turn Type	Prot						Split			Split		Perm
Protected Phases	1	6			2		4	4		8	8	
Permitted Phases												8
Actuated Green, G (s)	13.6	39.0			21.7		10.0	10.0		13.7	13.7	13.7
Effective Green, g (s)	13.6	39.0			21.7		10.0	10.0		13.7	13.7	13.7
Actuated g/C Ratio	0.18	0.51			0.28		0.13	0.13		0.18	0.18	0.18
Clearance Time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	1.5	4.5			4.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	313	2517			1416		230	450		316	332	282
v/s Ratio Prot	0.14	c0.43			0.14		0.05	c0.06		0.05	c0.11	
v/s Ratio Perm												0.01
v/c Ratio	0.77	0.85			0.51		0.35	0.47		0.29	0.59	0.03
Uniform Delay, d1	30.1	16.3			23.1		30.4	30.9		27.4	29.0	26.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.3	3.0			0.5		0.9	0.8		0.5	2.8	0.1
Delay (s)	40.5	19.3			23.6		31.3	31.7		27.9	31.8	26.1
Level of Service	D	B			C		C	C		C	C	C
Approach Delay (s)		21.5			23.6			31.6			29.9	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	14.1
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1030	2489	681	0	742	82	351	381	75	80	279	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.97			0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	4921			5010		1770	3451		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	4921			5010		1770	3451		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1120	2705	740	0	807	89	382	414	82	87	303	189
RTOR Reduction (vph)	0	32	0	0	9	0	0	11	0	0	0	156
Lane Group Flow (vph)	1120	3413	0	0	887	0	382	485	0	87	303	33
Turn Type	Prot						Split			Split		Perm
Protected Phases	1	6			2		4	4		8	8	
Permitted Phases												8
Actuated Green, G (s)	60.3	85.5			21.5		23.4	23.4		26.1	26.1	26.1
Effective Green, g (s)	60.3	85.5			21.5		23.4	23.4		26.1	26.1	26.1
Actuated g/C Ratio	0.40	0.57			0.14		0.16	0.16		0.18	0.18	0.18
Clearance Time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	1.5	4.5			4.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	716	2822			722		278	542		310	326	277
v/s Ratio Prot	c0.63	c0.69			0.18		c0.22	0.14		0.05	c0.16	
v/s Ratio Perm												0.02
v/c Ratio	1.56	1.21			1.23		1.37	0.89		0.28	0.93	0.12
Uniform Delay, d1	44.4	31.8			63.8		62.8	61.6		53.4	60.6	51.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	260.7	97.7			115.1		189.5	17.1		0.5	31.7	0.2
Delay (s)	305.1	129.5			178.9		252.3	78.8		53.9	92.3	52.0
Level of Service	F	F			F		F	E		D	F	D
Approach Delay (s)		172.6			178.9			154.3			73.4	
Approach LOS		F			F			F			E	

Intersection Summary

HCM Average Control Delay	162.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	149.1	Sum of lost time (s)	12.9
Intersection Capacity Utilization	122.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	199	51	0	0	0	0	925	564	154	1655	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1						4.4		3.7	4.4	
Lane Util. Factor	1.00	0.91						0.91		1.00	0.91	
Frt	1.00	0.97						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1770	4930						4796		1770	5085	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1770	4930						4796		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	216	55	0	0	0	0	1005	613	167	1799	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	163	0	0	0	0
Lane Group Flow (vph)	259	263	0	0	0	0	0	1455	0	167	1799	0
Turn Type	Split									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)	13.5	13.5						22.8		6.4	32.9	
Effective Green, g (s)	13.5	13.5						22.8		6.4	32.9	
Actuated g/C Ratio	0.25	0.25						0.42		0.12	0.60	
Clearance Time (s)	4.1	4.1						4.4		3.7	4.4	
Vehicle Extension (s)	3.0	3.0						4.0		2.0	4.0	
Lane Grp Cap (vph)	435	1212						1992		206	3047	
v/s Ratio Prot	c0.15	0.05						c0.30		c0.09	0.35	
v/s Ratio Perm												
v/c Ratio	0.60	0.22						0.73		0.81	0.59	
Uniform Delay, d1	18.3	16.5						13.5		23.7	6.8	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1						1.5		19.9	0.4	
Delay (s)	20.5	16.6						15.0		43.6	7.2	
Level of Service	C	B						B		D	A	
Approach Delay (s)		18.5			0.0			15.0			10.3	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	12.2
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	920	219	0	0	0	0	925	1476	330	1587	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1						4.4		3.7	4.4	
Lane Util. Factor	1.00	0.91						0.91		1.00	0.91	
Frt	1.00	0.97						0.91		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1770	4939						4616		1770	5085	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1770	4939						4616		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1000	238	0	0	0	0	1005	1604	359	1725	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	239	1208	0	0	0	0	0	2592	0	359	1725	0
Turn Type	Split									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)	28.9	28.9						65.6		23.3	92.6	
Effective Green, g (s)	28.9	28.9						65.6		23.3	92.6	
Actuated g/C Ratio	0.22	0.22						0.50		0.18	0.71	
Clearance Time (s)	4.1	4.1						4.4		3.7	4.4	
Vehicle Extension (s)	3.0	3.0						4.0		2.0	4.0	
Lane Grp Cap (vph)	393	1098						2329		317	3622	
v/s Ratio Prot	0.14	c0.24						c0.56		c0.20	0.34	
v/s Ratio Perm												
v/c Ratio	0.61	1.10						1.93dr		1.13	0.48	
Uniform Delay, d1	45.5	50.5						32.2		53.4	8.1	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	2.7	58.8						57.5		91.3	0.1	
Delay (s)	48.1	109.3						89.7		144.7	8.3	
Level of Service	D	F						F		F	A	
Approach Delay (s)		99.4			0.0			89.7			31.8	
Approach LOS		F			A			F			C	

Intersection Summary

HCM Average Control Delay	72.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	316	617	57	44	307	0	0	861	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9		4.0	4.9			4.9	
Lane Util. Factor				0.91	0.91		1.00	0.95			0.95	
Frt				1.00	0.99		1.00	1.00			0.99	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1610	3342		1770	3539			3492	
Flt Permitted				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)				1610	3342		1770	3539			3492	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	343	671	62	48	334	0	0	936	92
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	309	759	0	48	334	0	0	1019	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Actuated Green, G (s)				19.6	19.6		3.5	29.0			29.8	
Effective Green, g (s)				19.6	19.6		3.5	29.0			29.8	
Actuated g/C Ratio				0.29	0.29		0.05	0.43			0.45	
Clearance Time (s)				4.9	4.9		4.0	4.9			4.9	
Vehicle Extension (s)				2.0	2.0		1.0	2.0			2.0	
Lane Grp Cap (vph)				473	982		93	1539			1560	
v/s Ratio Prot							c0.03	0.09			c0.29	
v/s Ratio Perm				0.19	0.23							
v/c Ratio				0.65	0.77		0.52	0.22			0.65	
Uniform Delay, d1				20.6	21.5		30.8	11.8			14.4	
Progression Factor				1.00	1.00		0.58	0.44			1.00	
Incremental Delay, d2				2.5	3.5		2.0	0.0			0.8	
Delay (s)				23.1	25.0		19.9	5.3			15.2	
Level of Service				C	C		B	A			B	
Approach Delay (s)		0.0			24.4			7.1			15.2	
Approach LOS		A			C			A			B	

Intersection Summary

HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	13.8
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	254	429	93	67	766	0	0	517	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9		4.0	4.9			4.9	
Lane Util. Factor				0.91	0.91		1.00	0.95			0.95	
Frt				1.00	0.97		1.00	1.00			0.98	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1610	3296		1770	3539			3472	
Flt Permitted				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)				1610	3296		1770	3539			3472	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	276	466	101	73	833	0	0	562	82
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	0	0	248	568	0	73	833	0	0	628	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Actuated Green, G (s)				14.6	14.6		3.4	19.2			19.1	
Effective Green, g (s)				14.6	14.6		3.4	19.2			19.1	
Actuated g/C Ratio				0.29	0.29		0.07	0.38			0.38	
Clearance Time (s)				4.9	4.9		4.0	4.9			4.9	
Vehicle Extension (s)				2.0	2.0		1.0	2.0			2.0	
Lane Grp Cap (vph)				462	945		118	1335			1303	
v/s Ratio Prot							0.04	c0.24			c0.18	
v/s Ratio Perm				0.15	0.17							
v/c Ratio				0.54	0.60		0.62	0.62			0.48	
Uniform Delay, d1				15.3	15.6		23.1	12.9			12.1	
Progression Factor				1.00	1.00		0.77	0.78			1.00	
Incremental Delay, d2				0.6	0.7		5.7	0.6			0.1	
Delay (s)				15.9	16.4		23.5	10.7			12.2	
Level of Service				B	B		C	B			B	
Approach Delay (s)		0.0			16.2			11.7			12.2	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	50.9	Sum of lost time (s)	14.7
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Volume (veh/h)	0	260	1	0	693	11	0	0	56	0	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	283	1	0	753	12	0	0	61	0	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		471										
pX, platoon unblocked												
vC, conflicting volume	765			284			660	1048	142	901	1043	383
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	765			284			660	1048	142	901	1043	383
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	100	93	100	100	97
cM capacity (veh/h)	844			1276			339	226	880	217	228	615

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	188	95	502	263	61	17
Volume Left	0	0	0	0	0	0
Volume Right	0	1	0	12	61	17
cSH	1700	1700	1700	1700	880	615
Volume to Capacity	0.11	0.06	0.30	0.15	0.07	0.03
Queue Length 95th (ft)	0	0	0	0	6	2
Control Delay (s)	0.0	0.0	0.0	0.0	9.4	11.0
Lane LOS					A	B
Approach Delay (s)	0.0		0.0		9.4	11.0
Approach LOS					A	B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↳			↑↑↳				↱			↱
Volume (veh/h)	0	767	31	0	643	54	0	0	51	0	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	834	34	0	699	59	0	0	55	0	0	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		471										
pX, platoon unblocked												
vC, conflicting volume	758			867			1200	1608	434	1145	1596	379
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	758			867			1200	1608	434	1145	1596	379
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	100	90	100	100	95
cM capacity (veh/h)	849			772			134	104	570	139	106	619

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	556	312	466	292	55	28
Volume Left	0	0	0	0	0	0
Volume Right	0	34	0	59	55	28
cSH	1700	1700	1700	1700	570	619
Volume to Capacity	0.33	0.18	0.27	0.17	0.10	0.05
Queue Length 95th (ft)	0	0	0	0	8	4
Control Delay (s)	0.0	0.0	0.0	0.0	12.0	11.1
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		12.0	11.1
Approach LOS					B	B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	191	97	250	516	90	136	680	55	201	444	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.95		1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3361		3433	3460		3433	3966		3433	3947	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3361		3433	3460		3433	3966		3433	3947	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	208	105	272	561	98	148	739	60	218	483	58
RTOR Reduction (vph)	0	76	0	0	16	0	0	7	0	0	10	0
Lane Group Flow (vph)	65	237	0	272	643	0	148	792	0	218	531	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.0	15.7		10.0	21.7		7.0	17.5		7.7	18.2	
Effective Green, g (s)	4.0	15.7		10.0	21.7		7.0	17.5		7.7	18.2	
Actuated g/C Ratio	0.06	0.23		0.14	0.31		0.10	0.25		0.11	0.26	
Clearance Time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Vehicle Extension (s)	1.0	2.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	102	764		497	1087		348	1004		383	1040	
v/s Ratio Prot	c0.04	0.07		c0.08	c0.19		0.04	c0.20		c0.06	0.13	
v/s Ratio Perm												
v/c Ratio	0.64	0.31		0.55	0.59		0.43	0.79		0.57	0.51	
Uniform Delay, d1	31.8	22.2		27.4	20.0		29.2	24.1		29.1	21.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.2	0.1		0.7	0.6		0.3	3.9		1.2	0.2	
Delay (s)	41.1	22.3		28.1	20.5		29.5	27.9		30.3	21.8	
Level of Service	D	C		C	C		C	C		C	C	
Approach Delay (s)		25.5			22.8			28.2			24.3	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	12.2
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	635	130	263	433	114	216	731	81	388	691	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.97		1.00	0.97		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		3433	3429		3433	3951		3433	3975	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3449		3433	3429		3433	3951		3433	3975	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	690	141	286	471	124	235	795	88	422	751	48
RTOR Reduction (vph)	0	19	0	0	25	0	0	10	0	0	5	0
Lane Group Flow (vph)	92	812	0	286	570	0	235	873	0	422	794	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.1	24.2		9.4	27.5		8.9	21.6		11.0	23.7	
Effective Green, g (s)	6.1	24.2		9.4	27.5		8.9	21.6		11.0	23.7	
Actuated g/C Ratio	0.07	0.29		0.11	0.33		0.11	0.26		0.13	0.28	
Clearance Time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Vehicle Extension (s)	1.0	2.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	128	989		382	1117		362	1011		447	1116	
v/s Ratio Prot	0.05	c0.24		c0.08	0.17		0.07	c0.22		c0.12	0.20	
v/s Ratio Perm												
v/c Ratio	0.72	0.82		0.75	0.51		0.65	0.86		0.94	0.71	
Uniform Delay, d1	38.3	28.1		36.4	23.0		36.3	30.0		36.4	27.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.8	5.3		6.9	0.2		3.0	7.5		28.5	1.8	
Delay (s)	53.1	33.4		43.2	23.2		39.2	37.5		64.9	29.1	
Level of Service	D	C		D	C		D	D		E	C	
Approach Delay (s)		35.3			29.7			37.9			41.4	
Approach LOS		D			C			D			D	

Intersection Summary

HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	18.2
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	14	24	37	3	22	212	139	146	11	64	20	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	16	12	12	16	12	12
Total Lost time (s)		5.2	5.2				5.2			5.2		
Lane Util. Factor		1.00	1.00				1.00			1.00		
Frt		1.00	0.85				0.96			0.95		
Flt Protected		0.95	1.00				0.98			1.00		
Satd. Flow (prot)		1770	1583				1986			1993		
Flt Permitted		0.95	1.00				0.74			0.94		
Satd. Flow (perm)		1770	1583				1503			1888		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	26	40	3	24	230	151	159	12	70	22	29
RTOR Reduction (vph)	0	0	2	0	0	0	9	0	0	6	0	0
Lane Group Flow (vph)	0	41	41	0	0	0	555	0	0	127	0	0
Turn Type	Split		Perm		Perm	Perm			Perm			
Protected Phases	3	3					4			4		
Permitted Phases			3		4	4			4			
Actuated Green, G (s)		5.4	5.4				42.8			42.8		
Effective Green, g (s)		5.4	5.4				42.8			42.8		
Actuated g/C Ratio		0.04	0.04				0.29			0.29		
Clearance Time (s)		5.2	5.2				5.2			5.2		
Vehicle Extension (s)		2.0	2.0				4.5			4.5		
Lane Grp Cap (vph)		64	57				433			543		
v/s Ratio Prot		0.02										
v/s Ratio Perm			c0.03				c0.37			0.07		
v/c Ratio		0.64	0.72				1.28			0.23		
Uniform Delay, d1		70.7	70.9				52.9			40.4		
Progression Factor		1.00	1.00				1.00			1.00		
Incremental Delay, d2		15.2	31.3				143.3			0.4		
Delay (s)		85.9	102.2				196.2			40.8		
Level of Service		F	F				F			D		
Approach Delay (s)		94.2					196.2			40.8		
Approach LOS		F					F			D		

Intersection Summary

HCM Average Control Delay	200.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	148.7	Sum of lost time (s)	21.5
Intersection Capacity Utilization	126.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations								
Volume (vph)	55	2438	226	37	69	105	3215	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.9				5.2	5.9	
Lane Util. Factor	1.00	0.91				1.00	0.91	
Frt	1.00	0.99				1.00	1.00	
Flt Protected	0.95	1.00				0.95	1.00	
Satd. Flow (prot)	1770	5011				1770	5081	
Flt Permitted	0.95	1.00				0.95	1.00	
Satd. Flow (perm)	1770	5011				1770	5081	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	2650	246	40	75	114	3495	22
RTOR Reduction (vph)	0	1	0	0	0	0	1	0
Lane Group Flow (vph)	60	2935	0	0	0	189	3516	0
Turn Type	Prot				Prot	Prot		
Protected Phases	1	6			5	5	2	
Permitted Phases								
Actuated Green, G (s)	6.7	68.2				10.8	72.3	
Effective Green, g (s)	6.7	68.2				10.8	72.3	
Actuated g/C Ratio	0.05	0.46				0.07	0.49	
Clearance Time (s)	5.2	5.9				5.2	5.9	
Vehicle Extension (s)	2.0	3.6				2.0	4.3	
Lane Grp Cap (vph)	80	2298				129	2470	
v/s Ratio Prot	0.03	0.59				c0.11	c0.69	
v/s Ratio Perm								
v/c Ratio	0.75	1.28				1.47	1.42	
Uniform Delay, d1	70.2	40.2				68.9	38.2	
Progression Factor	1.00	1.00				1.00	1.00	
Incremental Delay, d2	29.0	128.2				246.6	193.1	
Delay (s)	99.2	168.5				315.6	231.3	
Level of Service	F	F				F	F	
Approach Delay (s)		167.1					235.6	
Approach LOS		F					F	

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL	SET
Lane Configurations												
Volume (vph)	28	7	29	304	40	48	17	67	4	12	65	4400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	16	12	12	12	12
Total Lost time (s)		5.2	5.2		5.2			5.2			5.2	5.9
Lane Util. Factor		1.00	1.00		1.00			1.00			1.00	0.91
Frt		1.00	0.85		0.98			0.98			1.00	1.00
Flt Protected		0.95	1.00		0.96			0.99			0.95	1.00
Satd. Flow (prot)		1770	1583		1999			2049			1770	5066
Flt Permitted		0.95	1.00		0.65			0.95			0.95	1.00
Satd. Flow (perm)		1770	1583		1358			1957			1770	5066
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	8	32	330	43	52	18	73	4	13	71	4783
RTOR Reduction (vph)	0	0	0	0	3	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	38	32	0	422	0	0	105	0	0	71	4909
Turn Type	Split		Perm	Perm			Perm				Prot	
Protected Phases	3	3			4			4			1	6
Permitted Phases			3	4			4					
Actuated Green, G (s)		5.3	5.3		34.8			34.8			6.8	77.2
Effective Green, g (s)		5.3	5.3		34.8			34.8			6.8	77.2
Actuated g/C Ratio		0.04	0.04		0.23			0.23			0.05	0.52
Clearance Time (s)		5.2	5.2		5.2			5.2			5.2	5.9
Vehicle Extension (s)		2.0	2.0		4.5			4.5			2.0	3.6
Lane Grp Cap (vph)		63	56		318			458			81	2632
v/s Ratio Prot		c0.02									0.04	c0.97
v/s Ratio Perm			0.02		c0.31			0.05				
v/c Ratio		0.60	0.57		1.33			0.23			0.88	1.86
Uniform Delay, d1		70.6	70.5		56.9			46.0			70.5	35.7
Progression Factor		1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2		10.7	8.5		167.3			0.4			58.7	390.7
Delay (s)		81.3	79.0		224.2			46.5			129.2	426.4
Level of Service		F	E		F			D			F	F
Approach Delay (s)		80.2			224.2			46.5				422.2
Approach LOS		F			F			D				F

Intersection Summary

HCM Average Control Delay	325.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.72		
Actuated Cycle Length (s)	148.6	Sum of lost time (s)	27.4
Intersection Capacity Utilization	148.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations						
Volume (vph)	96	20	112	50	3523	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)				5.2	5.9	
Lane Util. Factor				1.00	0.91	
Frt				1.00	1.00	
Flt Protected				0.95	1.00	
Satd. Flow (prot)				1770	5075	
Flt Permitted				0.95	1.00	
Satd. Flow (perm)				1770	5075	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	22	122	54	3829	51
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	176	3879	0
Turn Type			Prot	Prot		
Protected Phases			5	5	2	
Permitted Phases						
Actuated Green, G (s)				9.8	80.2	
Effective Green, g (s)				9.8	80.2	
Actuated g/C Ratio				0.07	0.54	
Clearance Time (s)				5.2	5.9	
Vehicle Extension (s)				2.0	4.3	
Lane Grp Cap (vph)				117	2739	
v/s Ratio Prot				c0.10	c0.76	
v/s Ratio Perm						
v/c Ratio				1.50	1.42	
Uniform Delay, d1				69.4	34.2	
Progression Factor				1.00	1.00	
Incremental Delay, d2				266.1	189.5	
Delay (s)				335.5	223.7	
Level of Service				F	F	
Approach Delay (s)					228.6	
Approach LOS					F	

Intersection Summary

Movement	WBL2	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations								
Volume (vph)	74	865	1309	128	232	774	905	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12
Total Lost time (s)		4.1	4.1		3.7	4.4	4.4	
Lane Util. Factor		0.86	0.86		1.00	0.91	0.91	
Frt		1.00	0.99		1.00	1.00	0.97	
Flt Protected		0.95	0.99		0.95	1.00	1.00	
Satd. Flow (prot)		1725	4708		1770	5085	4921	
Flt Permitted		0.95	0.99		0.95	1.00	1.00	
Satd. Flow (perm)		1725	4708		1770	5085	4921	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	940	1423	139	252	841	984	271
RTOR Reduction (vph)	0	8	12	0	0	0	27	0
Lane Group Flow (vph)	0	627	1935	0	252	841	1228	0
Turn Type	Split	Split			Prot			
Protected Phases	8	8	8		5	2	6	
Permitted Phases								
Actuated Green, G (s)		28.9	28.9		10.3	32.2	18.2	
Effective Green, g (s)		28.9	28.9		10.3	32.2	18.2	
Actuated g/C Ratio		0.42	0.42		0.15	0.46	0.26	
Clearance Time (s)		4.1	4.1		3.7	4.4	4.4	
Vehicle Extension (s)		3.0	3.0		2.0	0.2	0.2	
Lane Grp Cap (vph)		716	1955		262	2353	1287	
v/s Ratio Prot		0.36	c0.41		c0.14	0.17	c0.25	
v/s Ratio Perm								
v/c Ratio		0.88	0.99		0.96	0.36	0.95	
Uniform Delay, d1		18.7	20.2		29.5	12.0	25.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.7	17.8		44.6	0.0	15.2	
Delay (s)		30.4	38.0		74.1	12.1	40.5	
Level of Service		C	D		E	B	D	
Approach Delay (s)			36.1			26.4	40.5	
Approach LOS			D			C	D	

Intersection Summary			
HCM Average Control Delay	35.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	12.2
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations								
Volume (vph)	51	630	1038	242	331	854	1231	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12
Total Lost time (s)		4.1	4.1		3.7	4.4	4.4	
Lane Util. Factor		0.86	0.86		1.00	0.91	0.91	
Frt		1.00	0.98		1.00	1.00	0.97	
Flt Protected		0.95	0.99		0.95	1.00	1.00	
Satd. Flow (prot)		1725	4657		1770	5085	4944	
Flt Permitted		0.95	0.99		0.95	1.00	1.00	
Satd. Flow (perm)		1725	4657		1770	5085	4944	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	685	1128	263	360	928	1338	304
RTOR Reduction (vph)	0	5	30	0	0	0	31	0
Lane Group Flow (vph)	0	523	1573	0	360	928	1611	0
Turn Type	Split	Split			Prot			
Protected Phases	8	8	8		5	2	6	
Permitted Phases								
Actuated Green, G (s)		29.6	29.6		18.3	51.9	29.9	
Effective Green, g (s)		29.6	29.6		18.3	51.9	29.9	
Actuated g/C Ratio		0.33	0.33		0.20	0.58	0.33	
Clearance Time (s)		4.1	4.1		3.7	4.4	4.4	
Vehicle Extension (s)		3.0	3.0		2.0	0.2	0.2	
Lane Grp Cap (vph)		567	1532		360	2932	1643	
v/s Ratio Prot		0.30	c0.34		c0.20	0.18	c0.33	
v/s Ratio Perm								
v/c Ratio		0.92	1.03		1.00	0.32	0.98	
Uniform Delay, d1		29.1	30.2		35.9	9.9	29.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		20.7	30.2		47.4	0.0	17.7	
Delay (s)		49.8	60.4		83.3	9.9	47.4	
Level of Service		D	E		F	A	D	
Approach Delay (s)			57.8			30.4	47.4	
Approach LOS			E			C	D	

Intersection Summary

HCM Average Control Delay	47.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	89	19	122	78	144	36	181	62	373	598	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.90		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1813		1770	1681		1770	3404		1770	3482	
Flt Permitted	0.52	1.00		0.68	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	965	1813		1269	1681		1770	3404		1770	3482	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	97	21	133	85	157	39	197	67	405	650	79
RTOR Reduction (vph)	0	12	0	0	105	0	0	49	0	0	12	0
Lane Group Flow (vph)	34	106	0	133	137	0	39	215	0	405	717	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4								
Actuated Green, G (s)	10.0	10.0		10.0	10.0		3.0	13.3		15.4	25.7	
Effective Green, g (s)	10.0	10.0		10.0	10.0		3.0	13.3		15.4	25.7	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.06	0.25		0.29	0.49	
Clearance Time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	184	346		242	321		101	864		520	1708	
v/s Ratio Prot		0.06			0.08		0.02	c0.06		c0.23	c0.21	
v/s Ratio Perm	0.04			c0.10								
v/c Ratio	0.18	0.31		0.55	0.43		0.39	0.25		0.78	0.42	
Uniform Delay, d1	17.8	18.2		19.2	18.7		23.8	15.6		16.9	8.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		1.4	0.3		0.9	0.1		6.6	0.1	
Delay (s)	18.0	18.4		20.5	19.0		24.7	15.6		23.6	8.6	
Level of Service	B	B		C	B		C	B		C	A	
Approach Delay (s)		18.3			19.5			16.8			14.0	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	9.1
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	140	52	164	109	363	42	543	98	293	400	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.88		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1787		1770	1648		1770	3458		1770	3464	
Flt Permitted	0.21	1.00		0.60	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	393	1787		1121	1648		1770	3458		1770	3464	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	152	57	178	118	395	46	590	107	318	435	72
RTOR Reduction (vph)	0	19	0	0	172	0	0	21	0	0	18	0
Lane Group Flow (vph)	134	190	0	178	341	0	46	676	0	318	489	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4								
Actuated Green, G (s)	23.9	23.9		23.9	23.9		5.6	19.4		13.0	26.8	
Effective Green, g (s)	23.9	23.9		23.9	23.9		5.6	19.4		13.0	26.8	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.08	0.28		0.19	0.38	
Clearance Time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	134	610		383	563		142	958		329	1326	
v/s Ratio Prot		0.11			0.21		0.03	c0.20		c0.18	0.14	
v/s Ratio Perm	c0.34			0.16								
v/c Ratio	1.00	0.31		0.46	0.61		0.32	0.71		0.97	0.37	
Uniform Delay, d1	23.1	17.0		18.0	19.1		30.4	22.7		28.3	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	77.7	0.1		0.3	1.3		0.5	2.0		40.1	0.1	
Delay (s)	100.8	17.1		18.4	20.4		30.9	24.7		68.4	15.6	
Level of Service	F	B		B	C		C	C		E	B	
Approach Delay (s)		49.8			19.9			25.1			35.9	
Approach LOS		D			B			C			D	

Intersection Summary

HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	128	49	89	121	232	31	197	129	126	854	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.90		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1786		1770	1679		1770	3329		1770	3454	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1786		1770	1679		1770	3329		1770	3454	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	139	53	97	132	252	34	214	140	137	928	178
RTOR Reduction (vph)	0	19	0	0	83	0	0	95	0	0	17	0
Lane Group Flow (vph)	8	173	0	97	301	0	34	259	0	137	1089	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.0	14.6		5.8	19.4		2.5	20.7		7.6	25.8	
Effective Green, g (s)	1.0	14.6		5.8	19.4		2.5	20.7		7.6	25.8	
Actuated g/C Ratio	0.02	0.23		0.09	0.30		0.04	0.32		0.12	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	27	403		159	503		68	1065		208	1377	
v/s Ratio Prot	0.00	0.10		c0.05	c0.18		0.02	0.08		c0.08	c0.32	
v/s Ratio Perm												
v/c Ratio	0.30	0.43		0.61	0.60		0.50	0.24		0.66	0.79	
Uniform Delay, d1	31.5	21.5		28.4	19.3		30.5	16.2		27.3	17.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.1	0.7		6.8	1.9		5.7	0.1		7.3	3.2	
Delay (s)	37.6	22.2		35.1	21.3		36.2	16.3		34.6	20.3	
Level of Service	D	C		D	C		D	B		C	C	
Approach Delay (s)		22.8			24.1			18.1			21.8	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	289	33	138	148	286	51	349	464	189	477	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.90		1.00	0.91		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1834		1770	1679		1770	3236		1770	3473	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1834		1770	1679		1770	3236		1770	3473	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	314	36	150	161	311	55	379	504	205	518	74
RTOR Reduction (vph)	0	6	0	0	82	0	0	319	0	0	14	0
Lane Group Flow (vph)	15	344	0	150	390	0	55	564	0	205	578	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.3	20.5		8.1	27.3		4.4	17.9		10.6	24.1	
Effective Green, g (s)	1.3	20.5		8.1	27.3		4.4	17.9		10.6	24.1	
Actuated g/C Ratio	0.02	0.28		0.11	0.37		0.06	0.24		0.15	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	31	514		196	627		107	792		257	1145	
v/s Ratio Prot	0.01	0.19		c0.08	c0.23		0.03	c0.17		c0.12	0.17	
v/s Ratio Perm												
v/c Ratio	0.48	0.67		0.77	0.62		0.51	0.71		0.80	0.50	
Uniform Delay, d1	35.6	23.3		31.6	18.7		33.3	25.2		30.2	19.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.4	3.3		16.2	1.9		4.1	3.0		15.7	0.4	
Delay (s)	47.0	26.6		47.8	20.6		37.4	28.3		45.9	20.1	
Level of Service	D	C		D	C		D	C		D	C	
Approach Delay (s)		27.4			27.2			28.8			26.7	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	162	11	66	43	14	34	33	2574	575	147	3416	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1696	1583		1728		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.96	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1696	1583		1728		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	12	72	47	15	37	36	2798	625	160	3713	32
RTOR Reduction (vph)	0	0	68	0	16	0	0	0	100	0	0	2
Lane Group Flow (vph)	93	95	4	0	83	0	36	2798	525	160	3713	30
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			2
Actuated Green, G (s)	8.0	8.0	8.0		12.2		5.9	90.4	90.4	10.3	94.8	94.8
Effective Green, g (s)	8.0	8.0	8.0		12.2		5.9	90.4	90.4	10.3	94.8	94.8
Actuated g/C Ratio	0.06	0.06	0.06		0.09		0.04	0.64	0.64	0.07	0.67	0.67
Clearance Time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Vehicle Extension (s)	4.5	4.5	4.5		3.0		2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	95	96	90		150		74	2269	1015	129	2379	1064
v/s Ratio Prot	0.06	c0.06			c0.05		0.02	0.79		c0.09	c1.05	
v/s Ratio Perm			0.00						0.33			0.02
v/c Ratio	0.98	0.99	0.05		0.56		0.49	1.23	0.52	1.24	1.56	0.03
Uniform Delay, d1	66.4	66.5	62.9		61.8		66.1	25.3	13.6	65.3	23.1	7.7
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	85.1	88.0	0.4		4.4		1.8	109.0	0.9	157.6	254.4	0.0
Delay (s)	151.5	154.4	63.2		66.2		67.9	134.3	14.4	222.9	277.5	7.7
Level of Service	F	F	E		E		E	F	B	F	F	A
Approach Delay (s)		128.1			66.2			111.9			273.1	
Approach LOS		F			E			F			F	

Intersection Summary

HCM Average Control Delay	193.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	141.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	123.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	515	20	136	87	23	31	17	3916	310	321	3954	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1691	1583		1753		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.96	1.00		0.97		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1691	1583		1753		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	560	22	148	95	25	34	18	4257	337	349	4298	12
RTOR Reduction (vph)	0	0	132	0	7	0	0	0	38	0	0	0
Lane Group Flow (vph)	291	291	16	0	147	0	18	4257	299	349	4298	12
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			2
Actuated Green, G (s)	15.5	15.5	15.5		16.9		4.1	77.7	77.7	16.3	89.9	89.9
Effective Green, g (s)	15.5	15.5	15.5		16.9		4.1	77.7	77.7	16.3	89.9	89.9
Actuated g/C Ratio	0.11	0.11	0.11		0.12		0.03	0.53	0.53	0.11	0.61	0.61
Clearance Time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Vehicle Extension (s)	4.5	4.5	4.5		3.0		2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	178	179	167		202		50	1877	840	197	2172	971
v/s Ratio Prot	c0.17	0.17			c0.08		0.01	c1.20		c0.20	1.21	
v/s Ratio Perm			0.01						0.19			0.01
v/c Ratio	1.63	1.63	0.09		0.73		0.36	2.27	0.36	1.77	1.98	0.01
Uniform Delay, d1	65.5	65.5	59.2		62.6		69.9	34.4	19.9	65.1	28.3	11.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	309.7	305.6	0.4		12.3		1.6	572.3	0.5	367.1	442.1	0.0
Delay (s)	375.2	371.1	59.6		74.8		71.5	606.7	20.4	432.2	470.4	11.0
Level of Service	F	F	E		E		E	F	C	F	F	B
Approach Delay (s)		309.6			74.8			561.8			466.4	
Approach LOS		F			E			F			F	

Intersection Summary

HCM Average Control Delay	492.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.92		
Actuated Cycle Length (s)	146.5	Sum of lost time (s)	20.1
Intersection Capacity Utilization	159.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	215	0	142	0	273	0	0	472	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	234	0	154	0	297	0	0	513	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								857				
pX, platoon unblocked												
vC, conflicting volume	816	810	257	553	810	148	513			297		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	816	810	257	553	810	148	513			297		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	44	100	82	100			100		
cM capacity (veh/h)	221	312	743	416	312	872	1049			1261		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	156	232	148	148	342	171
Volume Left	156	78	0	0	0	0
Volume Right	0	154	0	0	0	0
cSH	416	637	1700	1700	1700	1700
Volume to Capacity	0.37	0.36	0.09	0.09	0.20	0.10
Queue Length 95th (ft)	43	42	0	0	0	0
Control Delay (s)	18.8	13.9	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	15.8		0.0		0.0	
Approach LOS	C					

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	30.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	122	19	42	0	516	0	0	524	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	133	21	46	0	561	0	0	570	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								857				
pX, platoon unblocked												
vC, conflicting volume	928	1153	307	846	1175	280	614			561		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	928	1153	307	846	1175	280	614			561		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	48	89	94	100			100		
cM capacity (veh/h)	191	196	689	256	190	717	961			1006		

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	88	111	280	280	380	234
Volume Left	88	44	0	0	0	0
Volume Right	0	46	0	0	0	45
cSH	256	320	1700	1700	1700	1700
Volume to Capacity	0.35	0.35	0.16	0.16	0.22	0.14
Queue Length 95th (ft)	37	37	0	0	0	0
Control Delay (s)	26.3	22.1	0.0	0.0	0.0	0.0
Lane LOS	D	C				
Approach Delay (s)	24.0		0.0		0.0	
Approach LOS	C					

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	27.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1	9	304	1	39	31	515	481	100	737	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.88		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1634		1681	1686	1583	1770	3539	1583	1770	3538	
Flt Permitted		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1634		1681	1686	1583	1770	3539	1583	1770	3538	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1	10	330	1	42	34	560	523	109	801	2
RTOR Reduction (vph)	0	10	0	0	0	34	0	0	354	0	0	0
Lane Group Flow (vph)	0	1	0	165	166	8	34	560	169	109	803	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3			2			
Actuated Green, G (s)		0.8		9.6	9.6	9.6	1.8	16.3	16.3	5.2	19.7	
Effective Green, g (s)		0.8		9.6	9.6	9.6	1.8	16.3	16.3	5.2	19.7	
Actuated g/C Ratio		0.02		0.19	0.19	0.19	0.04	0.32	0.32	0.10	0.39	
Clearance Time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)		2.0		1.5	1.5	1.5	1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)		26		320	321	302	63	1145	512	183	1383	
v/s Ratio Prot		c0.00		0.10	c0.10		0.02	0.16		c0.06	c0.23	
v/s Ratio Perm						0.01			0.11			
v/c Ratio		0.04		0.52	0.52	0.03	0.54	0.49	0.33	0.60	0.58	
Uniform Delay, d1		24.4		18.3	18.3	16.6	23.9	13.7	12.9	21.6	12.1	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3		0.6	0.6	0.0	4.4	0.1	0.1	3.4	0.4	
Delay (s)		24.7		18.9	18.9	16.6	28.3	13.8	13.1	25.0	12.5	
Level of Service		C		B	B	B	C	B	B	C	B	
Approach Delay (s)		24.7			18.6			13.9			14.0	
Approach LOS		C			B			B			B	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	18.5
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	8	26	528	4	69	21	927	234	65	796	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	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	
Flt Protected		0.99		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1689		1681	1686	1583	1770	3539	1583	1770	3537	
Flt Permitted		0.99		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1689		1681	1686	1583	1770	3539	1583	1770	3537	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	9	28	574	4	75	23	1008	254	71	865	4
RTOR Reduction (vph)	0	27	0	0	0	63	0	0	132	0	1	0
Lane Group Flow (vph)	0	17	0	287	291	12	23	1008	122	71	868	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3			2			
Actuated Green, G (s)		3.1		9.9	9.9	9.9	1.0	25.5	25.5	3.6	28.1	
Effective Green, g (s)		3.1		9.9	9.9	9.9	1.0	25.5	25.5	3.6	28.1	
Actuated g/C Ratio		0.05		0.16	0.16	0.16	0.02	0.42	0.42	0.06	0.46	
Clearance Time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)		2.0		1.5	1.5	1.5	1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)		86		275	275	259	29	1489	666	105	1640	
v/s Ratio Prot		c0.01		0.17	c0.17		0.01	c0.28		c0.04	c0.25	
v/s Ratio Perm						0.01			0.08			
v/c Ratio		0.20		1.04	1.06	0.05	0.79	0.68	0.18	0.68	0.53	
Uniform Delay, d1		27.6		25.4	25.4	21.4	29.7	14.2	11.0	27.9	11.6	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		66.1	70.4	0.0	79.5	1.0	0.0	12.7	0.1	
Delay (s)		28.0		91.5	95.8	21.4	109.2	15.2	11.1	40.6	11.7	
Level of Service		C		F	F	C	F	B	B	D	B	
Approach Delay (s)		28.0			85.3			16.1			13.9	
Approach LOS		C			F			B			B	

Intersection Summary

HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	109	108	270	155	183	355	674	101	166	759	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4986		1770	5036	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4986		1770	5036	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	118	117	293	168	199	386	733	110	180	825	57
RTOR Reduction (vph)	0	0	92	0	0	137	0	21	0	0	8	0
Lane Group Flow (vph)	40	118	25	293	168	62	386	822	0	180	874	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.3	18.6	18.6	12.0	26.9	26.9	16.0	27.2		11.2	22.4	
Effective Green, g (s)	4.3	18.6	18.6	12.0	26.9	26.9	16.0	27.2		11.2	22.4	
Actuated g/C Ratio	0.05	0.22	0.22	0.14	0.31	0.31	0.19	0.32		0.13	0.26	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	2.5	2.5	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	88	764	342	246	1104	494	329	1573		230	1309	
v/s Ratio Prot	0.02	0.03		c0.17	c0.05		c0.22	0.16		0.10	c0.17	
v/s Ratio Perm			0.02			0.04						
v/c Ratio	0.45	0.15	0.07	1.19	0.15	0.13	1.17	0.52		0.78	0.67	
Uniform Delay, d1	39.8	27.4	26.9	37.1	21.4	21.2	35.1	24.2		36.3	28.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.2	0.2	118.9	0.0	0.1	105.4	0.6		14.7	1.7	
Delay (s)	41.2	27.6	27.1	156.0	21.5	21.3	140.5	24.8		51.0	30.3	
Level of Service	D	C	C	F	C	C	F	C		D	C	
Approach Delay (s)		29.4			81.2			61.1			33.8	
Approach LOS		C			F			E			C	

Intersection Summary

HCM Average Control Delay	53.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	12.6
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	239	257	295	125	162	149	718	223	312	889	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4905		1770	5061	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4905		1770	5061	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	260	279	321	136	176	162	780	242	339	966	32
RTOR Reduction (vph)	0	0	218	0	0	124	0	61	0	0	3	0
Lane Group Flow (vph)	97	260	61	321	136	52	162	961	0	339	995	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.2	19.0	19.0	13.0	25.4	25.4	10.3	23.6		14.0	27.3	
Effective Green, g (s)	7.2	19.0	19.0	13.0	25.4	25.4	10.3	23.6		14.0	27.3	
Actuated g/C Ratio	0.08	0.22	0.22	0.15	0.29	0.29	0.12	0.27		0.16	0.31	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	2.5	2.5	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	147	775	347	265	1036	463	210	1334		285	1592	
v/s Ratio Prot	0.05	c0.07		c0.18	0.04		0.09	c0.20		c0.19	c0.20	
v/s Ratio Perm			0.04			0.03						
v/c Ratio	0.66	0.34	0.18	1.21	0.13	0.11	0.77	0.72		1.19	0.62	
Uniform Delay, d1	38.6	28.6	27.5	36.9	22.6	22.4	37.1	28.6		36.4	25.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.9	0.5	0.5	124.8	0.0	0.1	14.7	2.4		114.7	1.1	
Delay (s)	46.5	29.1	28.0	161.7	22.6	22.5	51.8	31.0		151.1	26.5	
Level of Service	D	C	C	F	C	C	D	C		F	C	
Approach Delay (s)		31.3			93.1			33.8			58.1	
Approach LOS		C			F			C			E	

Intersection Summary

HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	21.8
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	242	310	0	275	146	321	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97	0.91		0.95		1.00	0.95
Frt	0.95	0.85		0.95		1.00	1.00
Flt Protected	0.97	1.00		1.00		0.95	1.00
Satd. Flow (prot)	3313	1441		3355		1770	3539
Flt Permitted	0.97	1.00		1.00		0.49	1.00
Satd. Flow (perm)	3313	1441		3355		909	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	263	337	0	299	159	349	635
RTOR Reduction (vph)	113	145	0	69	0	0	0
Lane Group Flow (vph)	298	44	0	389	0	349	635
Turn Type		Perm	Perm			Perm	
Protected Phases	8			2			6
Permitted Phases		8	2			6	
Actuated Green, G (s)	9.4	9.4		22.7		22.7	22.7
Effective Green, g (s)	9.4	9.4		22.7		22.7	22.7
Actuated g/C Ratio	0.23	0.23		0.57		0.57	0.57
Clearance Time (s)	4.0	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	777	338		1899		515	2003
v/s Ratio Prot	c0.09			0.12			0.18
v/s Ratio Perm		0.03				c0.38	
v/c Ratio	0.38	0.13		0.20		0.68	0.32
Uniform Delay, d1	12.9	12.1		4.3		6.1	4.6
Progression Factor	1.00	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.3	0.2		0.1		3.5	0.1
Delay (s)	13.2	12.3		4.3		9.7	4.7
Level of Service	B	B		A		A	A
Approach Delay (s)	12.9			4.3			6.5
Approach LOS	B			A			A

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	146	350	0	749	180	539	589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97	0.91		0.95		1.00	0.95
Frt	0.92	0.85		0.97		1.00	1.00
Flt Protected	0.98	1.00		1.00		0.95	1.00
Satd. Flow (prot)	3245	1441		3436		1770	3539
Flt Permitted	0.98	1.00		1.00		0.27	1.00
Satd. Flow (perm)	3245	1441		3436		506	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	380	0	814	196	586	640
RTOR Reduction (vph)	155	172	0	11	0	0	0
Lane Group Flow (vph)	194	18	0	999	0	586	640
Turn Type		Perm	Perm			Perm	
Protected Phases	8			2			6
Permitted Phases		8	2			6	
Actuated Green, G (s)	13.6	13.6		120.1		120.1	120.1
Effective Green, g (s)	13.6	13.6		120.1		120.1	120.1
Actuated g/C Ratio	0.10	0.10		0.85		0.85	0.85
Clearance Time (s)	4.0	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	311	138		2912		429	3000
v/s Ratio Prot	c0.06			0.29			0.18
v/s Ratio Perm		0.01				c1.16	
v/c Ratio	0.62	0.13		0.34		1.37	0.21
Uniform Delay, d1	61.6	58.6		2.3		10.8	2.0
Progression Factor	1.00	1.00		1.00		1.00	1.00
Incremental Delay, d2	3.8	0.4		0.1		179.1	0.0
Delay (s)	65.4	59.1		2.4		189.9	2.0
Level of Service	E	E		A		F	A
Approach Delay (s)	63.2			2.4			91.8
Approach LOS	E			A			F

Intersection Summary

HCM Average Control Delay	53.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	141.7	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	158	66	281	322	240	103	503	129	259	561	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	0.96		1.00	0.94		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3383		1770	3312		1770	4930		1770	4947	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3383		1770	3312		1770	4930		1770	4947	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	172	72	305	350	261	112	547	140	282	610	135
RTOR Reduction (vph)	0	51	0	0	142	0	0	47	0	0	33	0
Lane Group Flow (vph)	149	193	0	305	469	0	112	640	0	282	712	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	10.9	14.1		14.3	17.5		8.4	17.8		14.3	23.7	
Effective Green, g (s)	10.9	14.1		14.3	17.5		8.4	17.8		14.3	23.7	
Actuated g/C Ratio	0.14	0.18		0.19	0.23		0.11	0.23		0.19	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	252	624		331	758		194	1147		331	1533	
v/s Ratio Prot	0.08	0.06		c0.17	c0.14		0.06	c0.13		c0.16	0.14	
v/s Ratio Perm												
v/c Ratio	0.59	0.31		0.92	0.62		0.58	0.56		0.85	0.46	
Uniform Delay, d1	30.7	27.0		30.5	26.5		32.4	25.9		30.1	21.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	0.3		30.1	1.5		4.1	0.6		18.6	0.2	
Delay (s)	34.4	27.3		60.6	28.0		36.5	26.5		48.7	21.5	
Level of Service	C	C		E	C		D	C		D	C	
Approach Delay (s)		30.0			38.9			27.9			29.0	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	469	115	241	271	252	121	680	229	649	724	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	0.97		1.00	0.93		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3435		1770	3284		1770	4893		1770	5009	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3435		1770	3284		1770	4893		1770	5009	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	510	125	262	295	274	132	739	249	705	787	87
RTOR Reduction (vph)	0	15	0	0	115	0	0	42	0	0	9	0
Lane Group Flow (vph)	158	620	0	262	454	0	132	946	0	705	865	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	15.3	29.0		18.0	31.7		15.1	30.7		50.0	65.6	
Effective Green, g (s)	15.3	29.0		18.0	31.7		15.1	30.7		50.0	65.6	
Actuated g/C Ratio	0.11	0.20		0.13	0.22		0.11	0.21		0.35	0.46	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	693		222	724		186	1045		616	2287	
v/s Ratio Prot	0.09	c0.18		c0.15	c0.14		0.07	c0.19		c0.40	0.17	
v/s Ratio Perm												
v/c Ratio	0.84	0.89		1.18	0.63		0.71	0.91		1.14	0.38	
Uniform Delay, d1	63.0	55.9		62.8	50.6		62.2	55.1		46.8	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	27.2	14.0		117.7	1.7		11.7	11.0		83.1	0.1	
Delay (s)	90.2	69.9		180.5	52.3		73.9	66.1		130.0	25.8	
Level of Service	F	E		F	D		E	E		F	C	
Approach Delay (s)		73.9			92.8			67.0			72.3	
Approach LOS		E			F			E			E	

Intersection Summary

HCM Average Control Delay	75.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	143.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBL
Right Turn Channelized												
Volume (veh/h)	18	97	90	42	23	46	21	78	58	86	46	56
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	105	98	46	25	50	23	85	63	93	50	61
Approach Volume (veh/h)			293					314				
Crossing Volume (veh/h)			1114					1041				
High Capacity (veh/h)			567					602				
High v/c (veh/h)			0.52					0.52				
Low Capacity (veh/h)			435					465				
Low v/c (veh/h)			0.67					0.68				

Intersection Summary

Maximum v/c High	1.01				
Maximum v/c Low	1.23				
Intersection Capacity Utilization	123.7%	ICU Level of Service		H	

Movement	NBT	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER
Right Turn Channelized												
Volume (veh/h)	441	67	7	11	55	434	266	209	300	47	8	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	479	73	8	12	60	472	289	227	326	51	9	112
Approach Volume (veh/h)	671					1060					502	
Crossing Volume (veh/h)	776					351					1040	
High Capacity (veh/h)	747					1051					602	
High v/c (veh/h)	0.90					1.01					0.83	
Low Capacity (veh/h)	591					859					465	
Low v/c (veh/h)	1.14					1.23					1.08	

Intersection Summary

Movement	SER2
Right Turn Channelized	
Volume (veh/h)	4
Peak Hour Factor	0.92
Hourly flow rate (vph)	4
Approach Volume (veh/h)	
Crossing Volume (veh/h)	
High Capacity (veh/h)	
High v/c (veh/h)	
Low Capacity (veh/h)	
Low v/c (veh/h)	

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBL
Right Turn Channelized												
Volume (veh/h)	83	248	112	84	45	53	39	115	57	119	100	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	270	122	91	49	58	42	125	62	129	109	176
Approach Volume (veh/h)			622					416				
Crossing Volume (veh/h)			1213#					1593#				
High Capacity (veh/h)			522					380				
High v/c (veh/h)			1.19					1.10				
Low Capacity (veh/h)			397					279				
Low v/c (veh/h)			1.57					1.49				

Intersection Summary				
Maximum v/c High	1.70			
Maximum v/c Low	2.18			
Intersection Capacity Utilization	Err%	ICU Level of Service	H	

Crossing flow exceeds 1200, method is not applicable

Movement	NBT	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER
Right Turn Channelized												
Volume (veh/h)	656	60	15	10	63	559	253	311	217	22	3	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	713	65	16	11	68	608	275	338	236	24	3	163
Approach Volume (veh/h)	1079					1300					601	
Crossing Volume (veh/h)	973					662					1296#	
High Capacity (veh/h)	637					820					487	
High v/c (veh/h)	1.70					1.59					1.23	
Low Capacity (veh/h)	495					654					368	
Low v/c (veh/h)	2.18					1.99					1.63	

Intersection Summary

Movement	SER2
Right Turn Channelized	
Volume (veh/h)	161
Peak Hour Factor	0.92
Hourly flow rate (vph)	175
Approach Volume (veh/h)	
Crossing Volume (veh/h)	
High Capacity (veh/h)	
High v/c (veh/h)	
Low Capacity (veh/h)	
Low v/c (veh/h)	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	939	11	19	526	23	7	8	3	20	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5076		1770	5053		1770	1793		1770	1701	
Flt Permitted	0.42	1.00		0.28	1.00		1.00	1.00		1.00	1.00	
Satd. Flow (perm)	774	5076		528	5053		1863	1793		1863	1701	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	1021	12	21	572	25	8	9	3	22	16	22
RTOR Reduction (vph)	0	2	0	0	7	0	0	3	0	0	20	0
Lane Group Flow (vph)	36	1031	0	21	590	0	8	9	0	22	18	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.1	14.1		14.1	14.1		1.8	1.8		1.8	1.8	
Effective Green, g (s)	14.1	14.1		14.1	14.1		1.8	1.8		1.8	1.8	
Actuated g/C Ratio	0.59	0.59		0.59	0.59		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	457	2995		311	2981		140	135		140	128	
v/s Ratio Prot		c0.20			0.12			0.01			0.01	
v/s Ratio Perm	0.05			0.04			0.00			c0.01		
v/c Ratio	0.08	0.34		0.07	0.20		0.06	0.07		0.16	0.14	
Uniform Delay, d1	2.1	2.5		2.1	2.3		10.3	10.3		10.3	10.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		0.1	0.0		0.2	0.2		0.5	0.5	
Delay (s)	2.2	2.6		2.2	2.3		10.4	10.5		10.9	10.8	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		2.6			2.3			10.5			10.8	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	23.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	915	239	200	1236	24	99	619	211	15	550	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4927		1770	5071		1770	1792		1770	1848	
Flt Permitted	0.22	1.00		0.22	1.00		0.21	1.00		0.21	1.00	
Satd. Flow (perm)	414	4927		414	5071		392	1792		392	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	995	260	217	1343	26	108	673	229	16	598	33
RTOR Reduction (vph)	0	102	0	0	4	0	0	22	0	0	5	0
Lane Group Flow (vph)	67	1153	0	217	1365	0	108	880	0	16	626	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.0	18.0		18.0	18.0		19.0	19.0		19.0	19.0	
Effective Green, g (s)	18.0	18.0		18.0	18.0		19.0	19.0		19.0	19.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.42	0.42		0.42	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	166	1971		166	2028		166	757		166	780	
v/s Ratio Prot		0.23			0.27			c0.49			0.34	
v/s Ratio Perm	0.16			c0.52			0.28			0.04		
v/c Ratio	0.40	0.58		1.31	0.67		0.65	1.16		0.10	0.80	
Uniform Delay, d1	9.7	10.6		13.5	11.1		10.4	13.0		7.8	11.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.4		174.8	0.9		8.8	87.4		0.3	6.0	
Delay (s)	11.3	11.0		188.3	12.0		19.2	100.4		8.1	17.4	
Level of Service	B	B		F	B		B	F		A	B	
Approach Delay (s)		11.0			36.1			91.7			17.1	
Approach LOS		B			D			F			B	

Intersection Summary

HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Hayden Ct & Union Ave

5/24/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	0	2	141	0	53	11	1883	104	284	1628	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1794		1681	1905	1583	1770	5045		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1794		1681	1905	1583	1770	5045		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	0	2	153	0	58	12	2047	113	309	1770	82
RTOR Reduction (vph)	0	2	0	0	0	52	0	4	0	0	0	10
Lane Group Flow (vph)	32	0	0	76	77	6	12	2156	0	309	1770	72
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	6.3	6.3		13.1	13.1	13.1	1.2	59.6		22.5	80.9	80.9
Effective Green, g (s)	6.3	6.3		13.1	13.1	13.1	1.2	59.6		22.5	80.9	80.9
Actuated g/C Ratio	0.05	0.05		0.11	0.11	0.11	0.01	0.51		0.19	0.69	0.69
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	95	96		187	211	176	18	2548		338	3486	1085
v/s Ratio Prot	c0.02	0.00		c0.05	0.04		0.01	c0.43		c0.17	0.35	
v/s Ratio Perm						0.00						0.05
v/c Ratio	0.34	0.00		0.41	0.36	0.04	0.67	0.85		0.91	0.51	0.07
Uniform Delay, d1	53.8	52.9		48.8	48.6	46.8	58.2	25.2		46.8	8.9	6.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.1	0.0		3.5	2.6	0.2	54.1	3.1		27.7	0.3	0.1
Delay (s)	58.9	52.9		52.3	51.2	47.0	112.3	28.3		74.5	9.2	6.2
Level of Service	E	D		D	D	D	F	C		E	A	A
Approach Delay (s)		58.6			50.5			28.8			18.4	
Approach LOS		E			D			C			B	

Intersection Summary

HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Hayden Ct & Union Ave

5/24/201

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	7	29	225	11	241	52	2072	10	93	2293	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.88		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1858		1681	1918	1583	1770	5082		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1858		1681	1918	1583	1770	5082		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	8	32	245	12	262	57	2252	11	101	2492	84
RTOR Reduction (vph)	0	28	0	0	0	164	0	0	0	0	0	12
Lane Group Flow (vph)	118	12	0	127	130	98	57	2263	0	101	2492	72
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	15.1	15.1		17.3	17.3	17.3	6.2	61.3		8.3	63.4	63.4
Effective Green, g (s)	15.1	15.1		17.3	17.3	17.3	6.2	61.3		8.3	63.4	63.4
Actuated g/C Ratio	0.13	0.13		0.15	0.15	0.15	0.05	0.52		0.07	0.54	0.54
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	226	237		245	280	231	93	2629		124	2721	847
v/s Ratio Prot	c0.07	0.01		c0.08	0.07		0.03	0.45		c0.06	c0.49	
v/s Ratio Perm						0.06						0.05
v/c Ratio	0.52	0.05		0.52	0.46	0.42	0.61	0.86		0.81	0.92	0.08
Uniform Delay, d1	48.3	45.4		46.8	46.4	46.1	55.0	24.9		54.3	25.1	13.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.7	0.2		4.2	3.0	3.1	8.1	3.4		30.7	5.7	0.1
Delay (s)	53.1	45.6		51.0	49.3	49.1	63.1	28.3		85.0	30.9	13.5
Level of Service	D	D		D	D	D	E	C		F	C	B
Approach Delay (s)		51.2			49.6			29.2			32.4	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	11.6
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

FRESNO HEAVY MAINTENANCE
FUTURE PLUS PROJECT CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	123	13	66	227	46	31	160	29	33	182	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	134	14	72	247	50	34	174	32	36	198	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	148	368	239	234
Volume Left (vph)	0	72	34	36
Volume Right (vph)	14	50	32	0
Hadj (s)	-0.02	-0.01	-0.02	0.06
Departure Headway (s)	6.0	5.6	5.9	6.0
Degree Utilization, x	0.25	0.57	0.39	0.39
Capacity (veh/h)	525	606	554	549
Control Delay (s)	11.0	15.8	12.6	12.7
Approach Delay (s)	11.0	15.8	12.6	12.7
Approach LOS	B	C	B	B

Intersection Summary			
Delay	13.6		
HCM Level of Service	B		
Intersection Capacity Utilization	51.3%	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			Stop			Stop	
Volume (vph)	92	235	56	106	370	93	25	222	39	36	268	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	255	61	115	402	101	27	241	42	39	291	103

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	416	618	311	434
Volume Left (vph)	100	115	27	39
Volume Right (vph)	61	101	42	103
Hadj (s)	-0.01	-0.03	-0.03	-0.09
Departure Headway (s)	9.1	9.1	9.5	9.0
Degree Utilization, x	1.05	1.56	0.82	1.09
Capacity (veh/h)	401	400	373	394
Control Delay (s)	90.8	287.5	44.3	100.7
Approach Delay (s)	90.8	287.5	44.3	100.7
Approach LOS	F	F	E	F

Intersection Summary			
Delay	153.5		
HCM Level of Service	F		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Volume (veh/h)	0	454	389	0	432	178
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	493	423	0	470	193
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	423				916	423
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	423				916	423
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				0	69
cM capacity (veh/h)	1136				302	631

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	493	423	663
Volume Left	0	0	470
Volume Right	0	0	193
cSH	1700	1700	356
Volume to Capacity	0.29	0.25	1.86
Queue Length 95th (ft)	0	0	1099
Control Delay (s)	0.0	0.0	422.9
Lane LOS			F
Approach Delay (s)	0.0	0.0	422.9
Approach LOS			F

Intersection Summary			
Average Delay	177.6		
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Volume (veh/h)	0	534	443	0	317	177
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	580	482	0	345	192
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	482				1062	482
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	482				1062	482
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				0	67
cM capacity (veh/h)	1081				247	585

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	580	482	537
Volume Left	0	0	345
Volume Right	0	0	192
cSH	1700	1700	312
Volume to Capacity	0.34	0.28	1.72
Queue Length 95th (ft)	0	0	851
Control Delay (s)	0.0	0.0	366.6
Lane LOS			F
Approach Delay (s)	0.0	0.0	366.6
Approach LOS			F

Intersection Summary			
Average Delay	123.1		
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	75	730	385	309	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	793	418	336	0	0
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	418				1543	586
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	418				1543	586
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				100	100
cM capacity (veh/h)	1141				117	510

Direction, Lane #	EB 1	WB 1
Volume Total	875	754
Volume Left	82	0
Volume Right	0	336
cSH	1141	1700
Volume to Capacity	0.07	0.44
Queue Length 95th (ft)	6	0
Control Delay (s)	1.8	0.0
Lane LOS	A	
Approach Delay (s)	1.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	180	633	384	618	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	688	417	672	0	0
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	417				1833	753
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	417				1833	753
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				100	100
cM capacity (veh/h)	1142				69	410

Direction, Lane #	EB 1	WB 1
Volume Total	884	1089
Volume Left	196	0
Volume Right	0	672
cSH	1142	1700
Volume to Capacity	0.17	0.64
Queue Length 95th (ft)	15	0
Control Delay (s)	3.9	0.0
Lane LOS	A	
Approach Delay (s)	3.9	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	330	0	0	755	156	628
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	359	0	0	821	170	683
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			359		1179	359
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			359		1179	359
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		19	0
cM capacity (veh/h)			1200		210	686

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	359	821	852
Volume Left	0	0	170
Volume Right	0	0	683
cSH	1700	1700	473
Volume to Capacity	0.21	0.48	1.80
Queue Length 95th (ft)	0	0	1334
Control Delay (s)	0.0	0.0	389.6
Lane LOS			F
Approach Delay (s)	0.0	0.0	389.6
Approach LOS			F

Intersection Summary			
Average Delay	163.4		
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	516	0	0	924	32	497
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	561	0	0	1004	35	540
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			561		1565	561
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			561		1565	561
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		72	0
cM capacity (veh/h)			1010		123	527

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	561	1004	575
Volume Left	0	0	35
Volume Right	0	0	540
cSH	1700	1700	439
Volume to Capacity	0.33	0.59	1.31
Queue Length 95th (ft)	0	0	636
Control Delay (s)	0.0	0.0	180.8
Lane LOS			F
Approach Delay (s)	0.0	0.0	180.8
Approach LOS			F

Intersection Summary			
Average Delay	48.6		
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	345	27	361	340
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	375	29	392	370
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	1544	390			404	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1544	390			404	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			66	
cM capacity (veh/h)	83	659			1154	

Direction, Lane #	NB 1	SB 1
Volume Total	404	762
Volume Left	0	392
Volume Right	29	0
cSH	1700	1154
Volume to Capacity	0.24	0.34
Queue Length 95th (ft)	0	38
Control Delay (s)	0.0	7.1
Lane LOS		A
Approach Delay (s)	0.0	7.1
Approach LOS		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	492	65	577	299
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	535	71	627	325
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	2149	570			605	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2149	570			605	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			36	
cM capacity (veh/h)	19	521			973	

Direction, Lane #	NB 1	SB 1
Volume Total	605	952
Volume Left	0	627
Volume Right	71	0
cSH	1700	973
Volume to Capacity	0.36	0.64
Queue Length 95th (ft)	0	122
Control Delay (s)	0.0	14.1
Lane LOS		B
Approach Delay (s)	0.0	14.1
Approach LOS		

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	331	464	0	108	198
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	360	504	0	117	215
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	504				864	504
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	504				864	504
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				64	62
cM capacity (veh/h)	1060				325	568

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	360	504	117	215
Volume Left	0	0	117	0
Volume Right	0	0	0	215
cSH	1700	1700	325	568
Volume to Capacity	0.21	0.30	0.36	0.38
Queue Length 95th (ft)	0	0	40	44
Control Delay (s)	0.0	0.0	22.2	15.2
Lane LOS			C	C
Approach Delay (s)	0.0	0.0	17.7	
Approach LOS			C	

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	572	552	0	325	77
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	622	600	0	353	84
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	600				1222	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	600				1222	600
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				0	83
cM capacity (veh/h)	977				198	501

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	622	600	353	84
Volume Left	0	0	353	0
Volume Right	0	0	0	84
cSH	1700	1700	198	501
Volume to Capacity	0.37	0.35	1.78	0.17
Queue Length 95th (ft)	0	0	618	15
Control Delay (s)	0.0	0.0	411.8	13.6
Lane LOS			F	B
Approach Delay (s)	0.0	0.0	335.5	
Approach LOS			F	

Intersection Summary			
Average Delay	88.4		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	79	361	465	140	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	392	505	152	0	0
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	505				1146	582
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	505				1146	582
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				100	100
cM capacity (veh/h)	1059				203	513

Direction, Lane #	EB 1	WB 1
Volume Total	478	658
Volume Left	86	0
Volume Right	0	152
cSH	1059	1700
Volume to Capacity	0.08	0.39
Queue Length 95th (ft)	7	0
Control Delay (s)	2.3	0.0
Lane LOS	A	
Approach Delay (s)	2.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	165	819	548	105	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	179	890	596	114	0	0
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	596				1902	653
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	596				1902	653
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	82				100	100
cM capacity (veh/h)	981				62	467

Direction, Lane #	EB 1	WB 1
Volume Total	1070	710
Volume Left	179	0
Volume Right	0	114
cSH	981	1700
Volume to Capacity	0.18	0.42
Queue Length 95th (ft)	17	0
Control Delay (s)	4.6	0.0
Lane LOS	A	
Approach Delay (s)	4.6	0.0
Approach LOS		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	16	100	4	13	148	22	7	63	10	8	54	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	109	4	14	161	24	8	68	11	9	59	25

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	199	87	92
Volume Left (vph)	17	14	8	9
Volume Right (vph)	4	24	11	25
Hadj (s)	0.04	-0.02	-0.02	-0.11
Departure Headway (s)	4.6	4.5	4.8	4.7
Degree Utilization, x	0.17	0.25	0.12	0.12
Capacity (veh/h)	742	763	698	707
Control Delay (s)	8.5	8.9	8.4	8.3
Approach Delay (s)	8.5	8.9	8.4	8.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.6		
HCM Level of Service		A		
Intersection Capacity Utilization		24.4%	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			Stop			Stop	
Volume (vph)	29	324	18	9	229	7	10	68	22	12	72	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	352	20	10	249	8	11	74	24	13	78	93

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	403	266	109	185
Volume Left (vph)	32	10	11	13
Volume Right (vph)	20	8	24	93
Hadj (s)	0.02	0.02	-0.08	-0.26
Departure Headway (s)	5.2	5.4	6.0	5.7
Degree Utilization, x	0.58	0.40	0.18	0.29
Capacity (veh/h)	658	620	513	564
Control Delay (s)	15.3	12.0	10.3	10.9
Approach Delay (s)	15.3	12.0	10.3	10.9
Approach LOS	C	B	B	B

Intersection Summary				
Delay		13.0		
HCM Level of Service		B		
Intersection Capacity Utilization		48.6%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	84	98	0	23	6
Sign Control	Free			Stop	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	91	107	0	25	7
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	0		12	0	0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		12	0	0	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	100		89	100	97	99
cM capacity (veh/h)	1623		977	896	896	1085

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	91	107	32
Volume Left	0	107	0
Volume Right	91	0	7
cSH	1700	977	929
Volume to Capacity	0.05	0.11	0.03
Queue Length 95th (ft)	0	9	3
Control Delay (s)	0.0	9.1	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	9.1	9.0
Approach LOS		A	A

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	199	120	0	178	20
Sign Control	Free			Stop	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	216	130	0	193	22
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	0		97	0	0	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		97	0	0	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	100		82	100	78	98
cM capacity (veh/h)	1623		724	896	896	1085

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	216	130	215
Volume Left	0	130	0
Volume Right	216	0	22
cSH	1700	724	912
Volume to Capacity	0.13	0.18	0.24
Queue Length 95th (ft)	0	16	23
Control Delay (s)	0.0	11.1	10.2
Lane LOS		B	B
Approach Delay (s)	0.0	11.1	10.2
Approach LOS		B	B

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations										
Volume (veh/h)	0	0	79	75	0	0	899	18	84	789
Sign Control	Stop			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	86	82	0	0	977	20	91	858
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	1245	1240	997			82			1250	41
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	1245	1240	997			82			1250	41
tC, single (s)	7.5	6.5	4.1			4.1			6.5	6.9
tC, 2 stage (s)										
tF (s)	3.5	4.0	2.2			2.2			4.0	3.3
p0 queue free %	100	100	88			100			39	16
cM capacity (veh/h)	10	152	690			1514			150	1021

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NW 1	NW 2
Volume Total	86	41	41	651	345	91	858
Volume Left	86	0	0	0	0	0	0
Volume Right	0	0	0	0	20	0	858
cSH	690	1700	1700	1700	1700	150	1021
Volume to Capacity	0.12	0.02	0.02	0.38	0.20	0.61	0.84
Queue Length 95th (ft)	11	0	0	0	0	81	260
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	60.5	23.8
Lane LOS	B					F	C
Approach Delay (s)	5.6			0.0		27.3	
Approach LOS						D	

Intersection Summary				
Average Delay	12.7			
Intersection Capacity Utilization	58.9%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations										
Volume (veh/h)	0	0	44	246	0	0	836	12	81	600
Sign Control	Stop			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	48	267	0	0	909	13	88	652
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	1189	1278	922			267			1285	134
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	1189	1278	922			267			1285	134
tC, single (s)	7.5	6.5	4.1			4.1			6.5	6.9
tC, 2 stage (s)										
tF (s)	3.5	4.0	2.2			2.2			4.0	3.3
p0 queue free %	100	100	94			100			42	27
cM capacity (veh/h)	20	154	737			1293			153	891

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	NW 1	NW 2
Volume Total	48	134	134	606	316	88	652
Volume Left	48	0	0	0	0	0	0
Volume Right	0	0	0	0	13	0	652
cSH	737	1700	1700	1700	1700	153	891
Volume to Capacity	0.06	0.08	0.08	0.36	0.19	0.58	0.73
Queue Length 95th (ft)	5	0	0	0	0	75	167
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	56.5	19.2
Lane LOS	B					F	C
Approach Delay (s)	1.6			0.0		23.7	
Approach LOS						C	

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations											
Volume (veh/h)	0	0	7	136	45	819	79	91	19	61	24
Sign Control	Stop			Free			Free			Stop	
Grade	0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	8	148	49	890	86	99	21	66	26
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											4
Median type				None			None				
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	2044	2153	185			148			2005	2079	92
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	2044	2153	185			148			2005	2079	92
tC, single (s)	7.5	6.5	4.1			4.1			7.5	6.5	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	2.2			2.2			3.5	4.0	3.3
p0 queue free %	0	100	99			38			0	0	97
cM capacity (veh/h)	0	18	1387			1431			18	20	947

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SE 1
Volume Total	8	99	98	890	57	128	113
Volume Left	8	0	0	890	0	0	21
Volume Right	0	0	49	0	0	99	26
cSH	1387	1700	1700	1431	1700	1700	25
Volume to Capacity	0.01	0.06	0.06	0.62	0.03	0.08	4.54
Queue Length 95th (ft)	0	0	0	115	0	0	Err
Control Delay (s)	7.6	0.0	0.0	11.6	0.0	0.0	Err
Lane LOS	A			B			F
Approach Delay (s)	0.3			9.6			Err
Approach LOS							F

Intersection Summary			
Average Delay	819.2		
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations											
Volume (veh/h)	0	0	38	219	34	626	197	82	41	112	224
Sign Control	Stop			Free			Free			Stop	
Grade	0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	41	238	37	680	214	89	45	122	243
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											4
Median type				None			None				
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	1868	2003	303			238			1821	1940	152
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	1868	2003	303			238			1821	1940	152
tC, single (s)	7.5	6.5	4.1			4.1			7.5	6.5	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	2.2			2.2			3.5	4.0	3.3
p0 queue free %	0	100	97			49			0	0	72
cM capacity (veh/h)	0	28	1254			1326			28	30	867

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SE 1
Volume Total	41	159	116	680	143	161	410
Volume Left	41	0	0	680	0	0	45
Volume Right	0	0	37	0	0	89	243
cSH	1254	1700	1700	1326	1700	1700	70
Volume to Capacity	0.03	0.09	0.07	0.51	0.08	0.09	5.86
Queue Length 95th (ft)	3	0	0	76	0	0	Err
Control Delay (s)	8.0	0.0	0.0	10.5	0.0	0.0	Err
Lane LOS	A			B			F
Approach Delay (s)	1.0			7.3			Err
Approach LOS							F

Intersection Summary				
Average Delay	2400.8			
Intersection Capacity Utilization	60.3%	ICU Level of Service		B
Analysis Period (min)	15			

HANFORD HEAVY MAINTENANCE
FUTURE PLUS PROJECT CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	50	104	11	60	77	49	287	9	79	734	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712			1725		1770	1854		1770	1854	
Flt Permitted		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1712			1725		1770	1854		1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	54	113	12	65	84	53	312	10	86	798	25
RTOR Reduction (vph)	0	45	0	0	46	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	171	0	0	115	0	53	321	0	86	822	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		12.1			10.3		4.2	32.7		6.5	35.0	
Effective Green, g (s)		12.1			10.3		4.2	32.7		6.5	35.0	
Actuated g/C Ratio		0.16			0.13		0.05	0.42		0.08	0.45	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		267			229		96	781		148	836	
v/s Ratio Prot		c0.10			c0.07		0.03	0.17		c0.05	c0.44	
v/s Ratio Perm												
v/c Ratio		0.64			0.50		0.55	0.41		0.58	0.98	
Uniform Delay, d1		30.7			31.3		35.8	15.7		34.2	21.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.2			1.7		6.7	0.4		5.7	26.8	
Delay (s)		35.9			33.0		42.5	16.1		39.9	47.8	
Level of Service		D			C		D	B		D	D	
Approach Delay (s)		35.9			33.0			19.8			47.1	
Approach LOS		D			C			B			D	

Intersection Summary

HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	50	177	8	78	106	153	815	29	94	406	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.93		1.00	0.99		1.00	0.99	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1678			1721		1770	1853		1770	1846	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1678			1721		1770	1853		1770	1846	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	54	192	9	85	115	166	886	32	102	441	28
RTOR Reduction (vph)	0	98	0	0	51	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	175	0	0	158	0	166	917	0	102	466	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		12.3			11.9		10.5	34.8		6.0	30.3	
Effective Green, g (s)		12.3			11.9		10.5	34.8		6.0	30.3	
Actuated g/C Ratio		0.15			0.15		0.13	0.43		0.07	0.37	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		255			253		229	796		131	691	
v/s Ratio Prot		c0.10			c0.09		c0.09	c0.49		0.06	0.25	
v/s Ratio Perm												
v/c Ratio		0.69			0.62		0.72	1.15		0.78	0.68	
Uniform Delay, d1		32.5			32.4		33.9	23.1		36.8	21.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.5			4.7		10.8	82.5		24.7	2.6	
Delay (s)		40.0			37.2		44.7	105.6		61.6	23.8	
Level of Service		D			D		D	F		E	C	
Approach Delay (s)		40.0			37.2			96.3			30.6	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	7	116	0	9	143	1	11	6	1	2	93	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	126	0	10	155	1	12	7	1	2	101	0
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	215	137	101	199	136	7	101			8		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	215	137	101	199	136	7	101			8		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	83	100	99	79	100	99			100		
cM capacity (veh/h)	618	747	954	656	747	1075	1491			1613		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	166	20	103
Volume Left	8	10	12	2
Volume Right	0	1	1	0
cSH	738	743	1491	1613
Volume to Capacity	0.18	0.22	0.01	0.00
Queue Length 95th (ft)	16	21	1	0
Control Delay (s)	11.0	11.2	4.6	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	11.0	11.2	4.6	0.2
Approach LOS	B	B		

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	4	158	72	33	172	1	10	345	4	54	0	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	172	78	36	187	1	11	375	4	59	0	38
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	630	538	19	699	554	377	38			379		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	630	538	19	699	554	377	38			379		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	98	60	93	83	55	100	99			95		
cM capacity (veh/h)	245	425	1059	216	415	669	1572			1179		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	254	224	390	97
Volume Left	4	36	11	59
Volume Right	78	1	4	38
cSH	513	362	1572	1179
Volume to Capacity	0.50	0.62	0.01	0.05
Queue Length 95th (ft)	68	99	1	4
Control Delay (s)	18.7	29.7	0.3	5.1
Lane LOS	C	D	A	A
Approach Delay (s)	18.7	29.7	0.3	5.1
Approach LOS	C	D		

Intersection Summary				
Average Delay	12.5			
Intersection Capacity Utilization	61.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	3	11	5	11	15	11	6	354	16	9	816	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	12	5	12	16	12	7	385	17	10	887	9
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	1338	1326	891	1329	1322	393	896			402		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1338	1326	891	1329	1322	393	896			402		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	97	92	98	90	89	98	99			99		
cM capacity (veh/h)	116	153	341	121	154	655	758			1156		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	40	409	905
Volume Left	3	12	7	10
Volume Right	5	12	17	9
cSH	169	180	758	1156
Volume to Capacity	0.12	0.22	0.01	0.01
Queue Length 95th (ft)	10	21	1	1
Control Delay (s)	29.3	30.7	0.3	0.2
Lane LOS	D	D	A	A
Approach Delay (s)	29.3	30.7	0.3	0.2
Approach LOS	D	D		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	58.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	13	5	18	9	14	7	966	10	7	602	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	14	5	20	10	15	8	1050	11	8	654	3
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	1762	1747	656	1754	1743	1055	658			1061		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1762	1747	656	1754	1743	1055	658			1061		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	90	83	99	65	88	94	99			99		
cM capacity (veh/h)	56	84	465	57	85	274	930			657		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	45	1068	665
Volume Left	5	20	8	8
Volume Right	5	15	11	3
cSH	90	86	930	657
Volume to Capacity	0.28	0.52	0.01	0.01
Queue Length 95th (ft)	25	56	1	1
Control Delay (s)	59.4	84.8	0.3	0.3
Lane LOS	F	F	A	A
Approach Delay (s)	59.4	84.8	0.3	0.3
Approach LOS	F	F		

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	66.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	21	1	0	28	3	0	22	0	0	105	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	23	1	0	30	3	0	24	0	0	114	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	34			24			114	57	23	67	56	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	34			24			114	57	23	67	56	32
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			100			100	97	100	100	86	100
cM capacity (veh/h)	1578			1591			772	834	1053	905	835	1042

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	34	24	115
Volume Left	0	0	0	0
Volume Right	1	3	0	1
cSH	1578	1591	834	837
Volume to Capacity	0.00	0.00	0.03	0.14
Queue Length 95th (ft)	0	0	2	12
Control Delay (s)	0.0	0.0	9.4	10.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.4	10.0
Approach LOS			A	A

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	15.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	20	6	1	24	3	6	362	0	3	98	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	7	1	26	3	7	393	0	3	107	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	29			28			109	57	25	252	58	28
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			28			109	57	25	252	58	28
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			100			99	53	100	99	87	100
cM capacity (veh/h)	1584			1585			783	834	1051	442	832	1048

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	30	400	111
Volume Left	0	1	7	3
Volume Right	7	3	0	1
cSH	1584	1585	833	813
Volume to Capacity	0.00	0.00	0.48	0.14
Queue Length 95th (ft)	0	0	66	12
Control Delay (s)	0.0	0.3	13.2	10.1
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.3	13.2	10.1
Approach LOS			B	B

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

WASCO HEAVY MAINTENANCE
FUTURE PLUS PROJECT CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	271	401	105	18	376	21	149	261	58	30	170	180
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	295	436	114	20	409	23	162	284	63	33	185	196
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	432			550			1818	1553	493	1689	1598	420
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432			550			1818	1553	493	1689	1598	420
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 %	74			98			0	0	89	0	0	69
cM capacity (veh/h)	1128			1020			0	82	576	0	77	633

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	295	550	20	432	509	413
Volume Left	295	0	20	0	162	33
Volume Right	0	114	0	23	63	196
cSH	1128	1700	1020	1700	0	0
Volume to Capacity	0.26	0.32	0.02	0.25	Err	Err
Queue Length 95th (ft)	26	0	1	0	Err	Err
Control Delay (s)	9.3	0.0	8.6	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	3.2		0.4		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: Paso Robles Hwy & Wasco Pond Rd

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	299	423	153	60	512	20	134	243	42	20	271	296
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	325	460	166	65	557	22	146	264	46	22	295	322
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	578			626			2349	1902	543	1985	1974	567
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	578			626			2349	1902	543	1985	1974	567
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 %	67			93			0	0	92	0	0	38
cM capacity (veh/h)	995			956			0	43	540	0	39	523

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	325	626	65	578	455	638
Volume Left	325	0	65	0	146	22
Volume Right	0	166	0	22	46	322
cSH	995	1700	956	1700	0	0
Volume to Capacity	0.33	0.37	0.07	0.34	Err	Err
Queue Length 95th (ft)	36	0	5	0	Err	Err
Control Delay (s)	10.4	0.0	9.0	0.0	Err	Err
Lane LOS	B		A		F	F
Approach Delay (s)	3.5		0.9		Err	Err
Approach LOS					F	F

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	114.3%	ICU Level of Service	H	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
2: 6th Street & Wasco Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	0	5	0	1	0	7	390	3	0	156	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	0	5	0	1	0	8	424	3	0	170	42
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	630	633	191	637	653	426	212			427		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	630	633	191	637	653	426	212			427		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	86	100	99	100	100	100	99			100		
cM capacity (veh/h)	391	395	851	386	385	629	1358			1132		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	62	1	8	427	212
Volume Left	57	0	8	0	0
Volume Right	5	0	0	3	42
cSH	411	385	1358	1700	1132
Volume to Capacity	0.15	0.00	0.01	0.25	0.00
Queue Length 95th (ft)	13	0	0	0	0
Control Delay (s)	15.3	14.4	7.7	0.0	0.0
Lane LOS	C	B	A		
Approach Delay (s)	15.3	14.4	0.1		0.0
Approach LOS	C	B			

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	37.2%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
2: 6th Street & Wasco Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑			↔	
Volume (veh/h)	60	0	6	0	0	0	9	300	0	0	381	69
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	0	7	0	0	0	10	326	0	0	414	75
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	797	797	452	804	835	326	489			326		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	797	797	452	804	835	326	489			326		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	78	100	99	100	100	100	99			100		
cM capacity (veh/h)	302	316	608	296	301	715	1074			1234		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	72	0	10	326	489
Volume Left	65	0	10	0	0
Volume Right	7	0	0	0	75
cSH	317	1700	1074	1700	1234
Volume to Capacity	0.23	0.00	0.01	0.19	0.00
Queue Length 95th (ft)	21	0	1	0	0
Control Delay (s)	19.7	0.0	8.4	0.0	0.0
Lane LOS	C	A	A		
Approach Delay (s)	19.7	0.0	0.2		0.0
Approach LOS	C	A			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

SHAFTER HEAVY MAINTENANCE
FUTURE PLUS PROJECT CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	38	16	5	11	8	57	859	2	92	1027	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	41	17	5	12	9	62	934	2	100	1116	0
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	2390	2375	935	2413	2376	1116	1116			936		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2390	2375	935	2413	2376	1116	1116			936		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	91	0	95	0	56	97	90			86		
cM capacity (veh/h)	12	27	322	0	27	252	626			732		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	60	26	998	1216
Volume Left	1	5	62	100
Volume Right	17	9	2	0
cSH	36	0	626	732
Volume to Capacity	1.68	Err	0.10	0.14
Queue Length 95th (ft)	162	Err	8	12
Control Delay (s)	572.6	Err	3.1	4.8
Lane LOS	F	F	A	A
Approach Delay (s)	572.6	Err	3.1	4.8
Approach LOS	F	F		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: Burbank Street & Santa Fe Way

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	14	30	0	21	63	19	1204	1	35	1012	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	15	33	0	23	68	21	1309	1	38	1100	42
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	2628	2569	1309	2588	2548	1121	1142			1310		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2628	2569	1309	2588	2548	1121	1142			1310		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	33	35	83	100	5	73	97			93		
cM capacity (veh/h)	2	23	195	6	24	251	612			528		

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	49	91	1330	1180
Volume Left	1	0	21	38
Volume Right	33	68	1	42
cSH	33	75	612	528
Volume to Capacity	1.50	1.22	0.03	0.07
Queue Length 95th (ft)	135	175	3	6
Control Delay (s)	520.9	274.1	1.8	3.0
Lane LOS	F	F	A	A
Approach Delay (s)	520.9	274.1	1.8	3.0
Approach LOS	F	F		

Intersection Summary			
Average Delay	21.3		
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	197	12	594	216	45	1094
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	214	13	646	235	49	1189
RTOR Reduction (vph)	0	11	0	92	0	0
Lane Group Flow (vph)	214	2	646	143	49	1189
Turn Type		Prot		Perm	Prot	
Protected Phases	3	3	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	9.7	9.7	36.4	36.4	4.7	45.1
Effective Green, g (s)	9.7	9.7	36.4	36.4	4.7	45.1
Actuated g/C Ratio	0.15	0.15	0.58	0.58	0.07	0.72
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	245	1080	918	132	1338
v/s Ratio Prot	c0.12	0.00	0.35		0.03	c0.64
v/s Ratio Perm				0.09		
v/c Ratio	0.78	0.01	0.60	0.16	0.37	0.89
Uniform Delay, d1	25.5	22.5	8.5	6.1	27.6	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.7	0.0	0.9	0.1	1.8	7.5
Delay (s)	39.2	22.5	9.4	6.2	29.4	14.4
Level of Service	D	C	A	A	C	B
Approach Delay (s)	38.3		8.5			15.0
Approach LOS	D		A			B

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Volume (vph)	244	21	1098	58	9	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	23	1193	63	10	893
RTOR Reduction (vph)	0	19	0	9	0	0
Lane Group Flow (vph)	265	4	1193	54	10	893
Turn Type		Prot		Perm	Prot	
Protected Phases	3	3	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	14.9	14.9	57.7	57.7	1.3	63.0
Effective Green, g (s)	14.9	14.9	57.7	57.7	1.3	63.0
Actuated g/C Ratio	0.17	0.17	0.67	0.67	0.02	0.73
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	275	1251	1063	27	1366
v/s Ratio Prot	c0.15	0.00	c0.64		0.01	c0.48
v/s Ratio Perm				0.03		
v/c Ratio	0.86	0.01	0.95	0.05	0.37	0.65
Uniform Delay, d1	34.5	29.4	12.9	4.8	41.9	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.3	0.0	15.6	0.0	8.4	1.1
Delay (s)	55.8	29.4	28.5	4.8	50.3	7.0
Level of Service	E	C	C	A	D	A
Approach Delay (s)	53.7		27.3			7.5
Approach LOS	D		C			A

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

CORCORAN FUTURE PLUS PROJECT CONDITIONS

HCM Unsignalized Intersection Capacity Analysis
1: Brokaw Ave & Chittenden Ave

5/24/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	6	0	0	0	5	0	0	0	324	37
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	7	0	0	0	5	0	0	0	352	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)											284	
pX, platoon unblocked												
vC, conflicting volume	383	383	196	193	403	0	392			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	383	383	196	193	403	0	392			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	548	546	812	740	532	1084	1163			1622		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	7	0	5	0	235	158
Volume Left	0	0	5	0	0	0
Volume Right	7	0	0	0	0	40
cSH	812	1700	1163	1700	1700	1700
Volume to Capacity	0.01	0.00	0.00	0.00	0.14	0.09
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	9.5	0.0	8.1	0.0	0.0	0.0
Lane LOS	A	A	A			
Approach Delay (s)	9.5	0.0	8.1		0.0	
Approach LOS	A	A				

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
1: Brokaw Ave & Chittenden Ave

5/24/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	6	0	0	0	16	0	0	0	124	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	7	0	0	0	17	0	0	0	135	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											284	
pX, platoon unblocked												
vC, conflicting volume	189	189	86	109	208	0	173			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	189	189	86	109	208	0	173			0		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	99	100	100	100	99			100		
cM capacity (veh/h)	747	696	955	845	680	1084	1401			1622		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	7	0	17	0	90	83
Volume Left	0	0	17	0	0	0
Volume Right	7	0	0	0	0	38
cSH	955	1700	1401	1700	1700	1700
Volume to Capacity	0.01	0.00	0.01	0.00	0.05	0.05
Queue Length 95th (ft)	1	0	1	0	0	0
Control Delay (s)	8.8	0.0	7.6	0.0	0.0	0.0
Lane LOS	A	A	A			
Approach Delay (s)	8.8	0.0	7.6		0.0	
Approach LOS	A	A				

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	21.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	20	424	10	5	96	12	6	14	31	9	21	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	461	11	5	104	13	7	15	34	10	23	33
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	117			472			676	638	466	673	637	111
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			472			676	638	466	673	637	111
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 %	99			100			98	96	94	97	94	97
cM capacity (veh/h)	1471			1090			334	387	596	333	387	942

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	493	123	55	65
Volume Left	22	5	7	10
Volume Right	11	13	34	33
cSH	1471	1090	480	530
Volume to Capacity	0.01	0.00	0.12	0.12
Queue Length 95th (ft)	1	0	10	10
Control Delay (s)	0.5	0.4	13.5	12.7
Lane LOS	A	A	B	B
Approach Delay (s)	0.5	0.4	13.5	12.7
Approach LOS			B	B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	41	216	20	12	351	18	11	21	49	5	30	47
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	235	22	13	382	20	12	23	53	5	33	51
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	401			257			820	762	246	817	763	391
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	401			257			820	762	246	817	763	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			99			95	93	93	98	90	92
cM capacity (veh/h)	1158			1308			241	319	793	251	318	657

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	301	414	88	89
Volume Left	45	13	12	5
Volume Right	22	20	53	51
cSH	1158	1308	467	441
Volume to Capacity	0.04	0.01	0.19	0.20
Queue Length 95th (ft)	3	1	17	19
Control Delay (s)	1.5	0.3	14.5	15.2
Lane LOS	A	A	B	C
Approach Delay (s)	1.5	0.3	14.5	15.2
Approach LOS			B	C

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	468	9	14	67	6	4	11	13	3	240	55
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	509	10	15	73	7	4	12	14	3	261	60
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	79			518			910	762	259	520	764	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	79			518			910	762	259	520	764	40
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			93	96	98	99	16	94
cM capacity (veh/h)	1517			1044			62	313	740	399	312	1023

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	324	264	52	43	30	324
Volume Left	70	0	15	0	4	3
Volume Right	0	10	0	7	14	60
cSH	1517	1700	1044	1700	239	359
Volume to Capacity	0.05	0.16	0.01	0.03	0.13	0.90
Queue Length 95th (ft)	4	0	1	0	11	226
Control Delay (s)	1.9	0.0	2.6	0.0	22.2	60.4
Lane LOS	A		A		C	F
Approach Delay (s)	1.1		1.4		22.2	60.4
Approach LOS					C	F

Intersection Summary			
Average Delay	20.3		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	123	148	6	88	630	145	11	254	26	4	28	51
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	161	7	96	685	158	12	276	28	4	30	55
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	842			167			1036	1465	84	1469	1390	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	842			167			1036	1465	84	1469	1390	421
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	83			93			89	0	97	0	72	90
cM capacity (veh/h)	789			1408			110	98	959	0	109	581

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	214	87	438	500	316	90
Volume Left	134	0	96	0	12	4
Volume Right	0	7	0	158	28	55
cSH	789	1700	1408	1700	107	0
Volume to Capacity	0.17	0.05	0.07	0.29	2.95	Err
Queue Length 95th (ft)	15	0	5	0	751	Err
Control Delay (s)	7.3	0.0	2.2	0.0	962.0	Err
Lane LOS	A		A		F	F
Approach Delay (s)	5.2		1.0		962.0	Err
Approach LOS					F	F

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	61.2%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	0	0	0	11	0	0	0	5	0	0
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	12	0	0	0	5	0	0
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	23	11	0	11	11	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	23	11	0	11	11	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	100	100	100	100	100	99	100			100		
cM capacity (veh/h)	976	881	1085	1004	881	1085	1623			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	12	0	5
Volume Left	0	0	0	5
Volume Right	0	12	0	0
cSH	1700	1085	1700	1623
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	0.0	8.4	0.0	7.2
Lane LOS	A	A		A
Approach Delay (s)	0.0	8.4	0.0	7.2
Approach LOS	A	A		

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	0	0	0	0	0	7	0	0	0	1	0	0
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	8	0	0	0	1	0	0
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	10	2	0	2	2	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10	2	0	2	2	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	100	100	100	100	100	99	100			100		
cM capacity (veh/h)	1001	893	1085	1019	893	1085	1623			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	8	0	1
Volume Left	0	0	0	1
Volume Right	0	8	0	0
cSH	1700	1085	1700	1623
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	0.0	8.3	0.0	7.2
Lane LOS	A	A		A
Approach Delay (s)	0.0	8.3	0.0	7.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix G
Qualitative Analysis for HMF

High-Speed Train Heavy Maintenance Facility __ Proposed Sites

S. No	Submitted by	Site Location	Access routes to sites	Type of access to major road	Lane information	Summary	Convenient Access	Preffered Site	Presence of Railway track	Assumption
1	Schuil & Associates	Southwest corner of Ave 112 and Rd 40, west of Hwy 43 and along the BNSF Railroad line, 9 miles south of the city of Corcoran, CA	Connected to Ave 112, Rd 40 and Angiola Dr. Ave 112 is connected to Hwy 43.	Intersection: Ave 112 and Hwy 43. .	Ave112 has one lane in each direction	1.Hwy 43 is one lane in either directionand does not have left turn pocket hence it will be difficult to get a gap for left turning vehicles. 2. There is a railway track parallel to the access road. 3.Ave 112 would be the only access to this site from Hwy 43.	No	No	Railway track parallel to Hwy 43	60% from NB and 40% from SB
2	Watson Touchstone Commercial Development	Between Sherwood Ave and Whisler Rd next to the East side of Hwy 99, south of McFarland, approximately 25 miles north of Bakersfield.	Connected to Sherwood Ave, Taylor Ave, Hanawalt Ave, S Browning Rd and Whisler Rd. Access from Sherwood Ave and Whisler Rd to State Hwy 99	Interchanges: Sherwood Ave & Hwy 99; Whisler Rd & Hwy 99. .	Sherwood Ave and Whisler Rd have one lane in each direction	1. Site location next to Sherwood Ave does not have a convenient access. 2. Site location close to Whisler Raod(i.e north of Whisler Interchage) has a better access, but would need to have paved roads for the access.	1.No (Close to Sherwood Avenue) 2.Yes (Close to Whisler Road)	Yes (Since the Access is from Hwy 99 which is 3 lanes in either direction in the vicinity)	Railway track parallel to Hwy 99	40% from NB and 60% from SB
3	City of Allensworth Development Group, LLC	Adjacent and to the west of State Hwy 43; located south of the Colonel Allensworth State Historic Park and north and west of the Allensworth Ecological Reserve.	Connected to Rd 84 and Ave 24. Access from Ave 24 to State Hwy 43.	Intersection: Ave 24 and Hwy 43	Ave 24 has one lane in either direction	1.Hwy 43 is one lane in either direction and does not have left turn pocket hence it will be difficult to get a gap for left turning vehicles. 2. There is a railway track parallel to the access road. 3.Ave 24 would be the only access to this site from Hwy 43.	No	No	Railway track parallel to Hwy 43	40% from NB and 60% from SB
4	MUSE LLC	Located in front of Meadows Field Airport, Bakersfield; Surrounded between Airport drive, Boughton Drive and Skyway drive.	Connected to Airport Dr, Boughton Dr and Skyway Dr. Access from Airport Dr to Golden State Hwy 99.	Interchanges: 7th Std Rd and Hwy 99; Norris Rd and Hwy 99	7th Std Rd is having 1 lane in either direction. Norris Rd has two lanes in either direction.	1. Airport drive is the only access from the site to 7th standard road and Norris road. So Airport drive will be experiencing more traffic. 2. There is a good access from Hwy 99 to the site from Olive Dr.and 7th standard road.And Partial access from Norris Rd. 7th Satandard Road is connected to Hwy 65.	Yes	Yes	Railway track parallel to Golden State Hwy	40% from NB and 60% from SB
5	Kern Council of Governments (in City of Wasco)	Located in City of Wasco, on SR-46 and J Street; Approximately 6.5 miles from the SR-99/SR-46 Interchange	Connected to Poso Ave, 6th St and J St. Access from J St to Hwy 46.	Intersections: Poso Ave & Hwy 43; Jst & Hwy 46, 6th St & Hwy 43	J St, 6th St, Poso Ave have one lane in either direction.	major highways 43 and 46 are one lane in each direction, but there is a left turn pocket on the highways to get into these routes. If this site is considered, Poso and 6th St would have to be paved.	Yes	Yes	Railway track parallel to Hwy 43	50% from NB and 50% from SB
6	Kern Council of Governments (in City of Shafter)	Located in City of Shafter, on Santa Fe Way, bordered by the BSNF Railway to the west, the Internatonal Trade and Transporttaion Center to the south on 7th Standard Rd and Burbank St to the north.	Connected to Burbank St, Driver Rd, Winchester St, Mendota St and Weidanbach St. Access from all these streets and roads to Santa Fe Way.	Intersections: Burbank St & Santa Fe Way; 7th Std rd & Santa Fe Way	Burbank St and 7th Std Rd have one lane in either direction	1. There is a railway track running parallel to the Santa Fe Way. Also, no separate left turn lane on Santa Fe Way makes it difficult to find a gap for left turning vehicles. 2) Driver road has no access to a major road or a highway for a long distance.	No	No	Railway track parallel to Santa Fe Way	40% from NB and 60% from SB
7	King County Economic Development Corporation	Located southeast of the city of Hanford; Site is bounded by Hwy 43 to the west, Houston Ave to the north, the proposed Highspeed Rail corridor to the east and Idaho Ave to the south.	Connected to Idaho Ave, Iona Ave, Houston Ave and Central Valley Hwy 43.	Intersections: Houston Ave& Hwy 43; Iona Ave & Hwy 43; Idaho Ave & Hwy 43	Houston Ave, Iona Ave and Idaho Ave have one lane in either direction	1. Access routes from Houston ave, Iona ave and Idaho ave to Hhwy 43. There may be chances of increase in traffic on Hwy 43 as it is having only one in either direction (since all of these access routes are one intersection apart).	Yes (access is good but would increase traffic on 43)	Yes	Proposed high speed rail corridor to the east of this site	50% from NB and 50% from SB
8	County of Fresno	Located on south edge of the City of Fresno. Site is bounded on the north by Hwy 99; on the south by Adams Ave; on the east by the Burlington northern Santa Fe Railroad right-of-way; on the west by Cedar Ave.	Connected to Adams Ave, Clayton Ave, Lincoln Ave, Jefferson Ave, American Ave, Malaga Ave, Central Ave and Cedar Ave. Access from Cedar Ave to Fwy 99.	Interchanges: Central Ave & Hwy 99; Adams Ave & Hwy 99; American Ave & Hwy 99	Central Ave, American Ave and Adams Ave have one lane in either direction	1. Many small access routes to the site. 2) There is an access from Hwy 99 to the site through Central Ave, American Ave, Adams Ave, Clayton Ave.	Yes	Yes	Railway track parallel to Cedar Ave	60% from NB and 40% from SB

Appendix H
Mitigation Synchro Output

FRESNO EXISTING PLUS PROJECT CONDITIONS - MITIGATED

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	31	7	83	326	550	0	0	318	105
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.70	0.70	0.70	0.76	0.76	0.76	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	44	10	119	429	724	0	0	370	122
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								284			1117	
pX, platoon unblocked												
vC, conflicting volume	1774	2012	246	1766	2073	362	492			724		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1774	2012	246	1766	2073	362	492			724		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	0	69	81	60			100		
cM capacity (veh/h)	23	35	754	36	32	635	1068			875		

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	44	129	429	362	362	247	245
Volume Left	44	0	429	0	0	0	0
Volume Right	0	119	0	0	0	0	122
cSH	36	257	1068	1700	1700	1700	1700
Volume to Capacity	1.21	0.50	0.40	0.21	0.21	0.15	0.14
Queue Length 95th (ft)	115	65	49	0	0	0	0
Control Delay (s)	388.9	32.3	10.6	0.0	0.0	0.0	0.0
Lane LOS	F	D	B				
Approach Delay (s)	123.7		4.0			0.0	
Approach LOS	F						

Intersection Summary				
Average Delay	14.3			
Intersection Capacity Utilization	62.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	23	2	69	275	431	0	0	474	408
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.59	0.59	0.59	0.94	0.94	0.94	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	0	39	3	117	293	459	0	0	533	458
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								284			1117	
pX, platoon unblocked												
vC, conflicting volume	1695	1805	496	1310	2035	229	991			459		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1695	1805	496	1310	2035	229	991			459		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	50	90	85	58			100		
cM capacity (veh/h)	32	45	520	78	33	773	693			1099		

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	39	120	293	229	229	355	636
Volume Left	39	0	293	0	0	0	0
Volume Right	0	117	0	0	0	0	458
cSH	78	471	693	1700	1700	1700	1700
Volume to Capacity	0.50	0.26	0.42	0.13	0.13	0.21	0.37
Queue Length 95th (ft)	52	25	53	0	0	0	0
Control Delay (s)	90.0	15.2	13.9	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	33.5		5.4			0.0	
Approach LOS	D						

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	62.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	394	522	332	531	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1	4.1	4.1		
Lane Util. Factor	1.00	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1947	3893	3893	1742		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1947	3893	3893	1742		
Peak-hour factor, PHF	0.84	0.84	0.79	0.79	0.92	0.92
Adj. Flow (vph)	469	621	420	672	0	0
RTOR Reduction (vph)	0	0	0	459	0	0
Lane Group Flow (vph)	469	621	420	213	0	0
Turn Type	Prot			Perm		
Protected Phases	3	8	4			
Permitted Phases				4		
Actuated Green, G (s)	11.4	35.3	20.2	20.2		
Effective Green, g (s)	11.4	35.3	20.2	20.2		
Actuated g/C Ratio	0.18	0.55	0.32	0.32		
Clearance Time (s)	3.7	4.1	4.1	4.1		
Vehicle Extension (s)	8.0	0.2	4.1	4.1		
Lane Grp Cap (vph)	348	2154	1233	552		
v/s Ratio Prot	c0.24	0.16	0.11			
v/s Ratio Perm				c0.12		
v/c Ratio	1.35	0.29	0.34	0.39		
Uniform Delay, d1	26.2	7.6	16.7	17.0		
Progression Factor	1.00	1.00	1.20	3.10		
Incremental Delay, d2	174.4	0.0	0.2	0.6		
Delay (s)	200.6	7.6	20.2	53.2		
Level of Service	F	A	C	D		
Approach Delay (s)		90.7	40.5		0.0	
Approach LOS		F	D		A	

Intersection Summary

HCM Average Control Delay	65.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	32.2
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	690	757	263	520	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1	4.1	4.1		
Lane Util. Factor	1.00	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1947	3893	3893	1742		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1947	3893	3893	1742		
Peak-hour factor, PHF	0.86	0.86	0.89	0.89	0.92	0.92
Adj. Flow (vph)	802	880	296	584	0	0
RTOR Reduction (vph)	0	0	0	429	0	0
Lane Group Flow (vph)	802	880	296	155	0	0
Turn Type	Prot			Perm		
Protected Phases	3	8	4			
Permitted Phases				4		
Actuated Green, G (s)	11.4	31.2	16.1	16.1		
Effective Green, g (s)	11.4	31.2	16.1	16.1		
Actuated g/C Ratio	0.19	0.52	0.27	0.27		
Clearance Time (s)	3.7	4.1	4.1	4.1		
Vehicle Extension (s)	8.0	0.2	4.1	4.1		
Lane Grp Cap (vph)	367	2008	1036	464		
v/s Ratio Prot	c0.41	c0.23	0.08			
v/s Ratio Perm				0.09		
v/c Ratio	2.19	0.44	0.29	0.33		
Uniform Delay, d1	24.6	9.2	17.6	17.9		
Progression Factor	1.00	1.00	1.18	2.79		
Incremental Delay, d2	542.3	0.1	0.2	0.6		
Delay (s)	566.8	9.2	21.0	50.5		
Level of Service	F	A	C	D		
Approach Delay (s)		275.1	40.5		0.0	
Approach LOS		F	D		A	

Intersection Summary			
HCM Average Control Delay	194.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	28.9
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL
Lane Configurations												
Volume (vph)	0	11	4	10	258	1	9	65	0	9	3	776
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6	4.6				4.6	4.6	4.2	4.6
Lane Util. Factor	1.00			0.95	0.95				0.95	1.00	1.00	0.97
Frt	0.86			0.87	0.85				1.00	0.85	0.86	0.95
Flt Protected	1.00			1.00	1.00				0.95	1.00	1.00	0.97
Satd. Flow (prot)	1611			1529	1504				3362	1583	1611	3320
Flt Permitted	1.00			0.99	1.00				0.95	1.00	1.00	0.46
Satd. Flow (perm)	1611			1522	1504				3362	1583	1611	1561
Peak-hour factor, PHF	0.84	0.84	0.83	0.83	0.83	0.83	0.86	0.86	0.86	0.86	0.75	0.71
Adj. Flow (vph)	0	13	5	12	311	1	10	76	0	10	4	1093
RTOR Reduction (vph)	10	0	0	0	0	0	0	0	0	9	4	0
Lane Group Flow (vph)	3	0	0	166	163	0	0	0	86	1	0	1652
Turn Type			Perm		Perm		Perm	Perm		Perm	custom	
Protected Phases	6			6					4		8	5
Permitted Phases			6		6		4	4		4		2
Actuated Green, G (s)	13.7			13.7	13.7				6.5	6.5	6.9	26.6
Effective Green, g (s)	13.7			13.7	13.7				6.5	6.5	6.9	26.6
Actuated g/C Ratio	0.23			0.23	0.23				0.11	0.11	0.11	0.44
Clearance Time (s)	4.6			4.6	4.6				4.6	4.6	4.2	4.6
Vehicle Extension (s)	5.0			5.0	5.0				4.0	4.0	2.0	5.0
Lane Grp Cap (vph)	364			344	340				361	170	183	1457
v/s Ratio Prot	0.00										0.00	c0.50
v/s Ratio Perm				c0.11	0.11				0.03	0.00		
v/c Ratio	0.01			0.48	0.48				0.24	0.01	0.00	1.13
Uniform Delay, d1	18.2			20.4	20.4				24.8	24.2	23.8	17.0
Progression Factor	1.00			1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0			2.2	2.2				0.5	0.0	0.0	69.3
Delay (s)	18.2			22.6	22.6				25.2	24.2	23.8	86.3
Level of Service	B			C	C				C	C	C	F
Approach Delay (s)	18.2			22.6					25.1			86.3
Approach LOS	B			C					C			F

Intersection Summary

HCM Average Control Delay	73.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	13.8
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SER	SER2
Lane Configurations		
Volume (vph)	396	1
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.71	0.71
Adj. Flow (vph)	558	1
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		
Intersection Summary		

Movement	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL2	SEL
Lane Configurations												
Volume (vph)	0	9	7	522	2	4	302	0	19	6	1	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6		4.6	4.6				4.6	4.6	4.2		4.6
Lane Util. Factor	1.00		0.95	0.95				0.95	1.00	1.00		0.97
Frt	0.86		0.85	0.85				1.00	0.85	0.86		0.98
Flt Protected	1.00		1.00	1.00				0.95	1.00	1.00		0.96
Satd. Flow (prot)	1611		1511	1504				3362	1583	1611		3394
Flt Permitted	1.00		1.00	1.00				0.95	1.00	1.00		0.95
Satd. Flow (perm)	1611		1511	1504				3362	1583	1611		3381
Peak-hour factor, PHF	0.85	0.85	0.78	0.78	0.78	0.71	0.71	0.71	0.71	0.50	0.95	0.95
Adj. Flow (vph)	0	11	9	669	3	6	425	0	27	12	1	537
RTOR Reduction (vph)	8	0	0	1	0	0	0	0	23	10	0	0
Lane Group Flow (vph)	3	0	344	336	0	0	0	431	4	2	0	622
Turn Type				custom		Perm	Perm		Perm	custom	Perm	
Protected Phases	6		6	2				4		8		5
Permitted Phases				6		4	4		4		5	2
Actuated Green, G (s)	21.6		21.6	34.0				12.0	12.0	12.4		30.4
Effective Green, g (s)	21.6		21.6	34.0				12.0	12.0	12.4		30.4
Actuated g/C Ratio	0.26		0.26	0.41				0.15	0.15	0.15		0.37
Clearance Time (s)	4.6		4.6	4.6				4.6	4.6	4.2		4.6
Vehicle Extension (s)	5.0		5.0	5.0				4.0	4.0	2.0		5.0
Lane Grp Cap (vph)	422		396	621				490	231	242		1250
v/s Ratio Prot	0.00		c0.23	c0.08						0.00		c0.11
v/s Ratio Perm				0.14				0.13	0.00			0.07
v/c Ratio	0.01		0.87	0.54				1.67dl	0.02	0.01		0.50
Uniform Delay, d1	22.5		29.0	18.3				34.5	30.1	29.8		23.1
Progression Factor	1.00		1.00	1.00				1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0		19.3	1.7				16.8	0.0	0.0		0.7
Delay (s)	22.5		48.4	20.0				51.3	30.2	29.8		23.7
Level of Service	C		D	C				D	C	C		C
Approach Delay (s)	22.5		34.3					50.0				23.7
Approach LOS	C		C					D				C

Intersection Summary

HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	18.4
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

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

Movement	SER	SER2
Lane Configurations		
Volume (vph)	79	1
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	83	1
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		
Intersection Summary		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	322	710	5	72	0	0	0	0	3	628	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frt		0.91		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1690		1770	1863						3538	1583
Flt Permitted		1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)		1690		1770	1863						3538	1583
Peak-hour factor, PHF	0.82	0.82	0.82	0.84	0.84	0.84	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	0	393	866	6	86	0	0	0	0	4	757	134
RTOR Reduction (vph)	0	75	0	0	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	1184	0	6	86	0	0	0	0	0	761	48
Turn Type				Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases												6
Actuated Green, G (s)		32.1		1.0	36.8						25.8	25.8
Effective Green, g (s)		32.1		1.0	36.8						25.8	25.8
Actuated g/C Ratio		0.45		0.01	0.51						0.36	0.36
Clearance Time (s)		4.2		3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9		2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		757		25	956						1273	570
v/s Ratio Prot		c0.70		c0.00	0.05						c0.22	
v/s Ratio Perm												0.03
v/c Ratio		1.56		0.24	0.09						0.60	0.08
Uniform Delay, d1		19.8		35.0	8.9						18.7	15.2
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		260.2		1.8	0.1						1.2	0.1
Delay (s)		280.0		36.8	9.0						19.9	15.3
Level of Service		F		D	A						B	B
Approach Delay (s)		280.0			10.8			0.0			19.2	
Approach LOS		F			B			A			B	

Intersection Summary

HCM Average Control Delay	165.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	12.8
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	194	313	13	121	0	0	0	0	3	691	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frt		0.92		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1708		1770	1863						3539	1583
Flt Permitted		1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)		1708		1770	1863						3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.74	0.74	0.74	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	216	348	18	164	0	0	0	0	3	803	186
RTOR Reduction (vph)	0	55	0	0	0	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	509	0	18	164	0	0	0	0	0	806	74
Turn Type				Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases												6
Actuated Green, G (s)		26.1		1.1	30.9						26.5	26.5
Effective Green, g (s)		26.1		1.1	30.9						26.5	26.5
Actuated g/C Ratio		0.39		0.02	0.46						0.40	0.40
Clearance Time (s)		4.2		3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9		2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		670		29	866						1410	631
v/s Ratio Prot		c0.30		c0.01	0.09						c0.23	
v/s Ratio Perm												0.05
v/c Ratio		0.76		0.62	0.19						0.57	0.12
Uniform Delay, d1		17.5		32.5	10.4						15.6	12.6
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		5.9		26.1	0.2						0.9	0.2
Delay (s)		23.4		58.6	10.6						16.5	12.8
Level of Service		C		E	B						B	B
Approach Delay (s)		23.4			15.4			0.0			15.8	
Approach LOS		C			B			A			B	

Intersection Summary

HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	12.8
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HANFORD EXISTING PLUS PROJECT CONDITIONS - MITIGATED

HCM Signalized Intersection Capacity Analysis
4: SR 198 & 7th Ave

1/30/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	569	7	8	828	11	6	12	8	9	10	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	1859		1770	1859			1767			1645	
Flt Permitted	0.15	1.00		0.33	1.00			0.94			0.98	
Satd. Flow (perm)	283	1859		618	1859			1672			1615	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.86	0.86	0.86	0.45	0.45	0.45
Adj. Flow (vph)	111	654	8	9	952	13	7	14	9	20	22	222
RTOR Reduction (vph)	0	1	0	0	1	0	0	7	0	0	114	0
Lane Group Flow (vph)	111	661	0	9	964	0	0	23	0	0	150	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.3	33.3		33.3	33.3			10.2			10.2	
Effective Green, g (s)	33.3	33.3		33.3	33.3			10.2			10.2	
Actuated g/C Ratio	0.65	0.65		0.65	0.65			0.20			0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	183	1202		400	1202			331			320	
v/s Ratio Prot		0.36			c0.52							
v/s Ratio Perm	0.39			0.01				0.01			c0.09	
v/c Ratio	0.61	0.55		0.02	0.80			0.07			0.47	
Uniform Delay, d1	5.3	5.0		3.3	6.7			16.8			18.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.6	0.5		0.0	4.0			0.1			1.1	
Delay (s)	10.9	5.5		3.3	10.6			16.9			19.3	
Level of Service	B	A		A	B			B			B	
Approach Delay (s)		6.3			10.6			16.9			19.3	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: SR 198 & 7th Ave

1/30/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	989	13	5	786	1	7	3	2	4	3	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.98			0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	1859		1770	1862			1773			1664	
Flt Permitted	0.22	1.00		0.14	1.00			0.82			0.96	
Satd. Flow (perm)	414	1859		259	1862			1491			1603	
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.46	0.46	0.46	0.65	0.65	0.65
Adj. Flow (vph)	39	1075	14	6	925	1	15	7	4	6	5	32
RTOR Reduction (vph)	0	1	0	0	0	0	0	3	0	0	28	0
Lane Group Flow (vph)	39	1088	0	6	926	0	0	23	0	0	15	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.2	36.2		36.2	36.2			6.4			6.4	
Effective Green, g (s)	36.2	36.2		36.2	36.2			6.4			6.4	
Actuated g/C Ratio	0.72	0.72		0.72	0.72			0.13			0.13	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	296	1330		185	1332			189			203	
v/s Ratio Prot		c0.59			0.50							
v/s Ratio Perm	0.09			0.02				c0.02			0.01	
v/c Ratio	0.13	0.82		0.03	0.70			0.12			0.07	
Uniform Delay, d1	2.3	4.9		2.1	4.1			19.6			19.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	4.0		0.1	1.6			0.3			0.2	
Delay (s)	2.5	9.0		2.2	5.7			19.9			19.6	
Level of Service	A	A		A	A			B			B	
Approach Delay (s)		8.8			5.7			19.9			19.6	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	556	4	4	791	4	6	5	6	4	8	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.95			0.89	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1770	1861		1770	1861			1741			1648	
Flt Permitted	0.20	1.00		0.34	1.00			0.87			0.98	
Satd. Flow (perm)	375	1861		628	1861			1538			1623	
Peak-hour factor, PHF	0.85	0.85	0.85	0.91	0.91	0.91	0.44	0.44	0.44	0.71	0.71	0.71
Adj. Flow (vph)	35	654	5	4	869	4	14	11	14	6	11	87
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	72	0
Lane Group Flow (vph)	35	659	0	4	873	0	0	27	0	0	32	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.4	24.4		24.4	24.4			6.8			6.8	
Effective Green, g (s)	24.4	24.4		24.4	24.4			6.8			6.8	
Actuated g/C Ratio	0.62	0.62		0.62	0.62			0.17			0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	233	1158		391	1158			267			282	
v/s Ratio Prot		0.35			c0.47							
v/s Ratio Perm	0.09			0.01				0.02			c0.02	
v/c Ratio	0.15	0.57		0.01	0.75			0.10			0.11	
Uniform Delay, d1	3.1	4.3		2.8	5.3			13.6			13.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.6		0.0	2.8			0.2			0.2	
Delay (s)	3.4	5.0		2.8	8.1			13.8			13.8	
Level of Service	A	A		A	A			B			B	
Approach Delay (s)		4.9			8.1			13.8			13.8	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	933	9	3	703	10	0	10	4	2	3	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1860		1770	1859			1784			1630	
Flt Permitted	0.21	1.00		0.17	1.00			1.00			0.99	
Satd. Flow (perm)	394	1860		323	1859			1784			1616	
Peak-hour factor, PHF	0.97	0.97	0.97	0.79	0.79	0.79	0.88	0.88	0.88	0.69	0.69	0.69
Adj. Flow (vph)	105	962	9	4	890	13	0	11	5	3	4	74
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	63	0
Lane Group Flow (vph)	105	971	0	4	902	0	0	12	0	0	18	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.2	29.2		29.2	29.2			6.4			6.4	
Effective Green, g (s)	29.2	29.2		29.2	29.2			6.4			6.4	
Actuated g/C Ratio	0.67	0.67		0.67	0.67			0.15			0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	264	1246		216	1245			262			237	
v/s Ratio Prot		c0.52			0.49			0.01				
v/s Ratio Perm	0.27			0.01							c0.01	
v/c Ratio	0.40	0.78		0.02	0.72			0.04			0.08	
Uniform Delay, d1	3.2	5.0		2.4	4.6			16.0			16.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	3.1		0.0	2.1			0.1			0.1	
Delay (s)	4.2	8.1		2.4	6.7			16.0			16.2	
Level of Service	A	A		A	A			B			B	
Approach Delay (s)		7.7			6.7			16.0			16.2	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	4	539	6	5	780	4	6	3	3	2	7	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.97			0.91	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1859			1861			1756			1689	
Flt Permitted		0.99			1.00			0.85			0.98	
Satd. Flow (perm)		1850			1857			1530			1660	
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.50	0.50	0.50	0.65	0.65	0.65
Adj. Flow (vph)	5	612	7	5	857	4	12	6	6	3	11	28
RTOR Reduction (vph)	0	1	0	0	0	0	0	5	0	0	23	0
Lane Group Flow (vph)	0	623	0	0	866	0	0	19	0	0	19	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.9			23.9			6.4			6.4	
Effective Green, g (s)		23.9			23.9			6.4			6.4	
Actuated g/C Ratio		0.62			0.62			0.17			0.17	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1154			1159			256			277	
v/s Ratio Prot												
v/s Ratio Perm		0.34			c0.47			c0.01			0.01	
v/c Ratio		0.54			0.75			0.07			0.07	
Uniform Delay, d1		4.1			5.1			13.5			13.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			2.7			0.1			0.1	
Delay (s)		4.6			7.7			13.6			13.5	
Level of Service		A			A			B			B	
Approach Delay (s)		4.6			7.7			13.6			13.5	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	21	888	10	2	690	8	3	7	2	3	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.98			0.91	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1858			1860			1799			1693	
Flt Permitted		0.98			1.00			0.92			0.97	
Satd. Flow (perm)		1818			1856			1678			1646	
Peak-hour factor, PHF	0.95	0.95	0.95	0.79	0.79	0.79	0.63	0.63	0.63	0.57	0.57	0.57
Adj. Flow (vph)	22	935	11	3	873	10	5	11	3	5	11	28
RTOR Reduction (vph)	0	1	0	0	1	0	0	3	0	0	24	0
Lane Group Flow (vph)	0	967	0	0	885	0	0	16	0	0	20	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		29.9			29.9			6.4			6.4	
Effective Green, g (s)		29.9			29.9			6.4			6.4	
Actuated g/C Ratio		0.67			0.67			0.14			0.14	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1227			1253			242			238	
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.48			0.01			c0.01	
v/c Ratio		0.79			0.71			0.07			0.08	
Uniform Delay, d1		5.0			4.5			16.4			16.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.4			1.8			0.1			0.2	
Delay (s)		8.4			6.3			16.5			16.6	
Level of Service		A			A			B			B	
Approach Delay (s)		8.4			6.3			16.5			16.6	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	24	66	107	18	20	65	231	189	18	471	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.98		1.00	0.93		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1692			1763		1770	1737		1770	1855	
Flt Permitted		0.94			0.77		0.38	1.00		0.44	1.00	
Satd. Flow (perm)		1601			1416		709	1737		824	1855	
Peak-hour factor, PHF	0.81	0.81	0.81	0.89	0.89	0.89	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	17	30	81	120	20	22	75	266	217	21	541	16
RTOR Reduction (vph)	0	63	0	0	17	0	0	57	0	0	2	0
Lane Group Flow (vph)	0	65	0	0	145	0	75	426	0	21	555	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.4			7.4		17.6	17.6		17.6	17.6	
Effective Green, g (s)		7.4			7.4		17.6	17.6		17.6	17.6	
Actuated g/C Ratio		0.22			0.22		0.53	0.53		0.53	0.53	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		359			318		378	926		439	989	
v/s Ratio Prot								0.25			c0.30	
v/s Ratio Perm		0.04			c0.10		0.11			0.03		
v/c Ratio		0.18			0.46		0.20	0.46		0.05	0.56	
Uniform Delay, d1		10.4			11.1		4.0	4.8		3.7	5.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			1.0		0.3	0.4		0.0	0.7	
Delay (s)		10.6			12.1		4.3	5.1		3.7	5.9	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		10.6			12.1			5.0			5.8	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	33.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	18	71	175	27	39	96	469	112	13	235	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.97		1.00	0.98	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1688			1758		1770	1809		1770	1824	
Flt Permitted		0.90			0.76		0.54	1.00		0.28	1.00	
Satd. Flow (perm)		1531			1381		1004	1809		518	1824	
Peak-hour factor, PHF	0.82	0.82	0.82	0.76	0.76	0.76	0.94	0.94	0.94	0.82	0.82	0.82
Adj. Flow (vph)	32	22	87	230	36	51	102	499	119	16	287	46
RTOR Reduction (vph)	0	59	0	0	16	0	0	19	0	0	12	0
Lane Group Flow (vph)	0	82	0	0	301	0	102	599	0	16	321	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.8			12.8		19.4	19.4		19.4	19.4	
Effective Green, g (s)		12.8			12.8		19.4	19.4		19.4	19.4	
Actuated g/C Ratio		0.32			0.32		0.48	0.48		0.48	0.48	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		487			440		485	873		250	880	
v/s Ratio Prot								c0.33			0.18	
v/s Ratio Perm		0.05			c0.22		0.10			0.03		
v/c Ratio		0.17			0.68		0.21	0.69		0.06	0.36	
Uniform Delay, d1		9.9			11.9		6.0	8.0		5.6	6.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			4.4		0.2	2.3		0.1	0.3	
Delay (s)		10.0			16.3		6.2	10.3		5.7	6.8	
Level of Service		B			B		A	B		A	A	
Approach Delay (s)		10.0			16.3			9.7			6.7	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	40.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

BAKERSFIELD EXISTING PLUS PROJECT CONDITIONS - MITIGATED

HCM Signalized Intersection Capacity Analysis
1: SR-58 EB Off Ramp & S Union Ave

1/29/2011

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1255	348	0	2208	1340	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2			4.9	4.9	
Lane Util. Factor	0.97			0.91	0.91	
Frt	0.97			1.00	0.97	
Flt Protected	0.96			1.00	1.00	
Satd. Flow (prot)	3364			5085	4921	
Flt Permitted	0.96			1.00	1.00	
Satd. Flow (perm)	3364			5085	4921	
Peak-hour factor, PHF	0.83	0.83	0.85	0.85	0.85	0.85
Adj. Flow (vph)	1512	419	0	2598	1576	433
RTOR Reduction (vph)	23	0	0	0	66	0
Lane Group Flow (vph)	1908	0	0	2598	1943	0
Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	20.8			45.1	45.1	
Effective Green, g (s)	20.8			45.1	45.1	
Actuated g/C Ratio	0.28			0.60	0.60	
Clearance Time (s)	4.2			4.9	4.9	
Vehicle Extension (s)	3.0			4.0	4.0	
Lane Grp Cap (vph)	933			3058	2959	
v/s Ratio Prot	c0.57			c0.51	0.39	
v/s Ratio Perm						
v/c Ratio	2.04			0.85	0.66	
Uniform Delay, d1	27.1			12.2	9.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	473.9			2.5	0.6	
Delay (s)	501.0			14.7	10.4	
Level of Service	F			B	B	
Approach Delay (s)	501.0			14.7	10.4	
Approach LOS	F			B	B	

Intersection Summary			
HCM Average Control Delay	157.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: SR-58 EB Off Ramp & S Union Ave

1/29/2011

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	371	159	0	1110	1133	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2			4.9	4.9	
Lane Util. Factor	0.97			0.91	0.91	
Frt	0.96			1.00	0.98	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	3335			5085	4962	
Flt Permitted	0.97			1.00	1.00	
Satd. Flow (perm)	3335			5085	4962	
Peak-hour factor, PHF	0.81	0.81	0.83	0.83	0.75	0.75
Adj. Flow (vph)	458	196	0	1337	1511	291
RTOR Reduction (vph)	28	0	0	0	37	0
Lane Group Flow (vph)	626	0	0	1337	1765	0
Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	17.5			42.6	42.6	
Effective Green, g (s)	17.5			42.6	42.6	
Actuated g/C Ratio	0.25			0.62	0.62	
Clearance Time (s)	4.2			4.9	4.9	
Vehicle Extension (s)	3.0			4.0	4.0	
Lane Grp Cap (vph)	843			3130	3055	
v/s Ratio Prot	c0.19			0.26	c0.36	
v/s Ratio Perm						
v/c Ratio	0.74			0.43	0.58	
Uniform Delay, d1	23.8			6.9	7.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	3.6			0.1	0.3	
Delay (s)	27.4			7.1	8.3	
Level of Service	C			A	A	
Approach Delay (s)	27.4			7.1	8.3	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	9.1
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: California Ave & parking lot

1/29/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1308	452	0	1067	12	479	16	705	17	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91			0.91	1.00	0.95	0.91	0.95	1.00		1.00
Frt	1.00	0.96			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	4889			5085	1583	1681	1479	1504	1770		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.58		1.00
Satd. Flow (perm)	1770	4889			5085	1583	1681	1479	1504	1080		1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.89	0.89	0.89	0.76	0.76	0.76	0.75	0.75	0.75
Adj. Flow (vph)	12	1521	526	0	1199	13	630	21	928	23	0	37
RTOR Reduction (vph)	0	42	0	0	0	3	0	116	251	0	0	35
Lane Group Flow (vph)	12	2005	0	0	1199	10	548	405	259	23	0	2
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases									3	4		4
Actuated Green, G (s)	1.2	58.2			52.9	52.9	25.5	25.5	25.5	6.9		6.9
Effective Green, g (s)	1.2	58.2			52.9	52.9	25.5	25.5	25.5	6.9		6.9
Actuated g/C Ratio	0.01	0.56			0.51	0.51	0.25	0.25	0.25	0.07		0.07
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	20	2741			2591	807	413	363	369	72		105
v/s Ratio Prot	0.01	c0.41			0.24	0.01	c0.33	0.27				
v/s Ratio Perm									0.17	c0.02		0.00
v/c Ratio	0.60	0.73			0.46	0.01	1.33	1.12	0.70	0.32		0.02
Uniform Delay, d1	51.1	17.0			16.3	12.6	39.2	39.2	35.7	46.2		45.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	30.1	1.3			0.2	0.0	163.1	82.2	7.4	0.9		0.0
Delay (s)	81.1	18.3			16.5	12.6	202.2	121.3	43.1	47.1		45.3
Level of Service	F	B			B	B	F	F	D	D		D
Approach Delay (s)		18.6			16.5			124.1			46.0	
Approach LOS		B			B			F			D	

Intersection Summary

HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	13.2
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: California Ave & parking lot

1/29/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1168	686	0	1944	31	301	9	356	18	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91			0.91	1.00	0.95	0.91	0.95	1.00		1.00
Frt	1.00	0.94			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	1770	4803			5085	1583	1681	1508	1504	1770		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.65		1.00
Satd. Flow (perm)	1770	4803			5085	1583	1681	1508	1504	1202		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.86	0.86	0.86	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	73	1229	722	0	2260	36	331	10	391	19	0	65
RTOR Reduction (vph)	0	69	0	0	0	6	0	53	181	0	0	61
Lane Group Flow (vph)	73	1882	0	0	2260	30	255	189	54	19	0	4
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases									3	4		4
Actuated Green, G (s)	7.2	56.5			45.2	45.2	22.4	22.4	22.4	6.2		6.2
Effective Green, g (s)	7.2	56.5			45.2	45.2	22.4	22.4	22.4	6.2		6.2
Actuated g/C Ratio	0.07	0.57			0.46	0.46	0.23	0.23	0.23	0.06		0.06
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	130	2761			2338	728	383	344	343	76		100
v/s Ratio Prot	0.04	c0.39			c0.44	0.02	c0.15	0.13				
v/s Ratio Perm									0.04	c0.02		0.00
v/c Ratio	0.56	0.68			0.97	0.04	0.67	0.55	0.16	0.25		0.04
Uniform Delay, d1	44.0	14.6			25.8	14.6	34.5	33.5	30.4	43.8		43.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.3	0.9			11.8	0.0	5.7	3.1	0.4	0.6		0.1
Delay (s)	47.3	15.5			37.6	14.7	40.2	36.6	30.8	44.5		43.3
Level of Service	D	B			D	B	D	D	C	D		D
Approach Delay (s)		16.7			37.3			36.0			43.6	
Approach LOS		B			D			D			D	

Intersection Summary

HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	18.5
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
29: Hayden Ct & Union Ave

2/1/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	0	12	133	0	18	98	1320	104	154	896	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1794		1681	1905	1583	1770	5030		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1794		1681	1905	1583	1770	5030		1770	5085	1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.67	0.67	0.67	0.76	0.76	0.76	0.73	0.73	0.73
Adj. Flow (vph)	232	0	48	199	0	27	126	1737	137	211	1227	190
RTOR Reduction (vph)	0	39	0	0	0	23	0	7	0	0	0	57
Lane Group Flow (vph)	232	9	0	99	100	4	126	1867	0	211	1227	133
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	18.5	18.5		13.9	13.9	13.9	11.6	35.5		15.8	39.7	39.7
Effective Green, g (s)	18.5	18.5		13.9	13.9	13.9	11.6	35.5		15.8	39.7	39.7
Actuated g/C Ratio	0.18	0.18		0.14	0.14	0.14	0.12	0.35		0.16	0.40	0.40
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	327	331		233	264	220	205	1782		279	2015	627
v/s Ratio Prot	c0.13	0.00		c0.06	0.05		0.07	c0.37		c0.12	0.24	
v/s Ratio Perm						0.00						0.08
v/c Ratio	0.71	0.03		0.42	0.38	0.02	0.61	1.05		0.76	0.61	0.21
Uniform Delay, d1	38.3	33.5		39.5	39.2	37.3	42.2	32.4		40.4	24.1	19.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.3	0.1		3.0	2.2	0.1	3.8	35.0		9.9	0.8	0.4
Delay (s)	47.6	33.6		42.5	41.5	37.3	46.0	67.4		50.3	24.9	20.3
Level of Service	D	C		D	D	D	D	E		D	C	C
Approach Delay (s)		45.2			41.4			66.0			27.6	
Approach LOS		D			D			E			C	

Intersection Summary

HCM Average Control Delay	48.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
41: 21st Street & Union Ave

1/29/2011

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	8	71	23	32	19	11	5	49	46	362	854	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.88	
Frt		1.00	0.91		1.00	0.88			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1699		1770	1631			1770	5085	2787	
Flt Permitted		0.69	1.00		0.71	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1291	1699		1325	1631			1770	5085	2787	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.66	0.66	0.66	0.66	0.73	0.73	0.73	0.73
Adj. Flow (vph)	10	90	29	41	29	17	8	74	63	496	1170	23
RTOR Reduction (vph)	0	0	36	0	0	64	0	0	0	0	1	0
Lane Group Flow (vph)	0	100	34	0	29	35	0	0	63	496	1192	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		10.3	10.3		10.3	10.3			6.2	21.1	24.8	
Effective Green, g (s)		10.3	10.3		10.3	10.3			6.2	21.1	24.8	
Actuated g/C Ratio		0.13	0.13		0.13	0.13			0.08	0.26	0.31	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		166	219		171	210			137	1343	865	
v/s Ratio Prot			0.02			0.02			c0.04	c0.10	c0.43	
v/s Ratio Perm		c0.08			0.02							
v/c Ratio		0.60	0.16		0.17	0.16			0.46	0.37	1.38	
Uniform Delay, d1		32.9	30.9		31.0	31.0			35.2	24.0	27.6	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		4.2	0.1		0.2	0.1			0.9	0.6	177.5	
Delay (s)		37.0	31.1		31.2	31.1			36.1	24.6	205.1	
Level of Service		D	C		C	C			D	C	F	
Approach Delay (s)			34.6			31.1				147.9		
Approach LOS			C			C				F		

Intersection Summary			
HCM Average Control Delay	88.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	14.5
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	32	4	310	5	1	832	31	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1			4.7		
Lane Util. Factor		1.00	0.91			0.94		
Frt		1.00	1.00			0.99		
Flt Protected		0.95	1.00			0.95		
Satd. Flow (prot)		1770	5072			4977		
Flt Permitted		0.95	1.00			0.86		
Satd. Flow (perm)		1770	5072			4474		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.81	0.81	0.81	0.81
Adj. Flow (vph)	36	4	344	6	1	1027	38	17
RTOR Reduction (vph)	0	0	2	0	0	1	0	0
Lane Group Flow (vph)	0	40	348	0	0	1082	0	0
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			7		
Permitted Phases					7			
Actuated Green, G (s)		4.1	19.0			24.8		
Effective Green, g (s)		4.1	19.0			24.8		
Actuated g/C Ratio		0.05	0.24			0.31		
Clearance Time (s)		4.7	5.1			4.7		
Vehicle Extension (s)		2.0	6.8			8.0		
Lane Grp Cap (vph)		91	1206			1389		
v/s Ratio Prot		0.02	0.07					
v/s Ratio Perm						0.24		
v/c Ratio		0.44	0.29			0.78		
Uniform Delay, d1		36.8	24.9			25.1		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		1.2	0.5			4.1		
Delay (s)		38.0	25.4			29.2		
Level of Service		D	C			C		
Approach Delay (s)			26.7			29.2		
Approach LOS			C			C		

Intersection Summary

FRESNO HEAVY MAINTENANCE EXISTING PLUS PROJECT CONDITIONS - MITIGATED

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Volume (vph)	0	454	142	0	413	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1863	1863		1745	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1863	1863		1745	
Peak-hour factor, PHF	0.82	0.82	0.66	0.66	0.84	0.84
Adj. Flow (vph)	0	554	215	0	492	113
RTOR Reduction (vph)	0	0	0	0	17	0
Lane Group Flow (vph)	0	554	215	0	588	0
Turn Type						
Protected Phases		4	8		6	
Permitted Phases						
Actuated Green, G (s)		16.9	16.9		18.5	
Effective Green, g (s)		16.9	16.9		18.5	
Actuated g/C Ratio		0.39	0.39		0.43	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		725	725		744	
v/s Ratio Prot		c0.30	0.12		c0.34	
v/s Ratio Perm						
v/c Ratio		0.76	0.30		0.79	
Uniform Delay, d1		11.5	9.1		10.8	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		4.8	0.2		5.7	
Delay (s)		16.3	9.4		16.5	
Level of Service		B	A		B	
Approach Delay (s)		16.3	9.4		16.5	
Approach LOS		B	A		B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Volume (vph)	0	385	152	0	244	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.96	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1863	1863		1731	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1863	1863		1731	
Peak-hour factor, PHF	0.77	0.77	0.75	0.75	0.99	0.99
Adj. Flow (vph)	0	500	203	0	246	92
RTOR Reduction (vph)	0	0	0	0	37	0
Lane Group Flow (vph)	0	500	203	0	301	0
Turn Type						
Protected Phases		4	8		6	
Permitted Phases						
Actuated Green, G (s)		12.9	12.9		10.6	
Effective Green, g (s)		12.9	12.9		10.6	
Actuated g/C Ratio		0.41	0.41		0.34	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		763	763		582	
v/s Ratio Prot		c0.27	0.11		c0.17	
v/s Ratio Perm						
v/c Ratio		0.66	0.27		0.52	
Uniform Delay, d1		7.5	6.2		8.4	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		2.0	0.2		0.8	
Delay (s)		9.5	6.4		9.2	
Level of Service		A	A		A	
Approach Delay (s)		9.5	6.4		9.2	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	31.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	0	0	3	136	14	422	79	81	19	61	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor			1.00	0.95		1.00	0.95			1.00	1.00
Frt			1.00	0.99		1.00	0.92			1.00	0.85
Flt Protected			0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)			1770	3488		1770	3271			1770	1583
Flt Permitted			0.63	1.00		0.63	1.00			0.95	1.00
Satd. Flow (perm)			1166	3488		1180	3271			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.80	0.80	0.80	0.80	0.80	0.80	0.88	0.88	0.88
Adj. Flow (vph)	0	0	4	170	18	528	99	101	22	69	27
RTOR Reduction (vph)	0	0	0	5	0	0	30	0	0	0	23
Lane Group Flow (vph)	0	0	4	183	0	528	170	0	0	91	4
Turn Type			Perm			Perm			Perm		Perm
Protected Phases				2			6			4	
Permitted Phases			2			6			4		4
Actuated Green, G (s)			34.0	34.0		34.0	34.0			6.4	6.4
Effective Green, g (s)			34.0	34.0		34.0	34.0			6.4	6.4
Actuated g/C Ratio			0.70	0.70		0.70	0.70			0.13	0.13
Clearance Time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)			3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			819	2450		829	2298			234	209
v/s Ratio Prot				0.05			0.05				
v/s Ratio Perm			0.00			c0.45				0.05	0.00
v/c Ratio			0.00	0.07		0.64	0.07			0.39	0.02
Uniform Delay, d1			2.1	2.3		3.9	2.3			19.2	18.3
Progression Factor			1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0	0.0		1.6	0.0			1.1	0.0
Delay (s)			2.2	2.3		5.5	2.3			20.3	18.3
Level of Service			A	A		A	A			C	B
Approach Delay (s)	0.0			2.3			4.6			19.8	
Approach LOS	A			A			A			B	

Intersection Summary

HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	0	0	12	111	6	393	85	82	41	93	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor			1.00	0.95		1.00	0.95			1.00	1.00
Frt			1.00	0.99		1.00	0.93			1.00	0.85
Flt Protected			0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)			1770	3512		1770	3279			1770	1583
Flt Permitted			0.63	1.00		0.67	1.00			0.95	1.00
Satd. Flow (perm)			1171	3512		1241	3279			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.87	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	14	128	7	462	100	96	48	109	112
RTOR Reduction (vph)	0	0	0	3	0	0	37	0	0	0	91
Lane Group Flow (vph)	0	0	14	132	0	462	159	0	0	157	21
Turn Type			Perm			Perm			Perm		Perm
Protected Phases				2			6			4	
Permitted Phases			2			6			4		4
Actuated Green, G (s)			24.5	24.5		24.5	24.5			7.5	7.5
Effective Green, g (s)			24.5	24.5		24.5	24.5			7.5	7.5
Actuated g/C Ratio			0.61	0.61		0.61	0.61			0.19	0.19
Clearance Time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)			3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			717	2151		760	2008			332	297
v/s Ratio Prot				0.04			0.05				
v/s Ratio Perm			0.01			c0.37				0.09	0.01
v/c Ratio			0.02	0.06		0.61	0.08			0.47	0.07
Uniform Delay, d1			3.0	3.1		4.8	3.2			14.5	13.4
Progression Factor			1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0	0.0		1.4	0.0			1.1	0.1
Delay (s)			3.1	3.1		6.2	3.2			15.6	13.5
Level of Service			A	A		A	A			B	B
Approach Delay (s)	0.0			3.1			5.3			14.7	
Approach LOS	A			A			A			B	

Intersection Summary

HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

WASCO HEAVY MAINTENANCE EXISTING PLUS PROJECT CONDITIONS - MITIGATED

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	184	57	18	208	17	43	82	24	18	82	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1770	1797		1770	1842			1796			1798	
Flt Permitted	0.61	1.00		0.52	1.00			0.89			0.95	
Satd. Flow (perm)	1131	1797		967	1842			1617			1715	
Peak-hour factor, PHF	0.68	0.68	0.68	0.92	0.92	0.92	0.93	0.93	0.93	0.83	0.83	0.83
Adj. Flow (vph)	90	271	84	20	226	18	46	88	26	22	99	31
RTOR Reduction (vph)	0	32	0	0	8	0	0	16	0	0	19	0
Lane Group Flow (vph)	90	323	0	20	236	0	0	144	0	0	133	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.3	8.3		8.3	8.3			10.1			10.1	
Effective Green, g (s)	8.3	8.3		8.3	8.3			10.1			10.1	
Actuated g/C Ratio	0.31	0.31		0.31	0.31			0.38			0.38	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	356	565		304	579			619			656	
v/s Ratio Prot		c0.18			0.13							
v/s Ratio Perm	0.08			0.02				c0.09			0.08	
v/c Ratio	0.25	0.57		0.07	0.41			0.23			0.20	
Uniform Delay, d1	6.7	7.6		6.3	7.1			5.5			5.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.4	1.4		0.1	0.5			0.2			0.2	
Delay (s)	7.1	9.0		6.4	7.6			5.7			5.6	
Level of Service	A	A		A	A			A			A	
Approach Delay (s)		8.6			7.5			5.7			5.6	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	26.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	215	45	41	231	18	44	86	22	20	132	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.98			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	1814		1770	1843			1800			1770	
Flt Permitted	0.57	1.00		0.58	1.00			0.86			0.97	
Satd. Flow (perm)	1064	1814		1080	1843			1577			1720	
Peak-hour factor, PHF	0.88	0.88	0.88	0.80	0.80	0.80	0.89	0.89	0.89	0.91	0.91	0.91
Adj. Flow (vph)	65	244	51	51	289	22	49	97	25	22	145	85
RTOR Reduction (vph)	0	22	0	0	8	0	0	15	0	0	45	0
Lane Group Flow (vph)	65	273	0	51	303	0	0	156	0	0	207	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.1	8.1		8.1	8.1			10.8			10.8	
Effective Green, g (s)	8.1	8.1		8.1	8.1			10.8			10.8	
Actuated g/C Ratio	0.30	0.30		0.30	0.30			0.40			0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	320	546		325	555			633			691	
v/s Ratio Prot		0.15			c0.16							
v/s Ratio Perm	0.06			0.05				0.10			c0.12	
v/c Ratio	0.20	0.50		0.16	0.55			0.25			0.30	
Uniform Delay, d1	7.0	7.7		6.9	7.9			5.3			5.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.7		0.2	1.1			0.2			0.2	
Delay (s)	7.3	8.5		7.1	9.0			5.6			5.7	
Level of Service	A	A		A	A			A			A	
Approach Delay (s)		8.3			8.7			5.6			5.7	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	26.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

FRESNO FUTURE PLUS PROJECT
CONDITIONS - MITIGATED

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	19	268	0	0	196	47	480	112	90	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	291	0	0	213	51	522	122	98	0	0	0

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	118	194	142	122	348	393
Volume Left (vph)	21	0	0	0	348	174
Volume Right (vph)	0	0	0	51	0	98
Hadj (s)	0.12	0.03	0.03	-0.26	0.53	0.08
Departure Headway (s)	7.2	7.1	7.2	6.9	6.8	6.3
Degree Utilization, x	0.23	0.38	0.28	0.23	0.65	0.69
Capacity (veh/h)	478	488	480	498	522	555
Control Delay (s)	11.1	13.2	11.8	10.7	20.3	20.9
Approach Delay (s)	12.4		11.3		20.6	
Approach LOS	B		B		C	

Intersection Summary			
Delay	16.8		
HCM Level of Service	C		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	92	275	0	0	495	118	271	61	112	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	299	0	0	538	128	295	66	122	0	0	0

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	200	199	359	308	196	286
Volume Left (vph)	100	0	0	0	196	98
Volume Right (vph)	0	0	0	128	0	122
Hadj (s)	0.28	0.03	0.03	-0.26	0.53	-0.09
Departure Headway (s)	7.5	7.2	6.9	6.6	7.7	7.1
Degree Utilization, x	0.41	0.40	0.69	0.56	0.42	0.57
Capacity (veh/h)	463	479	508	523	446	480
Control Delay (s)	14.5	13.8	22.3	16.5	15.1	17.8
Approach Delay (s)	14.1		19.6		16.7	
Approach LOS	B		C		C	

Intersection Summary			
Delay	17.3		
HCM Level of Service	C		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	115	24	426	386	931	0	0	676	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.89		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3107		1770	3539			3411	
Flt Permitted					0.99		0.27	1.00			1.00	
Satd. Flow (perm)					3107		512	3539			3411	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	125	26	463	420	1012	0	0	735	233
RTOR Reduction (vph)	0	0	0	0	161	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	0	0	0	453	0	420	1012	0	0	938	0
Turn Type				Perm			Perm					
Protected Phases					2			4			8	
Permitted Phases				2			4					
Actuated Green, G (s)					15.9		76.0	76.0			76.0	
Effective Green, g (s)					15.9		76.0	76.0			76.0	
Actuated g/C Ratio					0.16		0.76	0.76			0.76	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					495		390	2692			2595	
v/s Ratio Prot								0.29			0.27	
v/s Ratio Perm					0.15		c0.82					
v/c Ratio					1.11dr		1.08	0.38			0.36	
Uniform Delay, d1					41.3		12.0	4.0			3.9	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					21.6		67.7	0.1			0.1	
Delay (s)					62.9		79.6	4.1			4.0	
Level of Service					E		E	A			A	
Approach Delay (s)		0.0			62.9			26.2			4.0	
Approach LOS		A			E			C			A	

Intersection Summary

HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	300	5	374	314	917	0	0	1330	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.92		1.00	1.00			0.96	
Flt Protected					0.98		0.95	1.00			1.00	
Satd. Flow (prot)					3176		1770	3539			3415	
Flt Permitted					0.98		0.13	1.00			1.00	
Satd. Flow (perm)					3176		240	3539			3415	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	326	5	407	341	997	0	0	1446	443
RTOR Reduction (vph)	0	0	0	0	76	0	0	0	0	0	51	0
Lane Group Flow (vph)	0	0	0	0	662	0	341	997	0	0	1838	0
Turn Type				Perm			Perm					
Protected Phases					2			4			8	
Permitted Phases				2			4					
Actuated Green, G (s)					14.7		31.0	31.0			31.0	
Effective Green, g (s)					14.7		31.0	31.0			31.0	
Actuated g/C Ratio					0.27		0.58	0.58			0.58	
Clearance Time (s)					4.0		4.0	4.0			4.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					869		139	2043			1971	
v/s Ratio Prot								0.28			0.54	
v/s Ratio Perm					0.21		c1.42					
v/c Ratio					0.76		2.45	0.49			0.93	
Uniform Delay, d1					17.9		11.4	6.7			10.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					4.0		675.1	0.2			8.7	
Delay (s)					21.9		686.5	6.9			19.1	
Level of Service					C		F	A			B	
Approach Delay (s)		0.0			21.9			180.1			19.1	
Approach LOS		A			C			F			B	

Intersection Summary

HCM Average Control Delay	73.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.91		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	4	38	49	19	13	190	1156	3	1	814	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frt		0.92			0.98			1.00			0.99	
Flt Protected		0.98			0.97			0.99			1.00	
Satd. Flow (prot)		1683			1769			3513			3520	
Flt Permitted		0.90			0.84			0.67			0.95	
Satd. Flow (perm)		1547			1534			2353			3359	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	4	41	53	21	14	207	1257	3	1	885	33
RTOR Reduction (vph)	0	35	0	0	9	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	33	0	0	79	0	0	1467	0	0	916	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		9.1			9.1			49.6			49.6	
Effective Green, g (s)		9.1			9.1			49.6			49.6	
Actuated g/C Ratio		0.14			0.14			0.74			0.74	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		211			209			1750			2498	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.05			c0.62			0.27	
v/c Ratio		0.15			0.38			0.84			0.37	
Uniform Delay, d1		25.4			26.2			5.8			3.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			1.1			3.7			0.1	
Delay (s)		25.7			27.3			9.5			3.1	
Level of Service		C			C			A			A	
Approach Delay (s)		25.7			27.3			9.5			3.1	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	5	93	250	162	153	274	998	82	6	1238	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frt		0.90			0.96			0.99			1.00	
Flt Protected		0.99			0.98			0.99			1.00	
Satd. Flow (prot)		1663			1756			3472			3526	
Flt Permitted		0.83			0.79			0.50			0.95	
Satd. Flow (perm)		1398			1412			1767			3339	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	5	101	272	176	166	298	1085	89	7	1346	33
RTOR Reduction (vph)	0	32	0	0	17	0	0	6	0	0	2	0
Lane Group Flow (vph)	0	110	0	0	597	0	0	1466	0	0	1384	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		26.0			26.0			46.0			46.0	
Effective Green, g (s)		26.0			26.0			46.0			46.0	
Actuated g/C Ratio		0.32			0.32			0.58			0.58	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		454			459			1016			1920	
v/s Ratio Prot												
v/s Ratio Perm		0.08			c0.42			c0.83			0.41	
v/c Ratio		0.24			1.30			2.33dl			0.72	
Uniform Delay, d1		19.8			27.0			17.0			12.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			150.7			204.9			1.4	
Delay (s)		20.1			177.7			221.9			13.7	
Level of Service		C			F			F			B	
Approach Delay (s)		20.1			177.7			221.9			13.7	
Approach LOS		C			F			F			B	

Intersection Summary

HCM Average Control Delay	126.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.9%	ICU Level of Service	H
Analysis Period (min)	15		

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	216	56	254	522	194	61	706	159	189	543	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.96		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3430		1770	3395		1770	3442		1770	3449	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3430		1770	3395		1770	3442		1770	3449	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	235	61	276	567	211	66	767	173	205	590	121
RTOR Reduction (vph)	0	27	0	0	41	0	0	21	0	0	19	0
Lane Group Flow (vph)	38	269	0	276	737	0	66	919	0	205	692	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.4	17.2		15.4	28.2		8.3	27.4		11.6	30.7	
Effective Green, g (s)	4.4	17.2		15.4	28.2		8.3	27.4		11.6	30.7	
Actuated g/C Ratio	0.05	0.20		0.18	0.32		0.09	0.31		0.13	0.35	
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	3.0	4.8		3.0	4.8		2.0	4.8		2.0	4.8	
Lane Grp Cap (vph)	89	670		310	1088		167	1072		233	1203	
v/s Ratio Prot	0.02	0.08		c0.16	c0.22		0.04	c0.27		c0.12	0.20	
v/s Ratio Perm												
v/c Ratio	0.43	0.40		0.89	0.68		0.40	0.86		0.88	0.58	
Uniform Delay, d1	40.6	30.9		35.5	25.9		37.5	28.5		37.5	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	0.8		25.6	2.1		0.6	7.5		28.4	1.0	
Delay (s)	43.8	31.7		61.1	28.1		38.1	36.0		65.9	24.4	
Level of Service	D	C		E	C		D	D		E	C	
Approach Delay (s)		33.1			36.7			36.1			33.7	
Approach LOS		C			D			D			C	

Intersection Summary

HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	155	495	101	480	506	176	58	862	171	97	707	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1770	3402		1770	3451		1770	3480	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3449		1770	3402		1770	3451		1770	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	538	110	522	550	191	63	937	186	105	768	97
RTOR Reduction (vph)	0	13	0	0	25	0	0	13	0	0	7	0
Lane Group Flow (vph)	168	635	0	522	716	0	63	1110	0	105	858	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	17.0	23.4		37.0	43.4		10.0	42.0		12.0	44.0	
Effective Green, g (s)	17.0	23.4		37.0	43.4		10.0	42.0		12.0	44.0	
Actuated g/C Ratio	0.13	0.18		0.28	0.33		0.08	0.32		0.09	0.34	
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	3.0	4.8		3.0	4.8		2.0	4.8		2.0	4.8	
Lane Grp Cap (vph)	230	617		501	1129		135	1108		162	1171	
v/s Ratio Prot	0.09	c0.18		c0.29	0.21		0.04	c0.32		0.06	c0.25	
v/s Ratio Perm												
v/c Ratio	0.73	1.03		1.04	0.63		0.47	1.00		0.65	0.73	
Uniform Delay, d1	54.7	53.7		46.9	37.0		57.8	44.4		57.4	38.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.3	43.8		51.5	1.6		0.9	27.5		6.5	2.8	
Delay (s)	66.0	97.5		98.4	38.5		58.8	71.9		63.9	41.1	
Level of Service	E	F		F	D		E	E		E	D	
Approach Delay (s)		91.0			63.3			71.2			43.5	
Approach LOS		F			E			E			D	

Intersection Summary

HCM Average Control Delay	66.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.8	Sum of lost time (s)	16.6
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	449	202	240	219	31	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	488	220	261	238	34	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	537			471		
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			708		1239	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			665		1206	305
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			71		73	92
cM capacity (veh/h)			903		123	679

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total	325	382	340	159	85
Volume Left	0	0	261	0	34
Volume Right	0	220	0	0	51
cSH	1700	1700	903	1700	309
Volume to Capacity	0.19	0.22	0.29	0.09	0.27
Queue Length 95th (ft)	0	0	30	0	27
Control Delay (s)	0.0	0.0	8.9	0.0	24.3
Lane LOS			A		C
Approach Delay (s)	0.0		6.1		24.3
Approach LOS					C

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	656	62	39	569	109	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	713	67	42	618	118	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	537			479		
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			780		1141	390
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			551		948	120
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		47	90
cM capacity (veh/h)			920		224	824

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total	475	305	249	412	202
Volume Left	0	0	42	0	118
Volume Right	0	67	0	0	84
cSH	1700	1700	920	1700	382
Volume to Capacity	0.28	0.18	0.05	0.24	0.53
Queue Length 95th (ft)	0	0	4	0	74
Control Delay (s)	0.0	0.0	1.9	0.0	26.3
Lane LOS			A		D
Approach Delay (s)	0.0		0.7		26.3
Approach LOS					D

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	98	100	8	6	114	45	64	807	17	26	170	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.0	4.2		4.0	4.2	4.2
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frt		0.99			0.96		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3436			3388		1770	1857		1770	1863	1583
Flt Permitted		0.75			0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		2636			3208		1770	1857		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	109	9	7	124	49	70	877	18	28	185	146
RTOR Reduction (vph)	0	3	0	0	32	0	0	1	0	0	0	85
Lane Group Flow (vph)	0	222	0	0	148	0	70	894	0	28	185	61
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6								8
Actuated Green, G (s)		30.1			30.1		6.6	39.0		2.9	35.3	35.3
Effective Green, g (s)		30.1			30.1		6.6	39.0		2.9	35.3	35.3
Actuated g/C Ratio		0.36			0.36		0.08	0.46		0.03	0.42	0.42
Clearance Time (s)		4.2			4.2		4.0	4.2		4.0	4.2	4.2
Vehicle Extension (s)		0.2			0.2		3.0	0.2		3.0	0.2	0.2
Lane Grp Cap (vph)		940			1144		138	858		61	779	662
v/s Ratio Prot							c0.04	c0.48		0.02	0.10	
v/s Ratio Perm		c0.08			0.05							0.04
v/c Ratio		0.24			0.13		0.51	1.04		0.46	0.24	0.09
Uniform Delay, d1		19.1			18.3		37.3	22.7		40.0	15.9	14.9
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0			0.0		2.9	42.4		5.4	0.1	0.0
Delay (s)		19.1			18.3		40.3	65.1		45.4	15.9	14.9
Level of Service		B			B		D	E		D	B	B
Approach Delay (s)		19.1			18.3			63.3			17.8	
Approach LOS		B			B			E			B	

Intersection Summary

HCM Average Control Delay	43.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	12.4
Intersection Capacity Utilization	110.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	268	325	162	80	438	48	76	661	44	52	1724	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.0	4.2		4.0	4.2	4.2
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	1.00
Frt		0.97			0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3366			3470		1770	1845		1770	1863	1583
Flt Permitted		0.54			0.53		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1858			1869		1770	1845		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	291	353	176	87	476	52	83	718	48	57	1874	351
RTOR Reduction (vph)	0	17	0	0	5	0	0	2	0	0	0	49
Lane Group Flow (vph)	0	803	0	0	610	0	83	764	0	57	1874	302
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6								8
Actuated Green, G (s)		46.8			46.8		8.0	84.5		7.1	83.6	83.6
Effective Green, g (s)		46.8			46.8		8.0	84.5		7.1	83.6	83.6
Actuated g/C Ratio		0.31			0.31		0.05	0.56		0.05	0.55	0.55
Clearance Time (s)		4.2			4.2		4.0	4.2		4.0	4.2	4.2
Vehicle Extension (s)		0.2			0.2		3.0	0.2		3.0	0.2	0.2
Lane Grp Cap (vph)		577			580		94	1034		83	1033	878
v/s Ratio Prot							c0.05	0.41		0.03	c1.01	
v/s Ratio Perm		c0.43			0.33							0.19
v/c Ratio		1.79dl			1.05		0.88	0.74		0.69	1.81	0.34
Uniform Delay, d1		52.0			52.0		70.9	24.9		70.8	33.6	18.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		187.1			51.8		56.4	2.4		21.0	370.2	0.1
Delay (s)		239.1			103.8		127.3	27.3		91.8	403.8	18.6
Level of Service		F			F		F	C		F	F	B
Approach Delay (s)		239.1			103.8			37.1			336.8	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	232.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	150.8	Sum of lost time (s)	12.4
Intersection Capacity Utilization	151.2%	ICU Level of Service	H
Analysis Period (min)	15		

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	243	524	43	139	262	123	121	663	162	161	193	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3369		1770	3435		1770	4871	
Flt Permitted	0.50	1.00	1.00	0.39	1.00		0.57	1.00		0.23	1.00	
Satd. Flow (perm)	926	3539	1583	1406	3369		1055	3435		433	4871	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	264	570	47	151	285	134	132	721	176	175	210	82
RTOR Reduction (vph)	0	0	28	0	81	0	0	36	0	0	45	0
Lane Group Flow (vph)	264	570	19	151	338	0	132	861	0	175	247	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	23.2	23.2	23.2	23.2	23.2		26.7	26.7		26.7	26.7	
Effective Green, g (s)	23.2	23.2	23.2	23.2	23.2		26.7	26.7		26.7	26.7	
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40		0.46	0.46		0.46	0.46	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	367	1401	627	557	1334		481	1565		197	2219	
v/s Ratio Prot		0.16			0.10			0.25			0.05	
v/s Ratio Perm	c0.28		0.01	0.11			0.13			c0.40		
v/c Ratio	0.72	0.41	0.03	0.27	0.25		0.27	0.55		0.89	0.11	
Uniform Delay, d1	15.0	12.7	10.8	12.0	11.9		9.9	11.6		14.6	9.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.5	0.1	0.0	0.1	0.0		0.1	0.2		34.0	0.0	
Delay (s)	20.5	12.8	10.8	12.1	11.9		10.0	11.8		48.6	9.2	
Level of Service	C	B	B	B	B		B	B		D	A	
Approach Delay (s)		15.0			12.0			11.6			23.9	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	8.7
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	189	456	197	266	330	245	88	781	135	218	1656	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3313		1770	3461		1770	4995	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3313		1770	3461		1770	4995	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	496	214	289	359	266	96	849	147	237	1800	243
RTOR Reduction (vph)	0	0	135	0	143	0	0	15	0	0	18	0
Lane Group Flow (vph)	205	496	79	289	482	0	96	981	0	237	2025	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	11.0	24.1	24.1	9.9	23.0		6.3	30.4		13.0	37.1	
Effective Green, g (s)	11.0	24.1	24.1	9.9	23.0		6.3	30.4		13.0	37.1	
Actuated g/C Ratio	0.12	0.26	0.26	0.11	0.24		0.07	0.32		0.14	0.39	
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	3.0	0.2	0.2	3.0	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	207	906	405	361	810		119	1118		245	1969	
v/s Ratio Prot	c0.12	0.14		0.08	c0.15		0.05	0.28		c0.13	c0.41	
v/s Ratio Perm			0.05									
v/c Ratio	0.99	0.55	0.20	0.80	0.60		0.81	0.88		0.97	1.03	
Uniform Delay, d1	41.5	30.3	27.4	41.1	31.4		43.3	30.1		40.3	28.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	59.6	0.4	0.1	12.0	0.8		31.5	7.7		47.9	28.0	
Delay (s)	101.1	30.6	27.5	53.1	32.2		74.8	37.8		88.2	56.5	
Level of Service	F	C	C	D	C		E	D		F	E	
Approach Delay (s)		45.7			38.8			41.1			59.8	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	49.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	85	210	140	136	385	60	142	529	160	90	273	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	4.2
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1751		1770	3468		1770	3416		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1751		1770	3468		1770	3416		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	228	152	148	418	65	154	575	174	98	297	170
RTOR Reduction (vph)	0	32	0	0	16	0	0	37	0	0	0	123
Lane Group Flow (vph)	92	348	0	148	467	0	154	712	0	98	297	47
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	5.8	19.5		7.8	21.5		7.9	22.0		5.8	19.9	19.9
Effective Green, g (s)	5.8	19.5		7.8	21.5		7.9	22.0		5.8	19.9	19.9
Actuated g/C Ratio	0.08	0.27		0.11	0.30		0.11	0.31		0.08	0.28	0.28
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	4.2
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	144	478		193	1043		196	1051		144	985	441
v/s Ratio Prot	0.05	c0.20		c0.08	0.13		c0.09	c0.21		0.06	0.08	
v/s Ratio Perm												0.03
v/c Ratio	0.64	0.73		0.77	0.45		0.79	0.68		0.68	0.30	0.11
Uniform Delay, d1	31.8	23.6		31.0	20.2		31.0	21.6		31.9	20.3	19.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	6.7		15.0	0.6		17.2	2.3		10.1	0.4	0.2
Delay (s)	38.5	30.3		46.0	20.8		48.1	23.9		42.0	20.7	19.4
Level of Service	D	C		D	C		D	C		D	C	B
Approach Delay (s)		31.9			26.7			28.0			24.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	12.2
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	110	399	231	348	450	94	195	880	156	139	1354	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	4.2
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.95		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1760		1770	3448		1770	3459		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1760		1770	3448		1770	3459		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	434	251	378	489	102	212	957	170	151	1472	229
RTOR Reduction (vph)	0	14	0	0	11	0	0	10	0	0	0	50
Lane Group Flow (vph)	120	671	0	378	580	0	212	1117	0	151	1472	179
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	14.0	46.8		23.0	55.8		15.0	50.8		13.0	48.8	48.8
Effective Green, g (s)	14.0	46.8		23.0	55.8		15.0	50.8		13.0	48.8	48.8
Actuated g/C Ratio	0.09	0.31		0.15	0.37		0.10	0.34		0.09	0.33	0.33
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	4.2
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	165	549		271	1283		177	1171		153	1151	515
v/s Ratio Prot	0.07	c0.38		c0.21	0.17		c0.12	0.32		0.09	c0.42	
v/s Ratio Perm												0.11
v/c Ratio	0.73	1.22		1.39	0.45		1.20	0.95		0.99	1.28	0.35
Uniform Delay, d1	66.1	51.6		63.5	35.6		67.5	48.5		68.4	50.6	38.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.7	115.8		198.7	0.5		130.9	16.7		68.1	132.3	0.9
Delay (s)	78.8	167.4		262.2	36.1		198.4	65.2		136.5	182.9	39.3
Level of Service	E	F		F	D		F	E		F	F	D
Approach Delay (s)		154.2			124.3			86.3			161.4	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	132.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	116.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	39	205	38	0	0	0	21	307	74	307	1217	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6				4.0	4.6		4.0	4.6	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	0.97		1.00	0.98	
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1848	1583				1770	3437		1770	3478	
Flt Permitted		0.99	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1848	1583				1770	3437		1770	3478	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	223	41	0	0	0	23	334	80	334	1323	174
RTOR Reduction (vph)	0	0	22	0	0	0	0	20	0	0	8	0
Lane Group Flow (vph)	0	265	19	0	0	0	23	394	0	334	1489	0
Turn Type	Split		Perm				Prot			Prot		
Protected Phases	4	4					5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		12.6	12.6				2.5	24.7		17.1	39.3	
Effective Green, g (s)		12.6	12.6				2.5	24.7		17.1	39.3	
Actuated g/C Ratio		0.19	0.19				0.04	0.37		0.25	0.58	
Clearance Time (s)		4.6	4.6				4.0	4.6		4.0	4.6	
Vehicle Extension (s)		0.2	0.2				3.0	4.1		3.0	4.1	
Lane Grp Cap (vph)		344	295				65	1256		448	2022	
v/s Ratio Prot		c0.14					0.01	0.11		c0.19	c0.43	
v/s Ratio Perm			0.01									
v/c Ratio		0.77	0.06				0.35	0.31		0.75	0.74	
Uniform Delay, d1		26.1	22.6				31.8	15.4		23.2	10.4	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.3	0.0				3.3	0.2		6.6	1.5	
Delay (s)		35.5	22.7				35.1	15.6		29.9	11.9	
Level of Service		D	C				D	B		C	B	
Approach Delay (s)		33.7			0.0			16.6			15.2	
Approach LOS		C			A			B			B	

Intersection Summary

HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	8.6
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	254	486	59	0	0	0	30	965	85	304	999	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6				4.0	4.6		4.0	4.6	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	0.99		1.00	0.98	
Flt Protected		0.98	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1831	1583				1770	3496		1770	3457	
Flt Permitted		0.98	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1831	1583				1770	3496		1770	3457	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	276	528	64	0	0	0	33	1049	92	330	1086	198
RTOR Reduction (vph)	0	0	7	0	0	0	0	5	0	0	11	0
Lane Group Flow (vph)	0	804	57	0	0	0	33	1136	0	330	1273	0
Turn Type	Split		Perm				Prot			Prot		
Protected Phases	4	4					5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		53.4	53.4				4.8	43.0		22.0	60.2	
Effective Green, g (s)		53.4	53.4				4.8	43.0		22.0	60.2	
Actuated g/C Ratio		0.41	0.41				0.04	0.33		0.17	0.46	
Clearance Time (s)		4.6	4.6				4.0	4.6		4.0	4.6	
Vehicle Extension (s)		0.2	0.2				3.0	4.1		3.0	4.1	
Lane Grp Cap (vph)		743	642				65	1142		296	1581	
v/s Ratio Prot		c0.44					0.02	c0.32		c0.19	0.37	
v/s Ratio Perm			0.04									
v/c Ratio		1.08	0.09				0.51	0.99		1.11	0.81	
Uniform Delay, d1		39.1	24.1				62.2	44.2		54.8	30.7	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		57.5	0.0				6.1	25.3		86.8	3.3	
Delay (s)		96.6	24.1				68.4	69.5		141.6	34.0	
Level of Service		F	C				E	E		F	C	
Approach Delay (s)		91.2			0.0			69.4			56.0	
Approach LOS		F			A			E			E	

Intersection Summary

HCM Average Control Delay	68.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	131.6	Sum of lost time (s)	13.2
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	630	485	409	0	0	0	0	863	458	261	639	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.7	4.7	4.7					5.2	5.2	5.2	5.2	
Lane Util. Factor	1.00	1.00	1.00					0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583					3539	1583	1770	3539	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583					3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	685	527	445	0	0	0	0	938	498	284	695	0
RTOR Reduction (vph)	0	0	112	0	0	0	0	0	114	0	0	0
Lane Group Flow (vph)	685	527	333	0	0	0	0	938	384	284	695	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	34.3	34.3	34.3					25.0	25.0	14.8	45.0	
Effective Green, g (s)	34.3	34.3	34.3					25.0	25.0	14.8	45.0	
Actuated g/C Ratio	0.38	0.38	0.38					0.28	0.28	0.17	0.50	
Clearance Time (s)	4.7	4.7	4.7					5.2	5.2	5.2	5.2	
Vehicle Extension (s)	6.2	6.2	6.2					0.2	0.2	2.0	0.2	
Lane Grp Cap (vph)	681	716	609					992	444	294	1785	
v/s Ratio Prot	c0.39	0.28						c0.27		c0.16	0.20	
v/s Ratio Perm			0.21						0.24			
v/c Ratio	1.01	0.74	0.55					0.95	0.87	0.97	0.39	
Uniform Delay, d1	27.5	23.6	21.4					31.4	30.5	36.9	13.6	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	35.9	5.5	2.4					16.7	15.5	42.6	0.1	
Delay (s)	63.4	29.1	23.8					48.1	46.0	79.6	13.7	
Level of Service	E	C	C					D	D	E	B	
Approach Delay (s)		41.8			0.0			47.4			32.8	
Approach LOS		D			A			D			C	

Intersection Summary			
HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	15.1
Intersection Capacity Utilization	110.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	247	721	790	0	0	0	0	1003	479	390	741	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.7	4.7	4.7					5.2	5.2	5.2	5.2	
Lane Util. Factor	1.00	1.00	1.00					0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583					3539	1583	1770	3539	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583					3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	784	859	0	0	0	0	1090	521	424	805	0
RTOR Reduction (vph)	0	0	91	0	0	0	0	0	53	0	0	0
Lane Group Flow (vph)	268	784	768	0	0	0	0	1090	468	424	805	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	55.3	55.3	55.3					40.8	40.8	28.8	74.8	
Effective Green, g (s)	55.3	55.3	55.3					40.8	40.8	28.8	74.8	
Actuated g/C Ratio	0.39	0.39	0.39					0.29	0.29	0.21	0.53	
Clearance Time (s)	4.7	4.7	4.7					5.2	5.2	5.2	5.2	
Vehicle Extension (s)	6.2	6.2	6.2					0.2	0.2	2.0	0.2	
Lane Grp Cap (vph)	699	736	625					1031	461	364	1891	
v/s Ratio Prot	0.15	0.42						c0.31		c0.24	0.23	
v/s Ratio Perm			c0.49						0.30			
v/c Ratio	0.38	1.07	1.23					1.06	1.01	1.16	0.43	
Uniform Delay, d1	30.2	42.4	42.4					49.6	49.6	55.6	19.7	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	51.9	116.8					44.4	45.7	100.1	0.1	
Delay (s)	31.2	94.3	159.1					94.0	95.3	155.7	19.7	
Level of Service	C	F	F					F	F	F	B	
Approach Delay (s)		114.6			0.0			94.5			66.6	
Approach LOS		F			A			F			E	

Intersection Summary

HCM Average Control Delay	95.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	183.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	352	517	443	643	857	0	0	539	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Lane Util. Factor					0.95	1.00	0.97	1.00			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3469	1583	3433	1863			3539	1583
Flt Permitted					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					3469	1583	3433	1863			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	383	562	482	699	932	0	0	586	260
RTOR Reduction (vph)	0	0	0	0	0	67	0	0	0	0	0	73
Lane Group Flow (vph)	0	0	0	0	945	415	699	932	0	0	586	187
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)					31.8	31.8	23.1	45.4			18.6	18.6
Effective Green, g (s)					31.8	31.8	23.1	45.4			18.6	18.6
Actuated g/C Ratio					0.36	0.36	0.26	0.52			0.21	0.21
Clearance Time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Vehicle Extension (s)					5.0	5.0	2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					1256	573	903	963			750	335
v/s Ratio Prot					c0.27		0.20	c0.50			0.17	
v/s Ratio Perm						0.26						0.12
v/c Ratio					0.75	0.72	0.77	0.97			0.78	0.56
Uniform Delay, d1					24.5	24.2	29.9	20.5			32.7	30.9
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					3.1	5.5	3.8	21.2			4.9	1.2
Delay (s)					27.6	29.7	33.8	41.7			37.6	32.1
Level of Service					C	C	C	D			D	C
Approach Delay (s)		0.0			28.4			38.3			35.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	10.6
Intersection Capacity Utilization	110.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	335	511	609	647	594	0	0	786	1003
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Lane Util. Factor					0.95	1.00	0.97	1.00			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3470	1583	3433	1863			3539	1583
Flt Permitted					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					3470	1583	3433	1863			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	364	555	662	703	646	0	0	854	1090
RTOR Reduction (vph)	0	0	0	0	0	248	0	0	0	0	0	15
Lane Group Flow (vph)	0	0	0	0	919	414	703	646	0	0	854	1075
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)					35.6	35.6	23.3	103.8			76.8	76.8
Effective Green, g (s)					35.6	35.6	23.3	103.8			76.8	76.8
Actuated g/C Ratio					0.24	0.24	0.16	0.69			0.51	0.51
Clearance Time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Vehicle Extension (s)					5.0	5.0	2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					824	376	533	1289			1812	810
v/s Ratio Prot					c0.26		c0.20	0.35			0.24	
v/s Ratio Perm						0.26						c0.68
v/c Ratio					1.12	1.10	1.32	0.50			0.47	1.33
Uniform Delay, d1					57.2	57.2	63.4	10.9			23.5	36.6
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					68.0	76.6	156.3	0.1			0.1	155.9
Delay (s)					125.2	133.8	219.7	11.0			23.6	192.5
Level of Service					F	F	F	B			C	F
Approach Delay (s)		0.0			128.8			119.8			118.3	
Approach LOS		A			F			F			F	

Intersection Summary

HCM Average Control Delay	122.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	183.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	214	211	180	99	265	204	149	611	92	64	459	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.1	4.2	4.2	4.1	4.2		4.1	4.2		4.1	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3308		1770	3470		1770	3427	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3308		1770	3470		1770	3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	233	229	196	108	288	222	162	664	100	70	499	134
RTOR Reduction (vph)	0	0	140	0	173	0	0	13	0	0	28	0
Lane Group Flow (vph)	233	229	56	108	337	0	162	751	0	70	605	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	11.7	21.6	21.6	6.9	16.8		8.5	25.2		5.9	22.6	
Effective Green, g (s)	11.7	21.6	21.6	6.9	16.8		8.5	25.2		5.9	22.6	
Actuated g/C Ratio	0.15	0.28	0.28	0.09	0.22		0.11	0.33		0.08	0.30	
Clearance Time (s)	4.1	4.2	4.2	4.1	4.2		4.1	4.2		4.1	4.2	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	272	528	449	160	729		197	1148		137	1016	
v/s Ratio Prot	c0.13	c0.12		0.06	0.10		c0.09	c0.22		0.04	0.18	
v/s Ratio Perm			0.04									
v/c Ratio	0.86	0.43	0.12	0.68	0.46		0.82	0.65		0.51	0.60	
Uniform Delay, d1	31.4	22.3	20.3	33.6	25.8		33.1	21.8		33.8	22.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.3	1.2	0.3	10.7	1.0		23.3	1.8		3.2	1.4	
Delay (s)	53.8	23.5	20.5	44.3	26.8		56.4	23.6		37.0	24.3	
Level of Service	D	C	C	D	C		E	C		D	C	
Approach Delay (s)		33.3			29.8			29.3			25.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	12.4
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	106	302	214	203	441	194	258	663	136	183	1052	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.1	4.2	4.2	4.1	4.2		4.1	4.2		4.1	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	3377		1770	3449		1770	3488	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	3377		1770	3449		1770	3488	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	328	233	221	479	211	280	721	148	199	1143	123
RTOR Reduction (vph)	0	0	157	0	44	0	0	14	0	0	7	0
Lane Group Flow (vph)	115	328	76	221	646	0	280	855	0	199	1259	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	10.5	23.9	23.9	14.9	28.3		18.7	42.7		15.9	39.9	
Effective Green, g (s)	10.5	23.9	23.9	14.9	28.3		18.7	42.7		15.9	39.9	
Actuated g/C Ratio	0.09	0.21	0.21	0.13	0.25		0.16	0.37		0.14	0.35	
Clearance Time (s)	4.1	4.2	4.2	4.1	4.2		4.1	4.2		4.1	4.2	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	163	391	332	231	838		290	1292		247	1221	
v/s Ratio Prot	0.06	0.18		c0.12	c0.19		c0.16	c0.25		0.11	c0.36	
v/s Ratio Perm			0.05									
v/c Ratio	0.71	0.84	0.23	0.96	0.77		0.97	0.66		0.81	1.03	
Uniform Delay, d1	50.2	43.2	37.4	49.2	39.8		47.3	29.6		47.6	37.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.0	16.0	0.7	46.7	5.2		43.1	1.7		17.2	34.0	
Delay (s)	63.3	59.2	38.1	95.9	45.0		90.4	31.3		64.7	71.1	
Level of Service	E	E	D	F	D		F	C		E	E	
Approach Delay (s)		52.6			57.4			45.7			70.2	
Approach LOS		D			E			D			E	

Intersection Summary

HCM Average Control Delay	57.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (vph)	8	117	13	635	202	367	355	547	47	80	150	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	1835		1681	1724	1583	1770	2787	1583	1770	3433	1583
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	1835		1681	1724	1583	1770	2787	1583	1770	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	127	14	690	220	399	386	595	51	87	163	313
RTOR Reduction (vph)	0	4	0	0	0	283	0	0	23	0	0	273
Lane Group Flow (vph)	9	137	0	448	462	116	386	595	28	87	163	40
Turn Type	Split			Split		Perm		custom	custom	Prot		Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			6
Actuated Green, G (s)	12.0	12.0		26.5	26.5	26.5	23.1	27.2	27.2	7.5	11.6	11.6
Effective Green, g (s)	12.0	12.0		26.5	26.5	26.5	23.1	27.2	27.2	7.5	11.6	11.6
Actuated g/C Ratio	0.13	0.13		0.29	0.29	0.29	0.25	0.30	0.30	0.08	0.13	0.13
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Vehicle Extension (s)	3.0	3.0		3.5	3.5	3.5	3.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	233	242		490	502	461	449	833	473	146	438	202
v/s Ratio Prot	0.01	c0.07		0.27	c0.27		c0.22	c0.21		0.05	0.05	
v/s Ratio Perm						0.07			0.02			0.03
v/c Ratio	0.04	0.56		0.91	0.92	0.25	0.86	0.71	0.06	0.60	0.37	0.20
Uniform Delay, d1	34.5	37.1		31.2	31.2	24.7	32.4	28.4	22.8	40.3	36.4	35.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	3.0		21.9	22.6	0.3	15.1	3.5	0.1	4.3	1.0	0.9
Delay (s)	34.5	40.1		53.0	53.8	25.0	47.5	31.9	22.9	44.6	37.4	36.5
Level of Service	C	D		D	D	C	D	C	C	D	D	D
Approach Delay (s)		39.7			44.8		37.3				38.0	
Approach LOS		D			D		D				D	

Intersection Summary

HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (vph)	12	247	43	794	44	424	412	612	13	17	763	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	1821		1681	1694	1583	1770	2787	1583	1770	3433	1583
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	1821		1681	1694	1583	1770	2787	1583	1770	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	268	47	863	48	461	448	665	14	18	829	893
RTOR Reduction (vph)	0	4	0	0	0	278	0	0	4	0	0	368
Lane Group Flow (vph)	13	311	0	457	454	183	448	665	10	18	829	525
Turn Type	Split			Split		Perm		custom	custom	Prot		Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			6
Actuated Green, G (s)	25.8	25.8		34.4	34.4	34.4	30.0	64.2	64.2	4.2	38.4	38.4
Effective Green, g (s)	25.8	25.8		34.4	34.4	34.4	30.0	64.2	64.2	4.2	38.4	38.4
Actuated g/C Ratio	0.18	0.18		0.23	0.23	0.23	0.20	0.44	0.44	0.03	0.26	0.26
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Vehicle Extension (s)	3.0	3.0		3.5	3.5	3.5	3.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	312	321		395	398	372	363	1222	694	51	900	415
v/s Ratio Prot	0.01	c0.17		c0.27	0.27		c0.25	0.24		0.01	0.24	
v/s Ratio Perm						0.12			0.01			c0.33
v/c Ratio	0.04	0.97		1.16	1.14	0.49	1.23	0.54	0.01	0.35	0.92	1.26
Uniform Delay, d1	50.0	59.9		56.0	56.0	48.4	58.2	30.3	23.2	69.8	52.5	54.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	41.3		95.5	89.3	1.2	127.0	0.8	0.0	1.5	15.0	137.2
Delay (s)	50.1	101.2		151.5	145.3	49.6	185.2	31.1	23.2	71.3	67.5	191.2
Level of Service	D	F		F	F	D	F	C	C	E	E	F
Approach Delay (s)		99.1			115.2		92.3				131.0	
Approach LOS		F			F		F				F	

Intersection Summary

HCM Average Control Delay	114.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	146.4	Sum of lost time (s)	17.8
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	49	676	342	21	52	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.99		0.93	
Flt Protected		1.00	1.00		0.98	
Satd. Flow (prot)		1857	1848		1691	
Flt Permitted		0.96	1.00		0.98	
Satd. Flow (perm)		1786	1848		1691	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	735	372	23	57	62
RTOR Reduction (vph)	0	0	3	0	54	0
Lane Group Flow (vph)	0	788	392	0	65	0
Turn Type	Perm					
Protected Phases		6	2		8	
Permitted Phases	6					
Actuated Green, G (s)		33.8	33.8		6.0	
Effective Green, g (s)		33.8	33.8		6.0	
Actuated g/C Ratio		0.71	0.71		0.13	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1263	1307		212	
v/s Ratio Prot			0.21		c0.04	
v/s Ratio Perm		c0.44				
v/c Ratio		0.62	0.30		0.31	
Uniform Delay, d1		3.7	2.6		19.0	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.0	0.1		0.8	
Delay (s)		4.6	2.7		19.8	
Level of Service		A	A		B	
Approach Delay (s)		4.6	2.7		19.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	118	723	547	69	73	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	0.98		0.90	
Flt Protected		0.99	1.00		0.99	
Satd. Flow (prot)		1850	1835		1651	
Flt Permitted		0.82	1.00		0.99	
Satd. Flow (perm)		1522	1835		1651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	786	595	75	79	261
RTOR Reduction (vph)	0	0	6	0	154	0
Lane Group Flow (vph)	0	914	664	0	186	0
Turn Type	Perm					
Protected Phases		6	2		8	
Permitted Phases	6					
Actuated Green, G (s)		48.2	48.2		11.8	
Effective Green, g (s)		48.2	48.2		11.8	
Actuated g/C Ratio		0.71	0.71		0.17	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1079	1301		286	
v/s Ratio Prot			0.36		c0.11	
v/s Ratio Perm		c0.60				
v/c Ratio		0.85	0.51		0.65	
Uniform Delay, d1		7.2	4.5		26.2	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		6.3	0.3		5.2	
Delay (s)		13.5	4.9		31.4	
Level of Service		B	A		C	
Approach Delay (s)		13.5	4.9		31.4	
Approach LOS		B	A		C	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL
Lane Configurations												
Volume (vph)	0	96	11	35	869	1	42	288	0	42	3	1600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6	4.6			4.6	4.6		4.2	4.6
Lane Util. Factor	1.00			0.86	0.86			0.97	1.00		1.00	0.94
Frt	0.86			0.88	0.85			1.00	0.85		0.86	0.96
Flt Protected	1.00			1.00	1.00			0.95	1.00		1.00	0.97
Satd. Flow (prot)	1611			1405	4085			3433	1583		1611	4855
Flt Permitted	1.00			0.99	1.00			0.95	1.00		1.00	0.61
Satd. Flow (perm)	1611			1391	4085			3433	1583		1611	3051
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	104	12	38	945	1	46	313	0	46	3	1739
RTOR Reduction (vph)	74	0	0	0	0	0	0	0	38	0	2	0
Lane Group Flow (vph)	30	0	0	258	738	0	0	359	8	0	1	2431
Turn Type			Perm		Perm		Perm	Perm			custom	
Protected Phases	6			6					4		8	5
Permitted Phases			6		6		4	4				2
Actuated Green, G (s)	27.1			27.1	27.1			15.9	15.9		16.3	38.1
Effective Green, g (s)	27.1			27.1	27.1			15.9	15.9		16.3	38.1
Actuated g/C Ratio	0.29			0.29	0.29			0.17	0.17		0.17	0.40
Clearance Time (s)	4.6			4.6	4.6			4.6	4.6		4.2	4.6
Vehicle Extension (s)	5.0			5.0	5.0			4.0	4.0		2.0	5.0
Lane Grp Cap (vph)	460			397	1167			575	265		277	1949
v/s Ratio Prot	0.02								0.00		0.00	c0.50
v/s Ratio Perm				c0.19	0.18			c0.10				
v/c Ratio	0.06			0.65	0.63			0.62	0.03		0.00	1.25
Uniform Delay, d1	24.7			29.7	29.6			36.7	33.0		32.6	28.4
Progression Factor	1.00			1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1			5.0	1.6			2.4	0.1		0.0	115.8
Delay (s)	24.8			34.7	31.1			39.1	33.1		32.6	144.2
Level of Service	C			C	C			D	C		C	F
Approach Delay (s)	24.8			32.0					38.4			144.2
Approach LOS	C			C					D			F

Intersection Summary

HCM Average Control Delay	101.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	94.9	Sum of lost time (s)	13.8
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SER	SER2
Lane Configurations		
Volume (vph)	636	1
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	691	1
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		
Intersection Summary		

Movement	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL2	SEL
Lane Configurations												
Volume (vph)	0	40	22	1991	2	9	691	0	44	6	1	2206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6		4.6	4.6			4.6	4.6		4.2		4.6
Lane Util. Factor	1.00		0.86	0.86			0.97	1.00		1.00		0.94
Frt	0.86		0.86	0.85			1.00	0.85		0.86		0.97
Flt Protected	1.00		1.00	1.00			0.95	1.00		1.00		0.96
Satd. Flow (prot)	1611		1372	4085			3433	1583		1611		4913
Flt Permitted	1.00		1.00	1.00			0.95	1.00		1.00		0.94
Satd. Flow (perm)	1611		1372	4085			3433	1583		1611		4809
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	43	24	2164	2	10	751	0	48	7	1	2398
RTOR Reduction (vph)	30	0	0	0	0	0	0	40	0	6	0	0
Lane Group Flow (vph)	13	0	543	1647	0	0	761	8	0	1	0	2904
Turn Type				custom		Perm	Perm			custom	Perm	
Protected Phases	6		6	2				4		8		5
Permitted Phases				6		4	4				5	2
Actuated Green, G (s)	44.4		44.4	64.8			25.4	25.4		25.8		61.8
Effective Green, g (s)	44.4		44.4	64.8			25.4	25.4		25.8		61.8
Actuated g/C Ratio	0.30		0.30	0.43			0.17	0.17		0.17		0.41
Clearance Time (s)	4.6		4.6	4.6			4.6	4.6		4.2		4.6
Vehicle Extension (s)	5.0		5.0	5.0			4.0	4.0		2.0		5.0
Lane Grp Cap (vph)	477		406	1765			581	268		277		2010
v/s Ratio Prot	0.01		c0.40	0.13				0.01		0.00		c0.40
v/s Ratio Perm				0.28			c0.22					c0.20
v/c Ratio	0.03		1.34	0.93			1.31	0.03		0.00		1.44
Uniform Delay, d1	37.5		52.8	40.5			62.3	52.0		51.5		46.1
Progression Factor	1.00		1.00	1.00			1.00	1.00		1.00		1.00
Incremental Delay, d2	0.0		167.8	9.9			151.5	0.1		0.0		203.0
Delay (s)	37.5		220.6	50.5			213.8	52.1		51.5		249.1
Level of Service	D		F	D			F	D		D		F
Approach Delay (s)	37.5		92.7					204.2				249.1
Approach LOS	D		F					F				F

Intersection Summary

HCM Average Control Delay	183.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.4
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SER	SER2
Lane Configurations		
Volume (vph)	458	6
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	498	7
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	398	720	272	6	226	44	60	163	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5		4.5	4.5		4.2				
Lane Util. Factor		0.95	1.00		0.95	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		0.99				
Flt Protected		0.98	1.00		1.00	1.00		0.99				
Satd. Flow (prot)		3477	1583		3534	1583		3463				
Flt Permitted		0.75	1.00		0.93	1.00		0.99				
Satd. Flow (perm)		2641	1583		3275	1583		3463				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	783	296	7	246	48	65	177	16	0	0	0
RTOR Reduction (vph)	0	0	147	0	0	24	0	7	0	0	0	0
Lane Group Flow (vph)	0	1216	149	0	253	24	0	251	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Split					
Protected Phases		8			4		6	6				
Permitted Phases	8		8	4		4						
Actuated Green, G (s)		31.3	31.3		31.3	31.3		22.0				
Effective Green, g (s)		31.3	31.3		31.3	31.3		22.0				
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.35				
Clearance Time (s)		4.5	4.5		4.5	4.5		4.2				
Vehicle Extension (s)		0.2	0.2		0.2	0.2		0.2				
Lane Grp Cap (vph)		1333	799		1653	799		1229				
v/s Ratio Prot								c0.07				
v/s Ratio Perm		c0.46	0.09		0.08	0.02						
v/c Ratio		0.91	0.19		0.15	0.03		0.20				
Uniform Delay, d1		14.1	8.4		8.2	7.7		13.9				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		9.5	0.0		0.0	0.0		0.0				
Delay (s)		23.6	8.4		8.3	7.7		13.9				
Level of Service		C	A		A	A		B				
Approach Delay (s)		20.6			8.2			13.9			0.0	
Approach LOS		C			A			B			A	

Intersection Summary

HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	800	508	179	9	897	108	178	537	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5		4.5	4.5		4.2				
Lane Util. Factor		0.95	1.00		0.95	1.00		0.95				
Frt		1.00	0.85		1.00	0.85		1.00				
Flt Protected		0.97	1.00		1.00	1.00		0.99				
Satd. Flow (prot)		3434	1583		3537	1583		3485				
Flt Permitted		0.50	1.00		0.93	1.00		0.99				
Satd. Flow (perm)		1783	1583		3305	1583		3485				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	870	552	195	10	975	117	193	584	18	0	0	0
RTOR Reduction (vph)	0	0	55	0	0	8	0	2	0	0	0	0
Lane Group Flow (vph)	0	1422	140	0	985	109	0	793	0	0	0	0
Turn Type	Perm		Perm	Perm		Perm	Split					
Protected Phases		8			4		6	6				
Permitted Phases	8		8	4		4						
Actuated Green, G (s)		93.5	93.5		93.5	93.5		27.8				
Effective Green, g (s)		93.5	93.5		93.5	93.5		27.8				
Actuated g/C Ratio		0.72	0.72		0.72	0.72		0.21				
Clearance Time (s)		4.5	4.5		4.5	4.5		4.2				
Vehicle Extension (s)		0.2	0.2		0.2	0.2		0.2				
Lane Grp Cap (vph)		1282	1139		2377	1139		745				
v/s Ratio Prot								c0.23				
v/s Ratio Perm		c0.80	0.09		0.30	0.07						
v/c Ratio		2.51dl	0.12		0.41	0.10		1.07				
Uniform Delay, d1		18.2	5.6		7.3	5.5		51.1				
Progression Factor		1.00	1.00		1.00	1.00		1.00				
Incremental Delay, d2		60.7	0.0		0.0	0.0		51.7				
Delay (s)		78.9	5.6		7.3	5.5		102.8				
Level of Service		E	A		A	A		F				
Approach Delay (s)		70.1			7.1			102.8			0.0	
Approach LOS		E			A			F			A	

Intersection Summary

HCM Average Control Delay	57.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.7
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		

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

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	31	0	18	2	0	0	1	2221	29	140	930	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6			4.2			4.2	
Lane Util. Factor	1.00	1.00			1.00			0.91			0.95	
Frt	1.00	0.85			1.00			1.00			1.00	
Flt Protected	0.95	1.00			0.95			1.00			0.99	
Satd. Flow (prot)	1770	1583			1770			5075			3513	
Flt Permitted	0.76	1.00			0.74			0.94			0.48	
Satd. Flow (perm)	1409	1583			1386			4770			1704	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	0	20	2	0	0	1	2414	32	152	1011	7
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	34	17	0	0	2	0	0	2447	0	0	1170	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	21.3	21.3			21.3			92.1			92.1	
Effective Green, g (s)	21.3	21.3			21.3			92.1			92.1	
Actuated g/C Ratio	0.17	0.17			0.17			0.75			0.75	
Clearance Time (s)	4.6	4.6			4.6			4.2			4.2	
Vehicle Extension (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	246	276			242			3595			1284	
v/s Ratio Prot		0.01										
v/s Ratio Perm	c0.02				0.00			0.51			c0.69	
v/c Ratio	0.14	0.06			0.01			0.68			2.45dl	
Uniform Delay, d1	42.7	42.1			41.7			7.6			11.8	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.2			0.0			0.6			10.0	
Delay (s)	43.2	42.3			41.7			8.2			21.9	
Level of Service	D	D			D			A			C	
Approach Delay (s)		42.9			41.7			8.2			21.9	
Approach LOS		D			D			A			C	

Intersection Summary

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	122.2	Sum of lost time (s)	8.8
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

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

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	67	0	23	0	2	0	1	2644	57	78	1800	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6			4.2			4.2	
Lane Util. Factor	1.00	1.00			1.00			0.91			0.95	
Frt	1.00	0.85			1.00			1.00			1.00	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1770	1583			1863			5069			3532	
Flt Permitted	0.76	1.00			1.00			0.94			0.54	
Satd. Flow (perm)	1409	1583			1863			4763			1899	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	0	25	0	2	0	1	2874	62	85	1957	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	73	24	0	0	2	0	0	2936	0	0	2043	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	21.3	21.3			21.3			92.1			92.1	
Effective Green, g (s)	21.3	21.3			21.3			92.1			92.1	
Actuated g/C Ratio	0.17	0.17			0.17			0.75			0.75	
Clearance Time (s)	4.6	4.6			4.6			4.2			4.2	
Vehicle Extension (s)	5.0	5.0			5.0			4.0			4.0	
Lane Grp Cap (vph)	246	276			325			3590			1431	
v/s Ratio Prot		0.02			0.00							
v/s Ratio Perm	c0.05							0.62			c1.08	
v/c Ratio	0.30	0.09			0.01			0.82			1.43	
Uniform Delay, d1	43.9	42.3			41.7			9.7			15.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.4	0.3			0.0			1.6			196.6	
Delay (s)	45.3	42.6			41.7			11.3			211.6	
Level of Service	D	D			D			B			F	
Approach Delay (s)		44.6			41.7			11.3			211.6	
Approach LOS		D			D			B			F	

Intersection Summary

HCM Average Control Delay	92.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	122.2	Sum of lost time (s)	8.8
Intersection Capacity Utilization	137.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	174	59	86	114	0	0	0	0	181	1445	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2						4.9	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frt		0.97		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1799		1770	1863						5024	
Flt Permitted		1.00		0.55	1.00						0.99	
Satd. Flow (perm)		1799		1026	1863						5024	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	189	64	93	124	0	0	0	0	197	1571	85
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	246	0	93	124	0	0	0	0	0	1844	0
Turn Type				Perm						Split		
Protected Phases		8			8					6	6	
Permitted Phases				8								
Actuated Green, G (s)		12.7		12.7	12.7						23.2	
Effective Green, g (s)		12.7		12.7	12.7						23.2	
Actuated g/C Ratio		0.28		0.28	0.28						0.52	
Clearance Time (s)		4.2		4.2	4.2						4.9	
Vehicle Extension (s)		4.0		4.0	4.0						5.0	
Lane Grp Cap (vph)		508		290	526						2590	
v/s Ratio Prot		c0.14			0.07						c0.37	
v/s Ratio Perm				0.09								
v/c Ratio		0.48		0.32	0.24						0.71	
Uniform Delay, d1		13.4		12.7	12.4						8.3	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		1.0		0.9	0.3						1.2	
Delay (s)		14.4		13.6	12.7						9.5	
Level of Service		B		B	B						A	
Approach Delay (s)		14.4			13.1			0.0			9.5	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
68: E McKenzie Ave. & N Blackstone Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	326	160	164	303	0	0	0	0	184	1788	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2						4.9	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frt		0.96		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1780		1770	1863						4995	
Flt Permitted		1.00		0.23	1.00						1.00	
Satd. Flow (perm)		1780		425	1863						4995	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	354	174	178	329	0	0	0	0	200	1943	215
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	526	0	178	329	0	0	0	0	0	2341	0
Turn Type				Perm						Split		
Protected Phases		8			8					6	6	
Permitted Phases				8								
Actuated Green, G (s)		26.8		26.8	26.8						34.1	
Effective Green, g (s)		26.8		26.8	26.8						34.1	
Actuated g/C Ratio		0.38		0.38	0.38						0.49	
Clearance Time (s)		4.2		4.2	4.2						4.9	
Vehicle Extension (s)		4.0		4.0	4.0						5.0	
Lane Grp Cap (vph)		681		163	713						2433	
v/s Ratio Prot		0.30			0.18						c0.47	
v/s Ratio Perm				c0.42								
v/c Ratio		0.77		1.09	0.46						0.96	
Uniform Delay, d1		18.9		21.6	16.2						17.3	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		5.7		97.2	0.6						11.0	
Delay (s)		24.7		118.8	16.8						28.3	
Level of Service		C		F	B						C	
Approach Delay (s)		24.7			52.6			0.0			28.3	
Approach LOS		C			D			A			C	

Intersection Summary

HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	370	1155	0	0	287	330	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6	4.6					
Lane Util. Factor	1.00	1.00			0.91	0.91					
Frt	1.00	1.00			0.95	0.85					
Flt Protected	0.95	0.95			1.00	1.00					
Satd. Flow (prot)	1770	1770			3224	1441					
Flt Permitted	0.95	0.95			1.00	1.00					
Satd. Flow (perm)	1770	1770			3224	1441					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	1255	0	0	312	359	0	0	0	0	0
RTOR Reduction (vph)	36	0	0	0	53	87	0	0	0	0	0
Lane Group Flow (vph)	366	1255	0	0	410	121	0	0	0	0	0
Turn Type	Split					Perm					
Protected Phases	4	4			2						
Permitted Phases						2					
Actuated Green, G (s)	71.4	71.4			18.2	18.2					
Effective Green, g (s)	71.4	71.4			18.2	18.2					
Actuated g/C Ratio	0.72	0.72			0.18	0.18					
Clearance Time (s)	4.6	4.6			4.6	4.6					
Vehicle Extension (s)	5.0	5.0			4.5	4.5					
Lane Grp Cap (vph)	1279	1279			594	265					
v/s Ratio Prot	0.21	c0.71			c0.13						
v/s Ratio Perm						0.08					
v/c Ratio	0.29	0.98			0.69	0.46					
Uniform Delay, d1	4.8	13.1			37.7	35.9					
Progression Factor	1.00	1.00			1.00	1.00					
Incremental Delay, d2	0.3	20.8			4.0	2.1					
Delay (s)	5.0	33.9			41.7	38.0					
Level of Service	A	C			D	D					
Approach Delay (s)		26.9			40.5			0.0		0.0	
Approach LOS		C			D			A		A	

Intersection Summary

HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	9.2
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	321	1101	0	0	507	824	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6	4.6					
Lane Util. Factor	1.00	1.00			0.91	0.91					
Frt	1.00	1.00			0.93	0.85					
Flt Protected	0.95	0.95			1.00	1.00					
Satd. Flow (prot)	1770	1770			3165	1441					
Flt Permitted	0.95	0.95			1.00	1.00					
Satd. Flow (perm)	1770	1770			3165	1441					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	349	1197	0	0	551	896	0	0	0	0	0
RTOR Reduction (vph)	31	0	0	0	64	64	0	0	0	0	0
Lane Group Flow (vph)	318	1197	0	0	926	393	0	0	0	0	0
Turn Type	Split					Perm					
Protected Phases	4	4			2						
Permitted Phases						2					
Actuated Green, G (s)	76.4	76.4			34.4	34.4					
Effective Green, g (s)	76.4	76.4			34.4	34.4					
Actuated g/C Ratio	0.64	0.64			0.29	0.29					
Clearance Time (s)	4.6	4.6			4.6	4.6					
Vehicle Extension (s)	5.0	5.0			4.5	4.5					
Lane Grp Cap (vph)	1127	1127			907	413					
v/s Ratio Prot	0.18	c0.68			c0.29						
v/s Ratio Perm						0.27					
v/c Ratio	0.28	1.06			1.02	0.95					
Uniform Delay, d1	9.7	21.8			42.8	42.0					
Progression Factor	1.00	1.00			1.00	1.00					
Incremental Delay, d2	0.3	44.9			35.2	32.3					
Delay (s)	9.9	66.7			78.0	74.3					
Level of Service	A	E			E	E					
Approach Delay (s)		53.9			76.8			0.0		0.0	
Approach LOS		D			E			A		A	

Intersection Summary

HCM Average Control Delay	65.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1040	0	56	611	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6		
Lane Util. Factor	0.97			0.95		
Frt	1.00			1.00		
Flt Protected	0.95			1.00		
Satd. Flow (prot)	3433			3524		
Flt Permitted	0.95			1.00		
Satd. Flow (perm)	3433			3524		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1130	0	61	664	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1130	0	0	725	0	0
Turn Type			Split			
Protected Phases	4		2	2		
Permitted Phases						
Actuated Green, G (s)	22.8			19.7		
Effective Green, g (s)	22.8			19.7		
Actuated g/C Ratio	0.44			0.38		
Clearance Time (s)	4.6			4.6		
Vehicle Extension (s)	3.3			4.9		
Lane Grp Cap (vph)	1514			1343		
v/s Ratio Prot	c0.33			c0.21		
v/s Ratio Perm						
v/c Ratio	0.75			0.54		
Uniform Delay, d1	12.0			12.5		
Progression Factor	1.00			1.00		
Incremental Delay, d2	2.1			0.7		
Delay (s)	14.1			13.2		
Level of Service	B			B		
Approach Delay (s)	14.1			13.2	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	9.2
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1305	0	105	721	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6		
Lane Util. Factor	0.97			0.95		
Frt	1.00			1.00		
Flt Protected	0.95			0.99		
Satd. Flow (prot)	3433			3517		
Flt Permitted	0.95			0.99		
Satd. Flow (perm)	3433			3517		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1418	0	114	784	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1418	0	0	898	0	0
Turn Type			Split			
Protected Phases	4		2	2		
Permitted Phases						
Actuated Green, G (s)	26.5			22.2		
Effective Green, g (s)	26.5			22.2		
Actuated g/C Ratio	0.46			0.38		
Clearance Time (s)	4.6			4.6		
Vehicle Extension (s)	3.3			4.9		
Lane Grp Cap (vph)	1571			1348		
v/s Ratio Prot	c0.41			c0.26		
v/s Ratio Perm						
v/c Ratio	0.90			0.67		
Uniform Delay, d1	14.5			14.8		
Progression Factor	1.00			1.00		
Incremental Delay, d2	7.7			1.6		
Delay (s)	22.2			16.4		
Level of Service	C			B		
Approach Delay (s)	22.2			16.4	0.0	
Approach LOS	C			B	A	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	9.2
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1474	145	111	376	0	0	0	0	376	1457	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2					4.9	4.9	
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	
Frt		0.99		1.00	1.00					1.00	0.98	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3492		1770	3539					1770	4958	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3492		1770	3539					1770	4958	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1602	158	121	409	0	0	0	0	409	1584	316
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	1754	0	121	409	0	0	0	0	409	1877	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Actuated Green, G (s)		60.8		8.3	72.8					48.1	48.1	
Effective Green, g (s)		60.8		8.3	72.8					48.1	48.1	
Actuated g/C Ratio		0.47		0.06	0.56					0.37	0.37	
Clearance Time (s)		4.2		3.7	4.2					4.9	4.9	
Vehicle Extension (s)		6.8		2.0	6.8					0.2	0.2	
Lane Grp Cap (vph)		1633		113	1982					655	1834	
v/s Ratio Prot		c0.50		c0.07	0.12					0.23	c0.38	
v/s Ratio Perm												
v/c Ratio		1.07		1.07	0.21					0.62	1.02	
Uniform Delay, d1		34.6		60.9	14.2					33.5	41.0	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		45.2		105.0	0.2					1.3	27.1	
Delay (s)		79.8		165.8	14.4					34.9	68.1	
Level of Service		E		F	B					C	E	
Approach Delay (s)		79.8			49.0			0.0			62.2	
Approach LOS		E			D			A			E	

Intersection Summary

HCM Average Control Delay	67.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1673	179	251	1353	0	0	0	0	364	1740	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2					4.9	4.9	
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	
Frt		0.99		1.00	1.00					1.00	0.96	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3488		1770	3539					1770	4901	
Flt Permitted		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3488		1770	3539					1770	4901	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1818	195	273	1471	0	0	0	0	396	1891	603
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	2008	0	273	1471	0	0	0	0	396	2477	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Actuated Green, G (s)		56.8		15.3	75.8					55.1	55.1	
Effective Green, g (s)		56.8		15.3	75.8					55.1	55.1	
Actuated g/C Ratio		0.41		0.11	0.54					0.39	0.39	
Clearance Time (s)		4.2		3.7	4.2					4.9	4.9	
Vehicle Extension (s)		6.8		2.0	6.8					0.2	0.2	
Lane Grp Cap (vph)		1415		193	1916					697	1929	
v/s Ratio Prot		c0.58		c0.15	0.42					0.22	c0.51	
v/s Ratio Perm												
v/c Ratio		1.42		1.41	0.77					0.57	1.28	
Uniform Delay, d1		41.6		62.4	25.2					33.2	42.5	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		192.7		214.2	2.6					0.6	131.9	
Delay (s)		234.3		276.6	27.8					33.8	174.4	
Level of Service		F		F	C					C	F	
Approach Delay (s)		234.3			66.8			0.0			155.1	
Approach LOS		F			E			A			F	

Intersection Summary

HCM Average Control Delay	155.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	122.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	272	0	0	169	489	2	636	1129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86	0.86			
Frt	1.00	1.00			1.00	0.85		0.93	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		4467	1362			
Flt Permitted	0.64	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1195	1863			1863	1583		4467	1362			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	296	0	0	184	532	2	691	1227	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	56	0	280	280	0	0	0
Lane Group Flow (vph)	8	296	0	0	184	476	0	1027	333	0	0	0
Turn Type	Perm					Perm	Split		Perm			
Protected Phases		4			4		2	2				
Permitted Phases	4					4			2			
Actuated Green, G (s)	20.5	20.5			20.5	20.5		19.0	19.0			
Effective Green, g (s)	20.5	20.5			20.5	20.5		19.0	19.0			
Actuated g/C Ratio	0.42	0.42			0.42	0.42		0.39	0.39			
Clearance Time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	5.7	5.7			5.7	5.7		5.2	5.2			
Lane Grp Cap (vph)	504	786			786	668		1746	532			
v/s Ratio Prot		0.16			0.10			0.23				
v/s Ratio Perm	0.01					c0.30			c0.24			
v/c Ratio	0.02	0.38			0.23	0.71		0.59	0.63			
Uniform Delay, d1	8.2	9.7			9.0	11.6		11.7	11.9			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.0	0.8			0.4	4.9		0.8	3.4			
Delay (s)	8.2	10.4			9.4	16.6		12.5	15.3			
Level of Service	A	B			A	B		B	B			
Approach Delay (s)		10.4			14.7			13.4			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	9.1
Intersection Capacity Utilization	118.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	480	0	0	102	581	0	1187	1197	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86	0.86			
Frt	1.00	1.00			1.00	0.85		0.95	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		4564	1362			
Flt Permitted	0.69	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1277	1863			1863	1583		4564	1362			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	522	0	0	111	632	0	1290	1301	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	13	0	119	119	0	0	0
Lane Group Flow (vph)	25	522	0	0	111	619	0	1822	531	0	0	0
Turn Type	Perm					Perm	Split		Perm			
Protected Phases		4			4		2	2				
Permitted Phases	4					4			2			
Actuated Green, G (s)	31.8	31.8			31.8	31.8		34.1	34.1			
Effective Green, g (s)	31.8	31.8			31.8	31.8		34.1	34.1			
Actuated g/C Ratio	0.42	0.42			0.42	0.42		0.45	0.45			
Clearance Time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	5.7	5.7			5.7	5.7		5.2	5.2			
Lane Grp Cap (vph)	541	790			790	671		2075	619			
v/s Ratio Prot		0.28			0.06			c0.40				
v/s Ratio Perm	0.02					c0.39			0.39			
v/c Ratio	0.05	0.66			0.14	0.92		0.88	0.86			
Uniform Delay, d1	12.7	17.3			13.2	20.4		18.6	18.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.1	3.1			0.2	19.3		5.0	12.5			
Delay (s)	12.8	20.4			13.4	39.7		23.6	30.8			
Level of Service	B	C			B	D		C	C			
Approach Delay (s)		20.0			35.8			25.4			0.0	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	142.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	415	1268	5	146	0	0	0	0	3	935	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2	3.7	4.2						4.9	4.9
Lane Util. Factor		0.95	0.95	1.00	1.00						0.95	1.00
Frt		0.92	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1631	1504	1770	1863						3539	1583
Flt Permitted		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)		1631	1504	1770	1863						3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	451	1378	5	159	0	0	0	0	3	1016	352
RTOR Reduction (vph)	0	27	72	0	0	0	0	0	0	0	0	182
Lane Group Flow (vph)	0	920	810	5	159	0	0	0	0	0	1019	170
Turn Type			Perm	Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		76.9	76.9	1.1	81.7						42.1	42.1
Effective Green, g (s)		76.9	76.9	1.1	81.7						42.1	42.1
Actuated g/C Ratio		0.58	0.58	0.01	0.61						0.32	0.32
Clearance Time (s)		4.2	4.2	3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9	4.9	2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		944	870	15	1145						1121	501
v/s Ratio Prot		c0.56		c0.00	0.09						c0.29	
v/s Ratio Perm			0.54									0.11
v/c Ratio		0.98	0.93	0.33	0.14						0.91	0.34
Uniform Delay, d1		27.1	25.6	65.5	10.8						43.6	34.8
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		23.4	16.9	4.7	0.1						11.4	0.9
Delay (s)		50.5	42.4	70.3	10.9						55.0	35.7
Level of Service		D	D	E	B						D	D
Approach Delay (s)		46.6			12.7			0.0			50.0	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	132.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	594	1192	20	303	0	0	0	0	5	1819	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2	3.7	4.2						4.9	4.9
Lane Util. Factor		0.95	0.95	1.00	1.00						0.95	1.00
Frt		0.94	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1672	1504	1770	1863						3539	1583
Flt Permitted		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)		1672	1504	1770	1863						3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	646	1296	22	329	0	0	0	0	5	1977	733
RTOR Reduction (vph)	0	14	71	0	0	0	0	0	0	0	0	180
Lane Group Flow (vph)	0	1008	849	22	329	0	0	0	0	0	1982	553
Turn Type			Perm	Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases			4									6
Actuated Green, G (s)		62.0	62.0	6.9	72.6						63.6	63.6
Effective Green, g (s)		62.0	62.0	6.9	72.6						63.6	63.6
Actuated g/C Ratio		0.43	0.43	0.05	0.50						0.44	0.44
Clearance Time (s)		4.2	4.2	3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9	4.9	2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		713	642	84	931						1549	693
v/s Ratio Prot		c0.60		0.01	c0.18						c0.56	
v/s Ratio Perm			0.56									0.35
v/c Ratio		1.41	1.32	0.26	0.35						1.28	0.80
Uniform Delay, d1		41.7	41.7	66.7	22.1						40.9	35.3
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		194.6	155.7	0.6	0.4						130.9	7.4
Delay (s)		236.2	197.4	67.4	22.5						171.8	42.7
Level of Service		F	F	E	C						F	D
Approach Delay (s)		217.8			25.3			0.0			136.9	
Approach LOS		F			C			A			F	

Intersection Summary

HCM Average Control Delay	160.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	145.3	Sum of lost time (s)	13.3
Intersection Capacity Utilization	120.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	7	562	26	57	49	32	5	37	29	17	24	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frt		0.99			0.97			0.94			0.99	
Flt Protected		1.00			0.98			1.00			0.98	
Satd. Flow (prot)		3514			1768			1753			1812	
Flt Permitted		0.95			0.73			0.97			1.00	
Satd. Flow (perm)		3350			1322			1709			1847	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	611	28	62	53	35	5	40	32	18	26	3
RTOR Reduction (vph)	0	5	0	0	12	0	0	29	0	0	3	0
Lane Group Flow (vph)	0	642	0	0	138	0	0	48	0	0	44	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		20.1			20.1			2.7			2.7	
Effective Green, g (s)		20.1			20.1			2.7			2.7	
Actuated g/C Ratio		0.65			0.65			0.09			0.09	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2186			863			150			162	
v/s Ratio Prot												
v/s Ratio Perm		c0.19			0.10			c0.03			0.02	
v/c Ratio		0.29			0.16			0.32			0.27	
Uniform Delay, d1		2.3			2.1			13.2			13.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.1			1.2			0.9	
Delay (s)		2.4			2.2			14.4			14.0	
Level of Service		A			A			B			B	
Approach Delay (s)		2.4			2.2			14.4			14.0	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	30.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	193	65	160	237	271	0	14	1624	1	276	1961	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frt		0.94			1.00			1.00			0.99	
Flt Protected		0.98			0.98			1.00			0.99	
Satd. Flow (prot)		3261			1820			1862			1841	
Flt Permitted		0.59			0.50			0.96			0.42	
Satd. Flow (perm)		1956			934			1783			774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	71	174	258	295	0	15	1765	1	300	2132	108
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	450	0	0	553	0	0	1781	0	0	2539	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)		53.0			53.0			89.0			89.0	
Effective Green, g (s)		53.0			53.0			89.0			89.0	
Actuated g/C Ratio		0.35			0.35			0.59			0.59	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		691			330			1058			459	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.59			1.00			c3.28	
v/c Ratio		0.65			1.68			1.68			5.53	
Uniform Delay, d1		40.7			48.5			30.5			30.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.2			317.1			311.6			2043.8	
Delay (s)		42.9			365.6			342.1			2074.3	
Level of Service		D			F			F			F	
Approach Delay (s)		42.9			365.6			342.1			2074.3	
Approach LOS		D			F			F			F	

Intersection Summary

HCM Average Control Delay	1144.6	HCM Level of Service	F
HCM Volume to Capacity ratio	4.09		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	264.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
92: E California Ave & Van Ness Ave

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	360	70	15	284	25	31	100	16	139	140	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.98		1.00	0.95	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2001			2023		1947	2008		1947	1940	
Flt Permitted		0.97			0.98		0.61	1.00		0.49	1.00	
Satd. Flow (perm)		1953			1983		1254	2008		1003	1940	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	391	76	16	309	27	34	109	17	151	152	84
RTOR Reduction (vph)	0	13	0	0	6	0	0	12	0	0	37	0
Lane Group Flow (vph)	0	477	0	0	346	0	34	114	0	151	199	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.6			13.6		11.6	10.5		19.9	14.8	
Effective Green, g (s)		13.6			13.6		11.6	10.5		19.9	14.8	
Actuated g/C Ratio		0.33			0.33		0.28	0.25		0.48	0.36	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		640			650		369	508		604	692	
v/s Ratio Prot							0.00	0.06		c0.03	c0.10	
v/s Ratio Perm		c0.24			0.17		0.02			0.09		
v/c Ratio		0.75			0.53		0.09	0.22		0.25	0.29	
Uniform Delay, d1		12.4			11.4		11.0	12.3		6.3	9.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.7			0.8		0.1	0.2		0.2	0.2	
Delay (s)		17.1			12.2		11.1	12.5		6.5	9.8	
Level of Service		B			B		B	B		A	A	
Approach Delay (s)		17.1			12.2			12.2			8.5	
Approach LOS		B			B			B			A	

Intersection Summary

HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	538	60	92	474	43	113	132	171	402	222	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.99		1.00	0.92		1.00	0.94	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		2007			2014		1947	1875		1947	1933	
Flt Permitted		0.73			0.78		0.42	1.00		0.19	1.00	
Satd. Flow (perm)		1476			1574		860	1875		398	1933	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	585	65	100	515	47	123	143	186	437	241	147
RTOR Reduction (vph)	0	3	0	0	3	0	0	47	0	0	22	0
Lane Group Flow (vph)	0	801	0	0	659	0	123	282	0	437	366	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		54.0			54.0		21.6	16.6		37.6	28.6	
Effective Green, g (s)		54.0			54.0		21.6	16.6		37.6	28.6	
Actuated g/C Ratio		0.54			0.54		0.22	0.17		0.38	0.29	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		800			853		241	313		415	555	
v/s Ratio Prot							0.03	0.15		c0.18	0.19	
v/s Ratio Perm		c0.54			0.42		0.09			c0.22		
v/c Ratio		1.00			0.77		0.51	0.90		1.05	0.66	
Uniform Delay, d1		22.8			18.0		32.8	40.7		26.9	31.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		32.1			4.4		1.8	27.4		58.8	2.8	
Delay (s)		54.9			22.4		34.7	68.1		85.7	34.1	
Level of Service		D			C		C	E		F	C	
Approach Delay (s)		54.9			22.4			59.0			61.4	
Approach LOS		D			C			E			E	

Intersection Summary

HCM Average Control Delay	49.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	135	543	420	151	445	395	529	1113	156	268	946	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1947	3893	1742	1947	2049	1742	1947	3821		1947	3893	1742
Flt Permitted	0.22	1.00	1.00	0.22	1.00	1.00	0.17	1.00		0.20	1.00	1.00
Satd. Flow (perm)	455	3893	1742	453	2049	1742	342	3821		410	3893	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	590	457	164	484	429	575	1210	170	291	1028	301
RTOR Reduction (vph)	0	0	226	0	0	329	0	14	0	0	0	193
Lane Group Flow (vph)	147	590	231	164	484	100	575	1366	0	291	1028	108
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt			pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Actuated Green, G (s)	25.7	18.0	18.0	25.9	18.1	18.1	42.0	29.0		29.0	20.0	20.0
Effective Green, g (s)	25.7	18.0	18.0	25.9	18.1	18.1	42.0	29.0		29.0	20.0	20.0
Actuated g/C Ratio	0.32	0.23	0.23	0.32	0.23	0.23	0.53	0.36		0.36	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	291	878	393	293	465	395	542	1389		322	976	437
v/s Ratio Prot	0.05	0.15		c0.05	c0.24		c0.24	0.36		0.10	0.26	
v/s Ratio Perm	0.11		0.13	0.13		0.06	c0.32			0.23		0.06
v/c Ratio	0.51	0.67	0.59	0.56	1.04	0.25	1.06	0.98		0.90	1.05	0.25
Uniform Delay, d1	21.2	28.2	27.6	20.5	30.8	25.3	21.7	25.2		20.9	29.9	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	2.0	2.2	2.3	52.8	0.3	55.8	20.1		27.1	43.9	0.3
Delay (s)	22.5	30.2	29.8	22.8	83.6	25.7	77.5	45.3		48.0	73.8	24.2
Level of Service	C	C	C	C	F	C	E	D		D	E	C
Approach Delay (s)		29.1			51.3			54.8			59.9	
Approach LOS		C			D			D			E	

Intersection Summary

HCM Average Control Delay	50.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
96: E Church Ave & Golden State Blvd

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	184	615	366	224	825	550	674	1463	176	494	1097	700
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1947	3893	1742	1947	2049	1742	1947	3831		1947	3893	1742
Flt Permitted	0.13	1.00	1.00	0.13	1.00	1.00	0.10	1.00		0.11	1.00	1.00
Satd. Flow (perm)	261	3893	1742	264	2049	1742	205	3831		228	3893	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	668	398	243	897	598	733	1590	191	537	1192	761
RTOR Reduction (vph)	0	0	179	0	0	203	0	7	0	0	0	161
Lane Group Flow (vph)	200	668	219	243	897	395	733	1774	0	537	1192	600
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt			pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Actuated Green, G (s)	38.4	31.4	31.4	51.0	40.0	40.0	71.0	43.0		60.0	36.0	36.0
Effective Green, g (s)	38.4	31.4	31.4	51.0	40.0	40.0	71.0	43.0		60.0	36.0	36.0
Actuated g/C Ratio	0.30	0.24	0.24	0.39	0.31	0.31	0.55	0.33		0.46	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	168	940	421	306	630	536	527	1267		423	1078	482
v/s Ratio Prot	c0.06	0.17		0.10	c0.44		c0.33	c0.46		0.23	0.31	
v/s Ratio Perm	0.29		0.13	0.22		0.23	0.43			0.35		0.34
v/c Ratio	1.19	0.71	0.52	0.79	1.42	0.74	1.39	1.40		1.27	1.11	1.25
Uniform Delay, d1	42.5	45.1	42.8	30.6	45.0	40.3	40.3	43.5		40.5	47.0	47.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	129.9	2.6	1.2	13.2	199.9	5.3	187.3	184.8		138.8	61.2	127.1
Delay (s)	172.4	47.7	43.9	43.8	244.9	45.5	227.7	228.3		179.3	108.2	174.1
Level of Service	F	D	D	D	F	D	F	F		F	F	F
Approach Delay (s)		66.2			148.2			228.1			143.7	
Approach LOS		E			F			F			F	

Intersection Summary

HCM Average Control Delay	158.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	140.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	432	973	834	17	16	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.87	
Flt Protected	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1947	3893	3882		1781	
Flt Permitted	0.21	1.00	1.00		1.00	
Satd. Flow (perm)	425	3893	3882		1781	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	470	1058	907	18	17	346
RTOR Reduction (vph)	0	0	3	0	289	0
Lane Group Flow (vph)	470	1058	922	0	74	0
Turn Type	pm+pt					
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	30.4	30.4	15.3		7.5	
Effective Green, g (s)	30.4	30.4	15.3		7.5	
Actuated g/C Ratio	0.66	0.66	0.33		0.16	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	650	2578	1294		291	
v/s Ratio Prot	c0.18	0.27	0.24		c0.04	
v/s Ratio Perm	c0.30					
v/c Ratio	0.72	0.41	0.71		0.25	
Uniform Delay, d1	6.8	3.6	13.4		16.8	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.0	0.1	1.9		0.5	
Delay (s)	10.8	3.7	15.3		17.2	
Level of Service	B	A	B		B	
Approach Delay (s)		5.9	15.3		17.2	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	581	1534	1188	21	16	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	1.00		0.87	
Flt Protected	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1947	3893	3883		1777	
Flt Permitted	0.15	1.00	1.00		1.00	
Satd. Flow (perm)	302	3893	3883		1777	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	632	1667	1291	23	17	634
RTOR Reduction (vph)	0	0	2	0	404	0
Lane Group Flow (vph)	632	1667	1312	0	247	0
Turn Type	pm+pt					
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	46.2	46.2	23.1		12.4	
Effective Green, g (s)	46.2	46.2	23.1		12.4	
Actuated g/C Ratio	0.69	0.69	0.35		0.19	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	681	2701	1347		331	
v/s Ratio Prot	c0.27	0.43	0.34		c0.14	
v/s Ratio Perm	c0.38					
v/c Ratio	0.93	0.62	0.97		0.75	
Uniform Delay, d1	16.9	5.5	21.5		25.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	18.8	0.4	18.5		8.9	
Delay (s)	35.7	5.9	39.9		34.5	
Level of Service	D	A	D		C	
Approach Delay (s)		14.1	39.9		34.5	
Approach LOS		B	D		C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	808	43	21	802	2	33	1	4	0	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.99			1.00			0.99			0.86	
Flt Protected		1.00			1.00			0.96			1.00	
Satd. Flow (prot)		3862			3887			1937			1772	
Flt Permitted		0.95			0.92			0.76			1.00	
Satd. Flow (perm)		3653			3591			1527			1772	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	878	47	23	872	2	36	1	4	0	0	8
RTOR Reduction (vph)	0	8	0	0	1	0	0	3	0	0	6	0
Lane Group Flow (vph)	0	926	0	0	896	0	0	38	0	0	2	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.7			13.7			6.2			6.2	
Effective Green, g (s)		13.7			13.7			6.2			6.2	
Actuated g/C Ratio		0.49			0.49			0.22			0.22	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1794			1763			339			394	
v/s Ratio Prot											0.00	
v/s Ratio Perm		c0.25			0.25			c0.02				
v/c Ratio		0.52			0.51			0.11			0.00	
Uniform Delay, d1		4.8			4.8			8.7			8.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.2			0.1			0.0	
Delay (s)		5.1			5.0			8.8			8.5	
Level of Service		A			A			A			A	
Approach Delay (s)		5.1			5.0			8.8			8.5	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	27.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	607	16	39	503	0	24	0	43	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frt		1.00			1.00			0.91				
Flt Protected		1.00			1.00			0.98				
Satd. Flow (prot)		3878			3879			1838				
Flt Permitted		1.00			0.88			0.89				
Satd. Flow (perm)		3878			3441			1672				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	660	17	42	547	0	26	0	47	0	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	35	0	0	0	0
Lane Group Flow (vph)	0	672	0	0	589	0	0	38	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9			6.2				
Effective Green, g (s)		10.9			10.9			6.2				
Actuated g/C Ratio		0.43			0.43			0.25				
Clearance Time (s)		4.0			4.0			4.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		1684			1494			413				
v/s Ratio Prot		c0.17										
v/s Ratio Perm					0.17			c0.02				
v/c Ratio		0.40			0.39			0.09				
Uniform Delay, d1		4.9			4.8			7.3				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.2			0.2			0.1				
Delay (s)		5.0			5.0			7.4				
Level of Service		A			A			A				
Approach Delay (s)		5.0			5.0			7.4			0.0	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	25.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	104	335	67	137	265	26	24	1336	342	116	1262	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1947	1998		1947	2022		1947	3893	1742	1947	3893	1742
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1947	1998		1947	2022		1947	3893	1742	1947	3893	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	364	73	149	288	28	26	1452	372	126	1372	103
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	218	0	0	44
Lane Group Flow (vph)	113	427	0	149	312	0	26	1452	154	126	1372	59
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.1	16.8		7.8	18.5		2.9	23.8	23.8	6.1	27.0	27.0
Effective Green, g (s)	6.1	16.8		7.8	18.5		2.9	23.8	23.8	6.1	27.0	27.0
Actuated g/C Ratio	0.09	0.24		0.11	0.26		0.04	0.34	0.34	0.09	0.38	0.38
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	476		215	531		80	1314	588	168	1491	667
v/s Ratio Prot	0.06	c0.21		c0.08	0.15		0.01	c0.37		c0.06	c0.35	
v/s Ratio Perm									0.09			0.03
v/c Ratio	0.67	0.90		0.69	0.59		0.33	1.11	0.26	0.75	0.92	0.09
Uniform Delay, d1	31.2	26.0		30.2	22.7		32.8	23.4	17.0	31.5	20.7	13.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	19.2		9.3	1.7		2.4	58.8	0.2	17.0	9.6	0.1
Delay (s)	41.4	45.2		39.5	24.3		35.2	82.2	17.2	48.5	30.3	14.0
Level of Service	D	D		D	C		D	F	B	D	C	B
Approach Delay (s)		44.4			29.2			68.5			30.7	
Approach LOS		D			C			E			C	

Intersection Summary

HCM Average Control Delay	47.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	65	25	29	49	37	6	1	1627	39	18	2574	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1947	1882		1947	2003		1947	3893	1742	1947	3893	1742
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1947	1882		1947	2003		1947	3893	1742	1947	3893	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	27	32	53	40	7	1	1768	42	20	2798	38
RTOR Reduction (vph)	0	30	0	0	5	0	0	0	8	0	0	3
Lane Group Flow (vph)	71	29	0	53	42	0	1	1768	34	20	2798	35
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.2	8.1		6.1	8.0		1.1	90.7	90.7	2.9	92.5	92.5
Effective Green, g (s)	6.2	8.1		6.1	8.0		1.1	90.7	90.7	2.9	92.5	92.5
Actuated g/C Ratio	0.05	0.07		0.05	0.06		0.01	0.73	0.73	0.02	0.75	0.75
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	98	123		96	129		17	2852	1276	46	2909	1302
v/s Ratio Prot	c0.04	0.02		0.03	c0.02		0.00	0.45		c0.01	c0.72	
v/s Ratio Perm									0.02			0.02
v/c Ratio	0.72	0.24		0.55	0.33		0.06	0.62	0.03	0.43	0.96	0.03
Uniform Delay, d1	58.0	54.9		57.5	55.3		60.8	8.1	4.5	59.6	14.1	4.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.1	1.0		6.7	1.5		1.5	0.4	0.0	6.5	9.4	0.0
Delay (s)	81.1	55.9		64.2	56.8		62.3	8.5	4.5	66.1	23.5	4.0
Level of Service	F	E		E	E		E	A	A	E	C	A
Approach Delay (s)		69.7			60.7			8.5			23.5	
Approach LOS		E			E			A			C	

Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Volume (vph)	378	405	159	954	670	18	183	182	1365	412	254	2038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.95	1.00	0.97	0.95
Frt	1.00	0.96		1.00	1.00			1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3776	3728		3776	3878			3776	3893	1742	3776	3893
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3776	3728		3776	3878			3776	3893	1742	3776	3893
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	411	440	173	1037	728	20	199	198	1484	448	276	2215
RTOR Reduction (vph)	0	30	0	0	2	0	0	0	0	133	0	0
Lane Group Flow (vph)	411	583	0	1037	746	0	0	397	1484	315	276	2215
Turn Type	Prot			Prot			Prot	Prot		Perm	Prot	
Protected Phases	3	8		7	4		5	5	2		1	6
Permitted Phases										2		
Actuated Green, G (s)	16.0	17.0		29.0	30.0			12.0	65.2	65.2	12.8	66.0
Effective Green, g (s)	16.0	17.0		29.0	30.0			12.0	65.2	65.2	12.8	66.0
Actuated g/C Ratio	0.11	0.12		0.21	0.21			0.09	0.47	0.47	0.09	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	432	453		782	831			324	1813	811	345	1835
v/s Ratio Prot	0.11	c0.16		c0.27	0.19			c0.11	0.38		0.07	c0.57
v/s Ratio Perm										0.18		
v/c Ratio	0.95	1.29		1.33	0.90			1.23	0.82	0.39	0.80	1.21
Uniform Delay, d1	61.6	61.5		55.5	53.5			64.0	32.3	24.4	62.3	37.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.0	145.1		155.6	12.4			125.7	3.0	0.3	12.5	98.6
Delay (s)	92.6	206.6		211.1	65.9			189.7	35.3	24.7	74.8	135.6
Level of Service	F	F		F	E			F	D	C	E	F
Approach Delay (s)		160.9			150.2				59.6			108.1
Approach LOS		F			F				E			F

Intersection Summary

HCM Average Control Delay	110.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	123.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR
Lane Configurations	
Volume (vph)	610
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1742
Flt Permitted	1.00
Satd. Flow (perm)	1742
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	663
RTOR Reduction (vph)	132
Lane Group Flow (vph)	531
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	66.0
Effective Green, g (s)	66.0
Actuated g/C Ratio	0.47
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	821
v/s Ratio Prot	
v/s Ratio Perm	0.31
v/c Ratio	0.65
Uniform Delay, d1	28.1
Progression Factor	1.00
Incremental Delay, d2	1.8
Delay (s)	29.9
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Volume (vph)	653	621	517	1124	914	32	281	271	1920	443	502	2970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.95	1.00	0.97	0.95
Frt	1.00	0.93		1.00	0.99			1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3776	3628		3776	3873			3776	3893	1742	3776	3893
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3776	3628		3776	3873			3776	3893	1742	3776	3893
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	710	675	562	1222	993	35	305	295	2087	482	546	3228
RTOR Reduction (vph)	0	100	0	0	1	0	0	0	0	95	0	0
Lane Group Flow (vph)	710	1137	0	1222	1027	0	0	600	2087	387	546	3228
Turn Type	Prot			Prot			Prot	Prot		Perm	Prot	
Protected Phases	3	8		7	4		5	5	2		1	6
Permitted Phases										2		
Actuated Green, G (s)	15.0	28.0		24.0	37.0			12.0	70.0	70.0	12.0	70.0
Effective Green, g (s)	15.0	28.0		24.0	37.0			12.0	70.0	70.0	12.0	70.0
Actuated g/C Ratio	0.10	0.19		0.16	0.25			0.08	0.47	0.47	0.08	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	378	677		604	955			302	1817	813	302	1817
v/s Ratio Prot	0.19	c0.31		c0.32	0.27			c0.16	0.54		0.14	c0.83
v/s Ratio Perm										0.22		
v/c Ratio	1.88	1.68		2.02	1.08			1.99	1.15	0.48	1.81	1.78
Uniform Delay, d1	67.5	61.0		63.0	56.5			69.0	40.0	27.4	69.0	40.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	405.2	312.2		466.2	51.7			455.7	73.8	0.4	376.5	351.7
Delay (s)	472.7	373.2		529.2	108.2			524.7	113.8	27.9	445.5	391.7
Level of Service	F	F		F	F			F	F	C	F	F
Approach Delay (s)		409.5			336.9				178.5			342.4
Approach LOS		F			F				F			F

Intersection Summary

HCM Average Control Delay	308.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	177.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWR
Lane Configurations	↱
Volume (vph)	649
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1742
Flt Permitted	1.00
Satd. Flow (perm)	1742
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	705
RTOR Reduction (vph)	90
Lane Group Flow (vph)	615
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	70.0
Effective Green, g (s)	70.0
Actuated g/C Ratio	0.47
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	813
v/s Ratio Prot	
v/s Ratio Perm	0.35
v/c Ratio	0.76
Uniform Delay, d1	33.0
Progression Factor	1.00
Incremental Delay, d2	4.1
Delay (s)	37.0
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

HANFORD FUTURE PLUS PROJECT
CONDITIONS - MITIGATED

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	754	26	117	907	28	0	0	49	0	0	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0			4.0
Lane Util. Factor	1.00	0.95		1.00	0.95				1.00			1.00
Frt	1.00	1.00		1.00	1.00				0.86			0.86
Flt Protected	0.95	1.00		0.95	1.00				1.00			1.00
Satd. Flow (prot)	1770	3522		1770	3524				1611			1611
Flt Permitted	0.95	1.00		0.95	1.00				1.00			1.00
Satd. Flow (perm)	1770	3522		1770	3524				1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	820	28	127	986	30	0	0	53	0	0	614
RTOR Reduction (vph)	0	4	0	0	3	0	0	0	37	0	0	234
Lane Group Flow (vph)	52	844	0	127	1013	0	0	0	16	0	0	380
Turn Type	Prot			Prot					custom			custom
Protected Phases	7	4		3	8							
Permitted Phases									2			6
Actuated Green, G (s)	4.0	19.0		5.7	20.7				15.7			15.7
Effective Green, g (s)	4.0	19.0		5.7	20.7				15.7			15.7
Actuated g/C Ratio	0.08	0.36		0.11	0.40				0.30			0.30
Clearance Time (s)	4.0	4.0		4.0	4.0				4.0			4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0			3.0
Lane Grp Cap (vph)	135	1277		193	1392				483			483
v/s Ratio Prot	0.03	0.24		c0.07	c0.29							
v/s Ratio Perm									0.01			c0.24
v/c Ratio	0.39	0.66		0.66	0.73				0.03			0.79
Uniform Delay, d1	23.0	14.0		22.4	13.5				13.0			16.8
Progression Factor	1.00	1.00		1.00	1.00				1.00			1.00
Incremental Delay, d2	1.8	1.3		7.9	1.9				0.0			8.3
Delay (s)	24.9	15.3		30.3	15.4				13.0			25.1
Level of Service	C	B		C	B				B			C
Approach Delay (s)		15.9			17.0			13.0			25.1	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	838	988	33	40	1009	59	0	0	315	0	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0				4.0			4.0
Lane Util. Factor	1.00	0.95		1.00	0.95				1.00			1.00
Frt	1.00	1.00		1.00	0.99				0.86			0.86
Flt Protected	0.95	1.00		0.95	1.00				1.00			1.00
Satd. Flow (prot)	1770	3522		1770	3510				1611			1611
Flt Permitted	0.95	1.00		0.95	1.00				1.00			1.00
Satd. Flow (perm)	1770	3522		1770	3510				1611			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	911	1074	36	43	1097	64	0	0	342	0	0	103
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	211	0	0	93
Lane Group Flow (vph)	911	1109	0	43	1158	0	0	0	131	0	0	10
Turn Type	Prot			Prot					custom			custom
Protected Phases	7	4		3	8							
Permitted Phases									2			6
Actuated Green, G (s)	74.1	114.1		6.8	46.8				14.8			14.8
Effective Green, g (s)	74.1	114.1		6.8	46.8				14.8			14.8
Actuated g/C Ratio	0.50	0.77		0.05	0.32				0.10			0.10
Clearance Time (s)	4.0	4.0		4.0	4.0				4.0			4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0			3.0
Lane Grp Cap (vph)	888	2721		81	1112				161			161
v/s Ratio Prot	c0.51	0.31		0.02	c0.33							
v/s Ratio Perm									c0.08			0.01
v/c Ratio	1.03	0.41		0.53	1.04				0.82			0.06
Uniform Delay, d1	36.8	5.6		68.9	50.4				65.1			60.2
Progression Factor	1.00	1.00		1.00	1.00				1.00			1.00
Incremental Delay, d2	37.0	0.1		6.5	38.5				26.3			0.2
Delay (s)	73.8	5.7		75.4	88.9				91.4			60.3
Level of Service	E	A		E	F				F			E
Approach Delay (s)		36.4			88.4			91.4			60.3	
Approach LOS		D			F			F			E	

Intersection Summary

HCM Average Control Delay	59.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	147.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (vph)	40	0	145	0	276	0	0	585	102	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.98			
Flt Protected	0.95		1.00		1.00			1.00			
Satd. Flow (prot)	1770		1583		1863			1825			
Flt Permitted	0.95		1.00		1.00			1.00			
Satd. Flow (perm)	1770		1583		1863			1825			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	0	158	0	300	0	0	636	111	0	0
RTOR Reduction (vph)	0	0	137	0	0	0	0	9	0	0	0
Lane Group Flow (vph)	43	0	21	0	300	0	0	738	0	0	0
Turn Type	custom		custom								
Protected Phases					2			6			
Permitted Phases	8		8								
Actuated Green, G (s)	5.1		5.1		26.0			26.0			
Effective Green, g (s)	5.1		5.1		26.0			26.0			
Actuated g/C Ratio	0.13		0.13		0.66			0.66			
Clearance Time (s)	4.0		4.0		4.0			4.0			
Vehicle Extension (s)	3.0		3.0		3.0			3.0			
Lane Grp Cap (vph)	231		206		1239			1214			
v/s Ratio Prot					0.16			c0.40			
v/s Ratio Perm	c0.02		0.01								
v/c Ratio	0.19		0.10		0.24			0.61			
Uniform Delay, d1	15.2		15.0		2.6			3.7			
Progression Factor	1.00		1.00		1.00			1.00			
Incremental Delay, d2	0.4		0.2		0.1			0.9			
Delay (s)	15.5		15.2		2.7			4.6			
Level of Service	B		B		A			A			
Approach Delay (s)		15.3			2.7			4.6		0.0	
Approach LOS		B			A			A		A	

Intersection Summary

HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (vph)	48	0	209	0	746	0	0	332	134	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.96			
Flt Protected	0.95		1.00		1.00			1.00			
Satd. Flow (prot)	1770		1583		1863			1790			
Flt Permitted	0.95		1.00		1.00			1.00			
Satd. Flow (perm)	1770		1583		1863			1790			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	0	227	0	811	0	0	361	146	0	0
RTOR Reduction (vph)	0	0	152	0	0	0	0	22	0	0	0
Lane Group Flow (vph)	52	0	75	0	811	0	0	485	0	0	0
Turn Type	custom		custom								
Protected Phases					2			6			
Permitted Phases	8		8								
Actuated Green, G (s)	7.9		7.9		27.3			27.3			
Effective Green, g (s)	7.9		7.9		27.3			27.3			
Actuated g/C Ratio	0.18		0.18		0.63			0.63			
Clearance Time (s)	4.0		4.0		4.0			4.0			
Vehicle Extension (s)	3.0		3.0		3.0			3.0			
Lane Grp Cap (vph)	324		289		1177			1131			
v/s Ratio Prot					c0.44			0.27			
v/s Ratio Perm	0.03		c0.05								
v/c Ratio	0.16		0.26		0.69			0.43			
Uniform Delay, d1	14.9		15.1		5.2			4.0			
Progression Factor	1.00		1.00		1.00			1.00			
Incremental Delay, d2	0.2		0.5		1.7			0.3			
Delay (s)	15.1		15.6		6.9			4.3			
Level of Service	B		B		A			A			
Approach Delay (s)		15.5			6.9			4.3		0.0	
Approach LOS		B			A			A		A	

Intersection Summary

HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	110	0	228	0	273	35	0	574	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.98			1.00			
Flt Protected	0.95		1.00		1.00			1.00			
Satd. Flow (prot)	1770		1583		1834			1863			
Flt Permitted	0.95		1.00		1.00			1.00			
Satd. Flow (perm)	1770		1583		1834			1863			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	0	248	0	297	38	0	624	0	0	0
RTOR Reduction (vph)	0	0	152	0	8	0	0	0	0	0	0
Lane Group Flow (vph)	120	0	96	0	327	0	0	624	0	0	0
Turn Type	custom		custom								
Protected Phases					2			6			
Permitted Phases	4		4								
Actuated Green, G (s)	6.6		6.6		19.4			19.4			
Effective Green, g (s)	6.6		6.6		19.4			19.4			
Actuated g/C Ratio	0.19		0.19		0.57			0.57			
Clearance Time (s)	4.0		4.0		4.0			4.0			
Vehicle Extension (s)	3.0		3.0		3.0			3.0			
Lane Grp Cap (vph)	344		307		1046			1063			
v/s Ratio Prot					0.18			c0.33			
v/s Ratio Perm	c0.07		0.06								
v/c Ratio	0.35		0.31		0.31			0.59			
Uniform Delay, d1	11.8		11.8		3.8			4.7			
Progression Factor	1.00		1.00		1.00			1.00			
Incremental Delay, d2	0.6		0.6		0.2			0.8			
Delay (s)	12.5		12.3		4.0			5.5			
Level of Service	B		B		A			A			
Approach Delay (s)		12.4			4.0			5.5		0.0	
Approach LOS		B			A			A		A	

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	34.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	105	0	213	0	822	109	0	290	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.98			1.00			
Flt Protected	0.95		1.00		1.00			1.00			
Satd. Flow (prot)	1770		1583		1833			1863			
Flt Permitted	0.95		1.00		1.00			1.00			
Satd. Flow (perm)	1770		1583		1833			1863			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	0	232	0	893	118	0	315	0	0	0
RTOR Reduction (vph)	0	0	193	0	6	0	0	0	0	0	0
Lane Group Flow (vph)	114	0	39	0	1005	0	0	315	0	0	0
Turn Type	custom		custom								
Protected Phases					2			6			
Permitted Phases	4		4								
Actuated Green, G (s)	8.7		8.7		35.3			35.3			
Effective Green, g (s)	8.7		8.7		35.3			35.3			
Actuated g/C Ratio	0.17		0.17		0.68			0.68			
Clearance Time (s)	4.0		4.0		4.0			4.0			
Vehicle Extension (s)	3.0		3.0		3.0			3.0			
Lane Grp Cap (vph)	296		265		1244			1265			
v/s Ratio Prot					c0.55			0.17			
v/s Ratio Perm	c0.06		0.02								
v/c Ratio	0.39		0.15		0.81			0.25			
Uniform Delay, d1	19.3		18.5		5.9			3.2			
Progression Factor	1.00		1.00		1.00			1.00			
Incremental Delay, d2	0.8		0.3		3.9			0.1			
Delay (s)	20.1		18.7		9.9			3.3			
Level of Service	C		B		A			A			
Approach Delay (s)		19.2			9.9			3.3		0.0	
Approach LOS		B			A			A		A	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	569	7	47	828	11	6	12	17	79	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.94			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3532		1770	3532			1728			1697	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3532		1770	3532			1728			1697	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	618	8	51	900	12	7	13	18	86	15	109
RTOR Reduction (vph)	0	1	0	0	1	0	0	16	0	0	54	0
Lane Group Flow (vph)	105	625	0	51	911	0	0	22	0	0	156	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	5.9	22.0		4.2	20.3			6.5			10.4	
Effective Green, g (s)	5.9	22.0		4.2	20.3			6.5			10.4	
Actuated g/C Ratio	0.10	0.37		0.07	0.34			0.11			0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	177	1315		126	1213			190			299	
v/s Ratio Prot	c0.06	0.18		0.03	c0.26			c0.01			c0.09	
v/s Ratio Perm												
v/c Ratio	0.59	0.48		0.40	0.75			0.12			0.52	
Uniform Delay, d1	25.5	14.1		26.3	17.2			23.7			22.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.2	0.3		2.1	2.7			0.3			1.6	
Delay (s)	30.7	14.4		28.4	19.8			24.0			23.7	
Level of Service	C	B		C	B			C			C	
Approach Delay (s)		16.8			20.3			24.0			23.7	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	1032	13	18	1057	9	47	155	67	16	7	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.97			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3533		1770	3535			1784			1712	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (perm)	1770	3533		1770	3535			1784			1712	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	1122	14	20	1149	10	51	168	73	17	8	23
RTOR Reduction (vph)	0	1	0	0	1	0	0	15	0	0	21	0
Lane Group Flow (vph)	60	1135	0	20	1158	0	0	277	0	0	27	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	4.2	28.9		1.3	26.0			13.9			6.7	
Effective Green, g (s)	4.2	28.9		1.3	26.0			13.9			6.7	
Actuated g/C Ratio	0.06	0.43		0.02	0.39			0.21			0.10	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	111	1528		34	1376			371			172	
v/s Ratio Prot	c0.03	c0.32		0.01	c0.33			c0.16			c0.02	
v/s Ratio Perm												
v/c Ratio	0.54	0.74		0.59	0.84			0.75			0.16	
Uniform Delay, d1	30.4	15.8		32.5	18.5			24.8			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.3	2.0		23.4	4.9			8.0			0.4	
Delay (s)	35.6	17.8		55.9	23.4			32.8			27.9	
Level of Service	D	B		E	C			C			C	
Approach Delay (s)		18.7			23.9			32.8			27.9	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	556	13	4	791	4	12	5	6	4	8	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			1.00	
Satd. Flow (prot)	1770	3527		1770	3537			1747			1639	
Flt Permitted	0.95	1.00		0.95	1.00			0.97			1.00	
Satd. Flow (perm)	1770	3527		1770	3537			1747			1639	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	604	14	4	860	4	13	5	7	4	9	95
RTOR Reduction (vph)	0	2	0	0	1	0	0	6	0	0	84	0
Lane Group Flow (vph)	95	616	0	4	863	0	0	19	0	0	24	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	5.8	25.5		1.1	20.8			6.3			6.7	
Effective Green, g (s)	5.8	25.5		1.1	20.8			6.3			6.7	
Actuated g/C Ratio	0.10	0.46		0.02	0.37			0.11			0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	185	1618		35	1323			198			198	
v/s Ratio Prot	c0.05	0.17		0.00	c0.24			c0.01			c0.01	
v/s Ratio Perm												
v/c Ratio	0.51	0.38		0.11	0.65			0.09			0.12	
Uniform Delay, d1	23.6	9.9		26.8	14.4			22.1			21.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.4	0.2		1.5	1.2			0.2			0.3	
Delay (s)	26.0	10.0		28.2	15.6			22.3			22.1	
Level of Service	C	B		C	B			C			C	
Approach Delay (s)		12.1			15.6			22.3			22.1	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	997	9	3	973	10	0	42	23	2	3	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.95			0.87	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	3534		1770	3534			1774			1621	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)	1770	3534		1770	3534			1774			1621	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	1084	10	3	1058	11	0	46	25	2	3	113
RTOR Reduction (vph)	0	0	0	0	1	0	0	22	0	0	101	0
Lane Group Flow (vph)	111	1094	0	3	1068	0	0	49	0	0	17	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	6.1	31.7		1.1	26.7			7.2			6.7	
Effective Green, g (s)	6.1	31.7		1.1	26.7			7.2			6.7	
Actuated g/C Ratio	0.10	0.51		0.02	0.43			0.11			0.11	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	172	1787		31	1505			204			173	
v/s Ratio Prot	c0.06	0.31		0.00	c0.30			c0.03			c0.01	
v/s Ratio Perm												
v/c Ratio	0.65	0.61		0.10	0.71			0.24			0.10	
Uniform Delay, d1	27.3	11.1		30.3	14.8			25.3			25.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	8.0	0.6		1.4	1.6			0.6			0.3	
Delay (s)	35.3	11.7		31.7	16.4			25.9			25.5	
Level of Service	D	B		C	B			C			C	
Approach Delay (s)		13.9			16.4			25.9			25.5	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	539	16	114	780	4	7	6	44	2	7	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.90			0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	3524		1770	3537			1661			1689	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (perm)	1770	3524		1770	3537			1661			1689	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	586	17	124	848	4	8	7	48	2	8	20
RTOR Reduction (vph)	0	3	0	0	1	0	0	42	0	0	18	0
Lane Group Flow (vph)	4	600	0	124	851	0	0	21	0	0	12	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	1.0	18.0		6.1	23.1			6.5			6.2	
Effective Green, g (s)	1.0	18.0		6.1	23.1			6.5			6.2	
Actuated g/C Ratio	0.02	0.34		0.12	0.44			0.12			0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	34	1201		204	1547			204			198	
v/s Ratio Prot	0.00	0.17		c0.07	c0.24			c0.01			c0.01	
v/s Ratio Perm												
v/c Ratio	0.12	0.50		0.61	0.55			0.10			0.06	
Uniform Delay, d1	25.5	13.8		22.2	11.0			20.6			20.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.5	0.3		5.1	0.4			0.2			0.1	
Delay (s)	27.0	14.2		27.3	11.4			20.8			20.8	
Level of Service	C	B		C	B			C			C	
Approach Delay (s)		14.2			13.4			20.8			20.8	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	994	21	45	912	8	12	8	132	3	13	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.88			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	3528		1770	3534			1638			1729	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)	1770	3528		1770	3534			1638			1729	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	1080	23	49	991	9	13	9	143	3	14	17
RTOR Reduction (vph)	0	2	0	0	1	0	0	126	0	0	15	0
Lane Group Flow (vph)	23	1101	0	49	999	0	0	39	0	0	19	0
Turn Type	Prot			Prot			Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)	1.3	26.0		4.1	28.8			7.2			6.4	
Effective Green, g (s)	1.3	26.0		4.1	28.8			7.2			6.4	
Actuated g/C Ratio	0.02	0.44		0.07	0.48			0.12			0.11	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	39	1536		122	1705			198			185	
v/s Ratio Prot	0.01	c0.31		c0.03	c0.28			c0.02			c0.01	
v/s Ratio Perm												
v/c Ratio	0.59	0.72		0.40	0.59			0.20			0.10	
Uniform Delay, d1	28.9	13.8		26.6	11.1			23.6			24.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	20.8	1.6		2.2	0.5			0.5			0.2	
Delay (s)	49.7	15.5		28.8	11.7			24.1			24.3	
Level of Service	D	B		C	B			C			C	
Approach Delay (s)		16.2			12.5			24.1			24.3	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	24	66	107	18	20	65	231	191	55	513	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.98		1.00	0.93		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1691			1763		1770	1736		1770	1855	
Flt Permitted		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1691			1763		1770	1736		1770	1855	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	26	72	116	20	22	71	251	208	60	558	15
RTOR Reduction (vph)	0	65	0	0	8	0	0	29	0	0	1	0
Lane Group Flow (vph)	0	48	0	0	150	0	71	430	0	60	572	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		6.0			9.0		4.2	29.4		4.1	29.3	
Effective Green, g (s)		6.0			9.0		4.2	29.4		4.1	29.3	
Actuated g/C Ratio		0.09			0.14		0.07	0.46		0.06	0.45	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		157			246		115	791		113	843	
v/s Ratio Prot		c0.03			c0.09		c0.04	0.25		0.03	c0.31	
v/s Ratio Perm												
v/c Ratio		0.30			0.61		0.62	0.54		0.53	0.68	
Uniform Delay, d1		27.3			26.1		29.4	12.7		29.3	13.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1			4.4		9.5	0.8		4.7	2.2	
Delay (s)		28.4			30.5		38.8	13.5		34.0	16.1	
Level of Service		C			C		D	B		C	B	
Approach Delay (s)		28.4			30.5			16.9			17.8	
Approach LOS		C			C			B			B	

Intersection Summary

HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	18	71	175	27	39	96	782	132	15	240	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.98		1.00	0.98	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1758		1770	1823		1770	1825	
Flt Permitted		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1689			1758		1770	1823		1770	1825	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	20	77	190	29	42	104	850	143	16	261	41
RTOR Reduction (vph)	0	51	0	0	6	0	0	5	0	0	4	0
Lane Group Flow (vph)	0	74	0	0	255	0	104	988	0	16	298	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		10.0			17.1		10.7	63.4		2.8	55.5	
Effective Green, g (s)		10.0			17.1		10.7	63.4		2.8	55.5	
Actuated g/C Ratio		0.09			0.16		0.10	0.58		0.03	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		155			275		173	1057		45	927	
v/s Ratio Prot		c0.04			c0.15		c0.06	c0.54		0.01	0.16	
v/s Ratio Perm												
v/c Ratio		0.48			0.93		0.60	0.94		0.36	0.32	
Uniform Delay, d1		47.2			45.5		47.3	21.1		52.4	15.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3			35.2		5.8	14.5		4.8	0.2	
Delay (s)		49.5			80.7		53.0	35.6		57.1	16.0	
Level of Service		D			F		D	D		E	B	
Approach Delay (s)		49.5			80.7			37.3			18.1	
Approach LOS		D			F			D			B	

Intersection Summary

HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

BAKERSFIELD FUTURE PLUS PROJECT
CONDITIONS - MITIGATED

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1265	419	0	2224	1341	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2			4.9	4.9	
Lane Util. Factor	0.97			0.91	0.91	
Frt	0.96			1.00	0.97	
Flt Protected	0.96			1.00	1.00	
Satd. Flow (prot)	3353			5085	4920	
Flt Permitted	0.96			1.00	1.00	
Satd. Flow (perm)	3353			5085	4920	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1375	455	0	2417	1458	402
RTOR Reduction (vph)	7	0	0	0	41	0
Lane Group Flow (vph)	1823	0	0	2417	1819	0
Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	56.8			54.1	54.1	
Effective Green, g (s)	56.8			54.1	54.1	
Actuated g/C Ratio	0.47			0.45	0.45	
Clearance Time (s)	4.2			4.9	4.9	
Vehicle Extension (s)	3.0			4.0	4.0	
Lane Grp Cap (vph)	1587			2292	2218	
v/s Ratio Prot	c0.54			c0.48	0.37	
v/s Ratio Perm						
v/c Ratio	1.15			1.05	0.82	
Uniform Delay, d1	31.6			33.0	28.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	74.8			35.1	2.7	
Delay (s)	106.4			68.1	31.4	
Level of Service	F			E	C	
Approach Delay (s)	106.4			68.1	31.4	
Approach LOS	F			E	C	

Intersection Summary			
HCM Average Control Delay	68.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	628	651	0	1437	1134	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2			4.9	4.9	
Lane Util. Factor	0.97			0.91	0.91	
Frt	0.92			1.00	0.96	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	3258			5085	4866	
Flt Permitted	0.98			1.00	1.00	
Satd. Flow (perm)	3258			5085	4866	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	683	708	0	1562	1233	497
RTOR Reduction (vph)	7	0	0	0	133	0
Lane Group Flow (vph)	1384	0	0	1562	1597	0
Turn Type						
Protected Phases	4			2	6	
Permitted Phases						
Actuated Green, G (s)	24.8			21.1	21.1	
Effective Green, g (s)	24.8			21.1	21.1	
Actuated g/C Ratio	0.45			0.38	0.38	
Clearance Time (s)	4.2			4.9	4.9	
Vehicle Extension (s)	3.0			4.0	4.0	
Lane Grp Cap (vph)	1469			1951	1867	
v/s Ratio Prot	c0.42			0.31	c0.33	
v/s Ratio Perm						
v/c Ratio	0.96dr			0.80	0.86	
Uniform Delay, d1	14.4			15.1	15.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	12.3			2.6	4.2	
Delay (s)	26.7			17.7	19.8	
Level of Service	C			B	B	
Approach Delay (s)	26.7			17.7	19.8	
Approach LOS	C			B	B	

Intersection Summary

HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

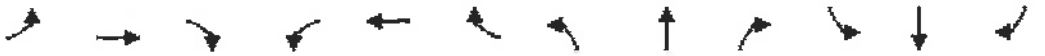
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	109	65	298	223	400	98	1524	193	95	1483	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	4999		1770	5056	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1770	4999		1770	5056	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	118	71	324	242	435	107	1657	210	103	1612	64
RTOR Reduction (vph)	0	0	57	0	0	182	0	17	0	0	4	0
Lane Group Flow (vph)	122	118	14	324	242	253	107	1850	0	103	1672	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.1	15.7	15.7	9.8	19.4	19.4	6.0	29.6		6.0	29.6	
Effective Green, g (s)	6.1	15.7	15.7	9.8	19.4	19.4	6.0	29.6		6.0	29.6	
Actuated g/C Ratio	0.08	0.20	0.20	0.13	0.25	0.25	0.08	0.38		0.08	0.38	
Clearance Time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Vehicle Extension (s)	2.0	5.4	5.4	2.0	5.3	5.3	2.0	4.5		2.0	5.2	
Lane Grp Cap (vph)	138	710	317	430	877	392	136	1890		136	1911	
v/s Ratio Prot	0.07	0.03		c0.09	0.07		c0.06	c0.37		0.06	0.33	
v/s Ratio Perm			0.01			c0.16						
v/c Ratio	0.88	0.17	0.04	0.75	0.28	0.65	0.79	0.98		0.76	0.87	
Uniform Delay, d1	35.7	25.9	25.3	33.1	23.8	26.4	35.5	24.0		35.4	22.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.8	0.3	0.1	6.5	0.4	5.2	23.5	15.9		19.0	5.2	
Delay (s)	78.6	26.2	25.4	39.6	24.2	31.6	59.1	39.9		54.4	27.9	
Level of Service	E	C	C	D	C	C	E	D		D	C	
Approach Delay (s)		46.5			32.4			40.9			29.4	
Approach LOS		D			C			D			C	

Intersection Summary

HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	17.2
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	208	195	197	283	282	350	111	1458	267	103	2238	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	4967		1770	5061	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1770	4967		1770	5061	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	212	214	308	307	380	121	1585	290	112	2433	79
RTOR Reduction (vph)	0	0	96	0	0	116	0	19	0	0	2	0
Lane Group Flow (vph)	226	212	118	308	307	264	121	1856	0	112	2510	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	17.3	26.0	26.0	14.6	23.3	23.3	9.3	66.0		11.2	67.9	
Effective Green, g (s)	17.3	26.0	26.0	14.6	23.3	23.3	9.3	66.0		11.2	67.9	
Actuated g/C Ratio	0.13	0.19	0.19	0.11	0.17	0.17	0.07	0.49		0.08	0.50	
Clearance Time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Vehicle Extension (s)	2.0	5.4	5.4	2.0	5.3	5.3	2.0	4.5		2.0	5.2	
Lane Grp Cap (vph)	227	682	305	371	611	273	122	2428		147	2545	
v/s Ratio Prot	c0.13	0.06		0.09	0.09		c0.07	0.37		0.06	c0.50	
v/s Ratio Perm			c0.07			c0.17						
v/c Ratio	1.00	0.31	0.39	0.83	0.50	0.97	0.99	0.76		0.76	0.99	
Uniform Delay, d1	58.8	46.8	47.5	59.0	50.6	55.5	62.8	28.2		60.6	33.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	58.1	0.6	1.9	13.9	1.5	45.8	78.6	1.7		18.7	14.7	
Delay (s)	116.9	47.4	49.5	72.9	52.1	101.3	141.4	29.8		79.3	47.8	
Level of Service	F	D	D	E	D	F	F	C		E	D	
Approach Delay (s)		72.2			77.3			36.6			49.1	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	52.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	342	39	381	277	4	659	58	56	2	88	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.9	5.9	4.0	5.9		4.2	4.2			4.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3532		3433	1725			1794	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3532		3433	1725			1794	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	372	42	414	301	4	716	63	61	2	96	36
RTOR Reduction (vph)	0	0	30	0	1	0	0	24	0	0	11	0
Lane Group Flow (vph)	21	372	12	414	304	0	716	100	0	0	123	0
Turn Type	Prot		Perm	Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2									
Actuated Green, G (s)	2.1	21.3	21.3	32.5	51.7		32.1	32.1			12.5	
Effective Green, g (s)	2.1	21.3	21.3	32.5	51.7		32.1	32.1			12.5	
Actuated g/C Ratio	0.02	0.18	0.18	0.28	0.44		0.28	0.28			0.11	
Clearance Time (s)	4.0	5.9	5.9	4.0	5.9		4.2	4.2			4.2	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0			2.0	
Lane Grp Cap (vph)	32	646	289	493	1565		944	474			192	
v/s Ratio Prot	0.01	c0.11		c0.23	0.09		c0.21	0.06			c0.07	
v/s Ratio Perm			0.01									
v/c Ratio	0.66	0.58	0.04	0.84	0.19		0.76	0.21			0.64	
Uniform Delay, d1	56.9	43.6	39.3	39.6	19.8		38.7	32.6			50.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	39.4	1.5	0.1	11.9	0.1		3.8	0.3			5.4	
Delay (s)	96.3	45.1	39.4	51.6	19.9		42.5	32.9			55.4	
Level of Service	F	D	D	D	B		D	C			E	
Approach Delay (s)		47.0			38.1			41.1			55.4	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	116.7	Sum of lost time (s)	18.3
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	462	53	312	403	4	479	84	104	3	107	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.9	5.9	4.0	5.9		4.2	4.2			4.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3534		3433	1708			1774	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3534		3433	1708			1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	502	58	339	438	4	521	91	113	3	116	63
RTOR Reduction (vph)	0	0	32	0	1	0	0	35	0	0	16	0
Lane Group Flow (vph)	64	502	26	339	441	0	521	169	0	0	166	0
Turn Type	Prot		Perm	Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2									
Actuated Green, G (s)	7.0	21.7	21.7	22.5	37.2		24.1	24.1			14.1	
Effective Green, g (s)	7.0	21.7	21.7	22.5	37.2		24.1	24.1			14.1	
Actuated g/C Ratio	0.07	0.22	0.22	0.22	0.37		0.24	0.24			0.14	
Clearance Time (s)	4.0	5.9	5.9	4.0	5.9		4.2	4.2			4.2	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0			2.0	
Lane Grp Cap (vph)	123	763	341	395	1306		822	409			248	
v/s Ratio Prot	0.04	c0.14		c0.19	0.12		c0.15	0.10			c0.09	
v/s Ratio Perm			0.02									
v/c Ratio	0.52	0.66	0.08	0.86	0.34		0.63	0.41			0.67	
Uniform Delay, d1	45.2	36.1	31.5	37.6	22.9		34.3	32.3			41.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.9	2.3	0.1	16.6	0.2		1.8	0.9			5.2	
Delay (s)	49.2	38.4	31.6	54.2	23.1		36.2	33.3			46.3	
Level of Service	D	D	C	D	C		D	C			D	
Approach Delay (s)		38.9			36.6			35.3			46.3	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	18.3
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	35	3	9	46	43	13	398	11	35	201	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.94		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1804			1744		1770	1855		1770	1846	
Flt Permitted		0.77			0.95		0.61	1.00		0.50	1.00	
Satd. Flow (perm)		1421			1671		1144	1855		934	1846	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	38	3	10	50	47	14	433	12	38	218	14
RTOR Reduction (vph)	0	3	0	0	40	0	0	2	0	0	4	0
Lane Group Flow (vph)	0	91	0	0	67	0	14	443	0	38	228	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		4.6			4.6		18.4	18.4		18.4	18.4	
Effective Green, g (s)		4.6			4.6		18.4	18.4		18.4	18.4	
Actuated g/C Ratio		0.15			0.15		0.59	0.59		0.59	0.59	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		211			248		679	1101		554	1096	
v/s Ratio Prot								c0.24			0.12	
v/s Ratio Perm		c0.06			0.04		0.01			0.04		
v/c Ratio		0.43			0.27		0.02	0.40		0.07	0.21	
Uniform Delay, d1		12.0			11.7		2.6	3.4		2.7	2.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4			0.6		0.0	0.2		0.1	0.1	
Delay (s)		13.4			12.3		2.6	3.6		2.7	3.0	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		13.4			12.3			3.6			3.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	31.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	58	21	32	65	56	17	415	22	71	584	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.95		1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788			1753		1770	1849		1770	1834	
Flt Permitted		0.87			0.93		0.30	1.00		0.46	1.00	
Satd. Flow (perm)		1574			1639		560	1849		862	1834	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	63	23	35	71	61	18	451	24	77	635	73
RTOR Reduction (vph)	0	17	0	0	46	0	0	3	0	0	6	0
Lane Group Flow (vph)	0	115	0	0	121	0	18	472	0	77	702	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.0			7.0		23.8	23.8		23.8	23.8	
Effective Green, g (s)		7.0			7.0		23.8	23.8		23.8	23.8	
Actuated g/C Ratio		0.18			0.18		0.61	0.61		0.61	0.61	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		284			296		344	1134		529	1125	
v/s Ratio Prot								0.26			c0.38	
v/s Ratio Perm		0.07			c0.07		0.03			0.09		
v/c Ratio		0.40			0.41		0.05	0.42		0.15	0.62	
Uniform Delay, d1		14.1			14.1		3.0	3.9		3.2	4.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9			0.9		0.1	0.2		0.1	1.1	
Delay (s)		15.0			15.0		3.1	4.1		3.3	5.8	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		15.0			15.0			4.1			5.5	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	38.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1308	1003	0	1249	23	479	16	705	31	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.0		5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91	1.00		0.91	1.00	0.95	0.91	0.95	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085	1583		5085	1583	1681	1479	1504	1770		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.89		1.00
Satd. Flow (perm)	1770	5085	1583		5085	1583	1681	1479	1504	1656		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1422	1090	0	1358	25	521	17	766	34	0	37
RTOR Reduction (vph)	0	0	0	0	0	11	0	105	105	0	0	35
Lane Group Flow (vph)	11	1422	1090	0	1358	14	453	325	316	34	0	2
Turn Type	Prot		Free			Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases			Free						3	4		4
Actuated Green, G (s)	1.2	35.8	82.8		30.5	30.5	29.3	29.3	29.3	4.5		4.5
Effective Green, g (s)	1.2	35.8	82.8		30.5	30.5	29.3	29.3	29.3	4.5		4.5
Actuated g/C Ratio	0.01	0.43	1.00		0.37	0.37	0.35	0.35	0.35	0.05		0.05
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	26	2199	1583		1873	583	595	523	532	90		86
v/s Ratio Prot	0.01	0.28			0.27	0.01	0.27	0.22				
v/s Ratio Perm			c0.69						0.21	0.02		0.00
v/c Ratio	0.42	0.65	0.69		0.73	0.02	0.76	0.62	0.59	0.38		0.02
Uniform Delay, d1	40.5	18.5	0.0		22.5	16.7	23.7	22.2	21.9	37.8		37.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	4.0	0.9	2.5		1.6	0.0	6.7	3.2	2.7	1.0		0.0
Delay (s)	44.5	19.4	2.5		24.1	16.7	30.4	25.4	24.6	38.8		37.1
Level of Service	D	B	A		C	B	C	C	C	D		D
Approach Delay (s)		12.2			24.0			26.8			37.9	
Approach LOS		B			C			C			D	

Intersection Summary

HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	82.8	Sum of lost time (s)	0.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1168	1202	0	2243	68	301	9	586	55	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.0		5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91	1.00		0.91	1.00	0.95	0.91	0.95	1.00		1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	1770	5085	1583		5085	1583	1681	1466	1504	1770		1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.54		1.00
Satd. Flow (perm)	1770	5085	1583		5085	1583	1681	1466	1504	1003		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	1270	1307	0	2438	74	327	10	637	60	0	80
RTOR Reduction (vph)	0	0	0	0	0	15	0	68	68	0	0	75
Lane Group Flow (vph)	75	1270	1307	0	2438	59	294	274	270	60	0	5
Turn Type	Prot		Free			Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases			Free						3	4		4
Actuated Green, G (s)	6.4	71.0	121.2		60.5	60.5	28.7	28.7	28.7	8.3		8.3
Effective Green, g (s)	6.4	71.0	121.2		60.5	60.5	28.7	28.7	28.7	8.3		8.3
Actuated g/C Ratio	0.05	0.59	1.00		0.50	0.50	0.24	0.24	0.24	0.07		0.07
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	93	2979	1583		2538	790	398	347	356	69		108
v/s Ratio Prot	0.04	0.25			c0.48	0.04	0.17	0.19				
v/s Ratio Perm			c0.83						0.18	0.06		0.00
v/c Ratio	0.81	0.43	0.83		0.96	0.08	0.74	0.79	0.76	0.87		0.05
Uniform Delay, d1	56.8	13.9	0.0		29.2	15.8	42.8	43.4	43.0	55.9		52.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	36.4	0.2	5.1		10.3	0.1	8.5	13.0	10.6	62.8		0.1
Delay (s)	93.2	14.1	5.1		39.5	15.9	51.2	56.4	53.6	118.7		52.8
Level of Service	F	B	A		D	B	D	E	D	F		D
Approach Delay (s)		11.9			38.8			53.9			81.1	
Approach LOS		B			D			D			F	

Intersection Summary

HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	121.2	Sum of lost time (s)	5.3
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	765	1124	116	52	585	118	229	485	82	90	210	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.94	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	4975		1770	3203	1441
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	4975		1770	3203	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	832	1222	126	57	636	128	249	527	89	98	228	296
RTOR Reduction (vph)	0	0	54	0	0	85	0	19	0	0	62	136
Lane Group Flow (vph)	832	1222	72	57	636	43	249	597	0	98	299	27
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	29.9	44.1	44.1	5.4	19.6	19.6	11.7	19.1		8.5	15.9	15.9
Effective Green, g (s)	29.9	44.1	44.1	5.4	19.6	19.6	11.7	19.1		8.5	15.9	15.9
Actuated g/C Ratio	0.31	0.45	0.45	0.06	0.20	0.20	0.12	0.20		0.09	0.16	0.16
Clearance Time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Vehicle Extension (s)	1.0	2.0	2.0	0.5	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	1056	1606	718	191	1025	319	413	978		155	524	236
v/s Ratio Prot	0.24	c0.35		0.02	c0.13		c0.07	c0.12		0.06	0.09	
v/s Ratio Perm			0.05			0.03						0.02
v/c Ratio	0.79	0.76	0.10	0.30	0.62	0.13	0.60	0.61		0.63	0.57	0.11
Uniform Delay, d1	30.8	22.2	15.2	44.1	35.4	31.8	40.5	35.7		42.8	37.5	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	2.0	0.0	0.3	0.8	0.1	1.7	0.8		6.0	0.9	0.1
Delay (s)	34.4	24.1	15.2	44.4	36.3	31.9	42.3	36.4		48.9	38.4	34.7
Level of Service	C	C	B	D	D	C	D	D		D	D	C
Approach Delay (s)		27.5			36.1			38.1			39.1	
Approach LOS		C			D			D			D	

Intersection Summary

HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	15.5
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	503	823	206	177	1070	104	278	527	59	134	746	685
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	5009		1770	3264	1441
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	5009		1770	3264	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	547	895	224	192	1163	113	302	573	64	146	811	745
RTOR Reduction (vph)	0	0	132	0	0	35	0	9	0	0	20	233
Lane Group Flow (vph)	547	895	92	192	1163	78	302	628	0	146	1059	244
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	21.4	39.1	39.1	14.5	32.2	32.2	16.3	47.1		15.5	46.3	46.3
Effective Green, g (s)	21.4	39.1	39.1	14.5	32.2	32.2	16.3	47.1		15.5	46.3	46.3
Actuated g/C Ratio	0.16	0.29	0.29	0.11	0.24	0.24	0.12	0.35		0.11	0.34	0.34
Clearance Time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Vehicle Extension (s)	1.0	2.0	2.0	0.5	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	539	1015	454	365	1201	374	411	1731		201	1109	489
v/s Ratio Prot	c0.16	0.25		0.06	c0.23		c0.09	0.13		0.08	c0.32	
v/s Ratio Perm			0.06			0.05						0.17
v/c Ratio	1.01	0.88	0.20	0.53	0.97	0.21	0.73	0.36		0.73	0.96	0.50
Uniform Delay, d1	57.5	46.4	36.8	57.6	51.5	41.8	57.9	33.4		58.4	44.0	35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	42.5	8.9	0.1	0.6	18.5	0.1	5.8	0.0		10.5	17.0	0.3
Delay (s)	100.0	55.3	36.9	58.3	70.1	41.9	63.7	33.4		68.9	61.0	36.1
Level of Service	F	E	D	E	E	D	E	C		E	E	D
Approach Delay (s)		67.5			66.3			43.2			54.7	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	59.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	136.3	Sum of lost time (s)	20.1
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	284	113	295	344	181	199	1747	178	180	1361	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.4		5.2	4.4		3.7	4.4	4.4	3.7	4.4	4.4
Lane Util. Factor	0.97	0.91		0.97	0.91		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.96		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4868		3433	4822		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4868		3433	4822		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	309	123	321	374	197	216	1899	193	196	1479	264
RTOR Reduction (vph)	0	82	0	0	109	0	0	0	114	0	0	131
Lane Group Flow (vph)	212	350	0	321	462	0	216	1899	79	196	1479	133
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	6.8	14.9		8.8	16.9		13.6	36.2	36.2	10.4	33.0	33.0
Effective Green, g (s)	6.8	14.9		8.8	16.9		13.6	36.2	36.2	10.4	33.0	33.0
Actuated g/C Ratio	0.08	0.17		0.10	0.19		0.15	0.41	0.41	0.12	0.38	0.38
Clearance Time (s)	5.2	4.4		5.2	4.4		3.7	4.4	4.4	3.7	4.4	4.4
Vehicle Extension (s)	2.0	5.2		2.0	5.2		2.0	5.2	5.2	2.0	5.2	5.2
Lane Grp Cap (vph)	265	824		343	926		274	2092	651	209	1907	594
v/s Ratio Prot	0.06	0.07		c0.09	c0.10		0.12	c0.37		c0.11	0.29	
v/s Ratio Perm									0.05			0.08
v/c Ratio	0.80	0.42		0.94	0.50		0.79	0.91	0.12	0.94	0.78	0.22
Uniform Delay, d1	39.9	32.7		39.3	31.8		35.8	24.3	16.1	38.5	24.2	18.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.8		31.8	0.9		12.9	6.6	0.2	44.1	2.4	0.4
Delay (s)	54.8	33.5		71.1	32.7		48.7	31.0	16.2	82.6	26.7	19.2
Level of Service	D	C		E	C		D	C	B	F	C	B
Approach Delay (s)		40.5			46.5			31.4			31.3	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	374	649	329	479	421	165	161	1654	257	290	1870	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.4		5.2	4.4		3.7	4.4	4.4	3.7	4.4	4.4
Lane Util. Factor	0.97	0.91		0.97	0.91		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4828		3433	4871		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4828		3433	4871		1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	705	358	521	458	179	175	1798	279	315	2033	332
RTOR Reduction (vph)	0	71	0	0	54	0	0	0	129	0	0	86
Lane Group Flow (vph)	407	992	0	521	583	0	175	1798	150	315	2033	246
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	18.7	25.6		18.8	25.7		12.3	46.6	46.6	21.3	55.6	55.6
Effective Green, g (s)	18.7	25.6		18.8	25.7		12.3	46.6	46.6	21.3	55.6	55.6
Actuated g/C Ratio	0.14	0.20		0.14	0.20		0.09	0.36	0.36	0.16	0.43	0.43
Clearance Time (s)	5.2	4.4		5.2	4.4		3.7	4.4	4.4	3.7	4.4	4.4
Vehicle Extension (s)	2.0	5.2		2.0	5.2		2.0	5.2	5.2	2.0	5.2	5.2
Lane Grp Cap (vph)	494	951		496	963		167	1823	567	290	2175	677
v/s Ratio Prot	0.12	c0.21		c0.15	0.12		0.10	c0.35		c0.18	0.40	
v/s Ratio Perm									0.09			0.16
v/c Ratio	0.82	1.04		1.05	0.61		1.05	0.99	0.26	1.09	0.93	0.36
Uniform Delay, d1	54.1	52.2		55.6	47.5		58.9	41.4	29.6	54.4	35.5	25.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.2	41.2		54.3	1.7		82.9	17.9	0.6	77.8	8.6	0.7
Delay (s)	64.3	93.4		109.9	49.2		141.7	59.3	30.1	132.1	44.0	25.9
Level of Service	E	F		F	D		F	E	C	F	D	C
Approach Delay (s)		85.3			76.5			62.1			52.2	
Approach LOS		F			E			E			D	

Intersection Summary

HCM Average Control Delay	65.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1343	1042	135	133	534	58	401	624	420	107	263	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5011		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5011		3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1460	1133	147	145	580	63	436	678	457	116	286	450
RTOR Reduction (vph)	0	0	55	0	9	0	0	0	148	0	0	380
Lane Group Flow (vph)	1460	1133	92	145	634	0	436	678	309	116	286	70
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	56.2	52.8	52.8	24.2	20.8		17.1	30.6	30.6	7.2	20.7	20.7
Effective Green, g (s)	56.2	52.8	52.8	24.2	20.8		17.1	30.6	30.6	7.2	20.7	20.7
Actuated g/C Ratio	0.42	0.40	0.40	0.18	0.16		0.13	0.23	0.23	0.05	0.16	0.16
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	0.5	2.0	2.0	0.5	2.0		0.5	2.0	2.0	0.5	2.0	2.0
Lane Grp Cap (vph)	1451	1405	628	625	784		441	814	364	186	551	246
v/s Ratio Prot	c0.43	c0.32		0.04	0.13		c0.13	0.19		c0.03	0.08	
v/s Ratio Perm			0.06						c0.20			0.04
v/c Ratio	1.01	0.81	0.15	0.23	0.81		0.99	0.83	0.85	0.62	0.52	0.28
Uniform Delay, d1	38.4	35.6	25.7	46.5	54.2		57.9	48.8	49.0	61.6	51.6	49.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.1	3.3	0.0	0.1	5.8		39.4	7.0	16.1	4.6	0.3	0.2
Delay (s)	63.5	38.9	25.7	46.5	60.0		97.2	55.8	65.0	66.2	51.9	49.8
Level of Service	E	D	C	D	E		F	E	E	E	D	D
Approach Delay (s)		51.3			57.5			70.0			52.8	
Approach LOS		D			E			E			D	

Intersection Summary

HCM Average Control Delay	57.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1001	1367	335	447	1221	88	283	603	299	113	822	949
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5034		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5034		3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1088	1486	364	486	1327	96	308	655	325	123	893	1032
RTOR Reduction (vph)	0	0	89	0	6	0	0	0	177	0	0	269
Lane Group Flow (vph)	1088	1486	275	486	1417	0	308	655	148	123	893	763
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	31.0	53.1	53.1	14.0	36.1		10.0	32.8	32.8	21.9	44.7	44.7
Effective Green, g (s)	31.0	53.1	53.1	14.0	36.1		10.0	32.8	32.8	21.9	44.7	44.7
Actuated g/C Ratio	0.22	0.38	0.38	0.10	0.26		0.07	0.23	0.23	0.16	0.32	0.32
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9		4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	0.5	2.0	2.0	0.5	2.0		0.5	2.0	2.0	0.5	2.0	2.0
Lane Grp Cap (vph)	760	1342	600	343	1298		245	829	371	537	1130	505
v/s Ratio Prot	c0.32	c0.42		0.14	0.28		c0.09	0.19		0.04	0.25	
v/s Ratio Perm			0.17						0.09			c0.48
v/c Ratio	1.43	1.11	0.46	1.42	1.09		1.26	0.79	0.40	0.23	0.79	1.51
Uniform Delay, d1	54.5	43.4	32.7	63.0	51.9		65.0	50.4	45.3	51.7	43.4	47.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	201.8	59.5	0.2	204.0	53.9		144.5	4.8	0.3	0.1	3.6	240.1
Delay (s)	256.3	103.0	32.9	267.0	105.9		209.5	55.2	45.5	51.7	47.0	287.8
Level of Service	F	F	C	F	F		F	E	D	D	D	F
Approach Delay (s)		151.1			146.9			89.6			168.6	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	144.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	3	18	15	30	13	29	9	39	76	494	1206	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.76	
Frt		1.00	0.90		1.00	0.91			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1675		1770	1690			1770	5085	3610	
Flt Permitted		0.70	1.00		0.73	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1308	1675		1351	1690			1770	5085	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	20	16	33	14	32	10	42	83	537	1311	41
RTOR Reduction (vph)	0	0	31	0	0	37	0	0	0	0	2	0
Lane Group Flow (vph)	0	23	18	0	14	47	0	0	83	537	1350	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		6.4	6.4		6.4	6.4			6.3	21.3	40.0	
Effective Green, g (s)		6.4	6.4		6.4	6.4			6.3	21.3	40.0	
Actuated g/C Ratio		0.07	0.07		0.07	0.07			0.07	0.22	0.41	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		87	111		89	112			115	1120	1493	
v/s Ratio Prot			0.01			c0.03			0.05	0.11	c0.37	
v/s Ratio Perm		0.02			0.01							
v/c Ratio		0.26	0.16		0.16	0.42			0.72	0.48	0.90	
Uniform Delay, d1		42.9	42.6		42.6	43.4			44.3	32.9	26.6	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.3		0.3	0.9			17.1	1.1	9.3	
Delay (s)		43.5	42.9		42.9	44.3			61.5	34.0	35.9	
Level of Service		D	D		D	D			E	C	D	
Approach Delay (s)			43.1			44.1				36.4		
Approach LOS			D			D				D		

Intersection Summary

HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	19.6
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	8	71	23	32	24	14	7	62	96	738	1812	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.76	
Frt		1.00	0.91		1.00	0.88			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1700		1770	1630			1770	5085	3610	
Flt Permitted		0.61	1.00		0.72	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1130	1700		1337	1630			1770	5085	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	77	25	35	26	15	8	67	104	802	1970	39
RTOR Reduction (vph)	0	0	32	0	0	61	0	0	0	0	1	0
Lane Group Flow (vph)	0	86	28	0	26	29	0	0	104	802	2008	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		13.3	13.3		13.3	13.3			7.3	27.8	71.4	
Effective Green, g (s)		13.3	13.3		13.3	13.3			7.3	27.8	71.4	
Actuated g/C Ratio		0.09	0.09		0.09	0.09			0.05	0.19	0.50	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		105	158		124	151			90	986	1797	
v/s Ratio Prot			0.02			0.02			0.06	0.16	c0.56	
v/s Ratio Perm		c0.08			0.02							
v/c Ratio		0.82	0.18		0.21	0.19			1.16	0.81	1.12	
Uniform Delay, d1		63.9	60.0		60.2	60.1			68.0	55.3	36.0	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		35.5	0.2		0.3	0.2			142.8	6.4	61.1	
Delay (s)		99.4	60.2		60.5	60.3			210.9	61.7	97.1	
Level of Service		F	E		E	E			F	E	F	
Approach Delay (s)			83.3			60.4				91.4		
Approach LOS			F			E				F		

Intersection Summary

HCM Average Control Delay	75.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	143.4	Sum of lost time (s)	19.6
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Volume (vph)	23	116	622	15	1388	157	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1		4.7		
Lane Util. Factor		1.00	0.91		0.94		
Frt		1.00	1.00		0.98		
Flt Protected		0.95	1.00		0.96		
Satd. Flow (prot)		1770	5068		4921		
Flt Permitted		0.95	1.00		0.96		
Satd. Flow (perm)		1770	5068		4921		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	126	676	16	1509	171	115
RTOR Reduction (vph)	0	0	2	0	6	0	0
Lane Group Flow (vph)	0	151	690	0	1789	0	0
Turn Type	Prot	Prot					
Protected Phases	1	1	6		7		
Permitted Phases							
Actuated Green, G (s)		9.4	24.4		40.0		
Effective Green, g (s)		9.4	24.4		40.0		
Actuated g/C Ratio		0.10	0.25		0.41		
Clearance Time (s)		4.7	5.1		4.7		
Vehicle Extension (s)		2.0	6.8		8.0		
Lane Grp Cap (vph)		172	1279		2036		
v/s Ratio Prot		c0.09	c0.14		0.36		
v/s Ratio Perm							
v/c Ratio		0.88	0.54		0.88		
Uniform Delay, d1		43.1	31.3		26.1		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		35.2	1.2		5.7		
Delay (s)		78.2	32.5		31.8		
Level of Service		E	C		C		
Approach Delay (s)			40.7		31.8		
Approach LOS			D		C		

Intersection Summary

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	115	14	1068	18	1	1556	59	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1			4.7		
Lane Util. Factor		1.00	0.91			0.94		
Frt		1.00	1.00			0.99		
Flt Protected		0.95	1.00			0.95		
Satd. Flow (prot)		1770	5072			4976		
Flt Permitted		0.95	1.00			0.92		
Satd. Flow (perm)		1770	5072			4806		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	15	1161	20	1	1691	64	29
RTOR Reduction (vph)	0	0	1	0	0	1	0	0
Lane Group Flow (vph)	0	140	1180	0	0	1784	0	0
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			7		
Permitted Phases					7			
Actuated Green, G (s)		11.3	31.8			71.4		
Effective Green, g (s)		11.3	31.8			71.4		
Actuated g/C Ratio		0.08	0.22			0.50		
Clearance Time (s)		4.7	5.1			4.7		
Vehicle Extension (s)		2.0	6.8			8.0		
Lane Grp Cap (vph)		139	1125			2393		
v/s Ratio Prot		c0.08	c0.23					
v/s Ratio Perm						0.37		
v/c Ratio		1.01	1.05			0.75		
Uniform Delay, d1		66.0	55.8			28.7		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		78.2	40.7			2.1		
Delay (s)		144.3	96.5			30.9		
Level of Service		F	F			C		
Approach Delay (s)			101.5			30.9		
Approach LOS			F			C		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	1650	336	0	608	66	74	176	34	86	181	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	0.97	0.91			0.91		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.97			0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4956			5010		1770	3453		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4956			5010		1770	3453		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	242	1793	365	0	661	72	80	191	37	93	197	55
RTOR Reduction (vph)	0	30	0	0	13	0	0	17	0	0	0	45
Lane Group Flow (vph)	242	2128	0	0	720	0	80	211	0	93	197	10
Turn Type	Prot						Split			Split		Perm
Protected Phases	1	6			2		4	4		8	8	
Permitted Phases												8
Actuated Green, G (s)	8.9	38.6			26.0		10.1	10.1		13.7	13.7	13.7
Effective Green, g (s)	8.9	38.6			26.0		10.1	10.1		13.7	13.7	13.7
Actuated g/C Ratio	0.12	0.50			0.34		0.13	0.13		0.18	0.18	0.18
Clearance Time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	1.5	4.5			4.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	399	2501			1703		234	456		317	334	283
v/s Ratio Prot	0.07	c0.43			0.14		0.05	c0.06		0.05	c0.11	
v/s Ratio Perm												0.01
v/c Ratio	0.61	0.85			0.42		0.34	0.46		0.29	0.59	0.03
Uniform Delay, d1	32.1	16.5			19.5		30.2	30.7		27.2	28.8	25.9
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	3.2			0.3		0.9	0.7		0.5	2.7	0.1
Delay (s)	33.9	19.7			19.8		31.1	31.4		27.7	31.5	26.0
Level of Service	C	B			B		C	C		C	C	C
Approach Delay (s)		21.1			19.8			31.3			29.6	
Approach LOS		C			B			C			C	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	14.1
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1030	2489	681	0	742	82	351	381	75	80	279	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	0.97	0.91			0.91		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.97			0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4921			5010		1770	3451		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4921			5010		1770	3451		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1120	2705	740	0	807	89	382	414	82	87	303	189
RTOR Reduction (vph)	0	33	0	0	9	0	0	11	0	0	0	156
Lane Group Flow (vph)	1120	3412	0	0	887	0	382	485	0	87	303	33
Turn Type	Prot						Split			Split		Perm
Protected Phases	1	6			2		4	4		8	8	
Permitted Phases												8
Actuated Green, G (s)	47.3	82.5			31.5		26.4	26.4		26.1	26.1	26.1
Effective Green, g (s)	47.3	82.5			31.5		26.4	26.4		26.1	26.1	26.1
Actuated g/C Ratio	0.32	0.55			0.21		0.18	0.18		0.18	0.18	0.18
Clearance Time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	1.5	4.5			4.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1089	2723			1058		313	611		310	326	277
v/s Ratio Prot	0.33	c0.69			0.18		c0.22	0.14		0.05	c0.16	
v/s Ratio Perm												0.02
v/c Ratio	1.03	1.25			0.84		1.22	0.79		0.28	0.93	0.12
Uniform Delay, d1	50.9	33.3			56.4		61.3	58.7		53.4	60.6	51.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.8	117.1			6.5		124.6	7.0		0.5	31.7	0.2
Delay (s)	85.7	150.4			62.8		185.9	65.8		53.9	92.3	52.0
Level of Service	F	F			E		F	E		D	F	D
Approach Delay (s)		134.5			62.8			118.1			73.4	
Approach LOS		F			E			F			E	

Intersection Summary

HCM Average Control Delay	118.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	149.1	Sum of lost time (s)	14.1
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	14	24	37	3	22	212	139	146	11	64	20	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	16	12	12	16	12	12
Total Lost time (s)		5.2	5.2			5.2	5.2			5.2		
Lane Util. Factor		1.00	1.00			0.95	0.95			1.00		
Frt		1.00	0.85			1.00	0.93			0.95		
Flt Protected		0.95	1.00			0.95	1.00			1.00		
Satd. Flow (prot)		1770	1583			1681	1856			1993		
Flt Permitted		0.95	1.00			0.56	0.97			0.66		
Satd. Flow (perm)		1770	1583			989	1811			1329		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	26	40	3	24	230	151	159	12	70	22	29
RTOR Reduction (vph)	0	0	2	0	0	0	22	0	0	6	0	0
Lane Group Flow (vph)	0	41	41	0	0	231	311	0	0	127	0	0
Turn Type	Split		Perm		Perm	Perm			Perm			
Protected Phases	3	3					4			4		
Permitted Phases			3		4	4			4			
Actuated Green, G (s)		5.4	5.4			31.8	31.8			31.8		
Effective Green, g (s)		5.4	5.4			31.8	31.8			31.8		
Actuated g/C Ratio		0.04	0.04			0.21	0.21			0.21		
Clearance Time (s)		5.2	5.2			5.2	5.2			5.2		
Vehicle Extension (s)		2.0	2.0			4.5	4.5			4.5		
Lane Grp Cap (vph)		64	57			212	387			284		
v/s Ratio Prot		0.02										
v/s Ratio Perm			c0.03			c0.23	0.17			0.10		
v/c Ratio		0.64	0.72			1.09	0.80			0.45		
Uniform Delay, d1		70.7	70.9			58.4	55.5			50.8		
Progression Factor		1.00	1.00			1.00	1.00			1.00		
Incremental Delay, d2		15.2	31.3			87.8	12.7			1.9		
Delay (s)		85.9	102.2			146.2	68.1			52.7		
Level of Service		F	F			F	E			D		
Approach Delay (s)		94.2					100.1			52.7		
Approach LOS		F					F			D		

Intersection Summary

HCM Average Control Delay	121.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	148.7	Sum of lost time (s)	21.5
Intersection Capacity Utilization	111.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations								
Volume (vph)	55	2438	226	37	69	105	3215	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.9				5.2	5.9	
Lane Util. Factor	1.00	0.91				1.00	0.91	
Frt	1.00	0.99				1.00	1.00	
Flt Protected	0.95	1.00				0.95	1.00	
Satd. Flow (prot)	1770	5011				1770	5081	
Flt Permitted	0.95	1.00				0.95	1.00	
Satd. Flow (perm)	1770	5011				1770	5081	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	2650	246	40	75	114	3495	22
RTOR Reduction (vph)	0	1	0	0	0	0	0	0
Lane Group Flow (vph)	60	2935	0	0	0	189	3517	0
Turn Type	Prot				Prot	Prot		
Protected Phases	1	6			5	5	2	
Permitted Phases								
Actuated Green, G (s)	6.7	77.2				12.8	83.3	
Effective Green, g (s)	6.7	77.2				12.8	83.3	
Actuated g/C Ratio	0.05	0.52				0.09	0.56	
Clearance Time (s)	5.2	5.9				5.2	5.9	
Vehicle Extension (s)	2.0	3.6				2.0	4.3	
Lane Grp Cap (vph)	80	2602				152	2846	
v/s Ratio Prot	0.03	0.59				c0.11	c0.69	
v/s Ratio Perm								
v/c Ratio	0.75	1.13				1.24	1.24	
Uniform Delay, d1	70.2	35.7				67.9	32.7	
Progression Factor	1.00	1.00				1.00	1.00	
Incremental Delay, d2	29.0	63.2				152.9	109.2	
Delay (s)	99.2	98.9				220.8	141.9	
Level of Service	F	F				F	F	
Approach Delay (s)		98.9					146.0	
Approach LOS		F					F	

Intersection Summary

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	SEL	SET
Lane Configurations												
Volume (vph)	28	7	29	304	40	48	17	67	4	12	65	4400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	16	12	12	12	12
Total Lost time (s)		5.2	5.2	5.2	5.2			5.2			5.2	5.9
Lane Util. Factor		1.00	1.00	0.95	0.95			1.00			1.00	0.91
Frt		1.00	0.85	1.00	0.96			0.98			1.00	1.00
Flt Protected		0.95	1.00	0.95	0.97			0.99			0.95	1.00
Satd. Flow (prot)		1770	1583	1681	1880			2049			1770	5066
Flt Permitted		0.95	1.00	0.59	0.69			0.79			0.95	1.00
Satd. Flow (perm)		1770	1583	1052	1337			1623			1770	5066
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	8	32	330	43	52	18	73	4	13	71	4783
RTOR Reduction (vph)	0	0	0	0	7	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	38	32	211	207	0	0	105	0	0	71	4909
Turn Type	Split		Perm	Perm			Perm				Prot	
Protected Phases	3	3			4			4			1	6
Permitted Phases			3	4			4					
Actuated Green, G (s)		5.3	5.3	27.0	27.0			27.0			6.8	85.0
Effective Green, g (s)		5.3	5.3	27.0	27.0			27.0			6.8	85.0
Actuated g/C Ratio		0.04	0.04	0.18	0.18			0.18			0.05	0.57
Clearance Time (s)		5.2	5.2	5.2	5.2			5.2			5.2	5.9
Vehicle Extension (s)		2.0	2.0	4.5	4.5			4.5			2.0	3.6
Lane Grp Cap (vph)		63	56	191	243			295			81	2898
v/s Ratio Prot		c0.02									0.04	c0.97
v/s Ratio Perm			0.02	c0.20	0.15			0.06				
v/c Ratio		0.60	0.57	1.10	0.85			0.36			0.88	1.69
Uniform Delay, d1		70.6	70.5	60.8	58.8			53.2			70.5	31.8
Progression Factor		1.00	1.00	1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		10.7	8.5	95.9	25.1			1.3			58.7	313.7
Delay (s)		81.3	79.0	156.7	84.0			54.5			129.2	345.5
Level of Service		F	E	F	F			D			F	F
Approach Delay (s)		80.2			120.1			54.5				342.4
Approach LOS		F			F			D				F

Intersection Summary

HCM Average Control Delay	255.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	148.6	Sum of lost time (s)	27.4
Intersection Capacity Utilization	137.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations						
Volume (vph)	96	20	112	50	3523	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)				5.2	5.9	
Lane Util. Factor				1.00	0.91	
Frt				1.00	1.00	
Flt Protected				0.95	1.00	
Satd. Flow (prot)				1770	5075	
Flt Permitted				0.95	1.00	
Satd. Flow (perm)				1770	5075	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	22	122	54	3829	51
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	176	3879	0
Turn Type			Prot	Prot		
Protected Phases			5	5	2	
Permitted Phases						
Actuated Green, G (s)				9.8	88.0	
Effective Green, g (s)				9.8	88.0	
Actuated g/C Ratio				0.07	0.59	
Clearance Time (s)				5.2	5.9	
Vehicle Extension (s)				2.0	4.3	
Lane Grp Cap (vph)				117	3005	
v/s Ratio Prot				c0.10	c0.76	
v/s Ratio Perm						
v/c Ratio				1.50	1.29	
Uniform Delay, d1				69.4	30.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				266.1	133.5	
Delay (s)				335.5	163.8	
Level of Service				F	F	
Approach Delay (s)					171.3	
Approach LOS					F	

Intersection Summary

FRESNO HEAVY MAINTENANCE FUTURE PLUS PROJECT CONDITIONS - MITIGATED

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Volume (vph)	0	454	389	0	432	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.96	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		1863	1863		1728	
Flt Permitted		1.00	1.00		0.97	
Satd. Flow (perm)		1863	1863		1728	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	493	423	0	470	193
RTOR Reduction (vph)	0	0	0	0	34	0
Lane Group Flow (vph)	0	493	423	0	629	0
Turn Type						
Protected Phases		4	8		6	
Permitted Phases						
Actuated Green, G (s)		14.1	14.1		18.0	
Effective Green, g (s)		14.1	14.1		18.0	
Actuated g/C Ratio		0.35	0.35		0.45	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		655	655		776	
v/s Ratio Prot		c0.26	0.23		c0.36	
v/s Ratio Perm						
v/c Ratio		0.75	0.65		0.81	
Uniform Delay, d1		11.5	10.9		9.6	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		4.9	2.2		6.4	
Delay (s)		16.3	13.1		16.0	
Level of Service		B	B		B	
Approach Delay (s)		16.3	13.1		16.0	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Volume (vph)	0	534	443	0	317	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		1.00	
Frt		1.00	1.00		0.95	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		1863	1863		1718	
Flt Permitted		1.00	1.00		0.97	
Satd. Flow (perm)		1863	1863		1718	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	580	482	0	345	192
RTOR Reduction (vph)	0	0	0	0	46	0
Lane Group Flow (vph)	0	580	482	0	491	0
Turn Type						
Protected Phases		4	8		6	
Permitted Phases						
Actuated Green, G (s)		16.1	16.1		15.0	
Effective Green, g (s)		16.1	16.1		15.0	
Actuated g/C Ratio		0.41	0.41		0.38	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		767	767		659	
v/s Ratio Prot		c0.31	0.26		c0.29	
v/s Ratio Perm						
v/c Ratio		0.76	0.63		0.75	
Uniform Delay, d1		9.8	9.1		10.4	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		4.3	1.6		4.6	
Delay (s)		14.1	10.7		15.0	
Level of Service		B	B		B	
Approach Delay (s)		14.1	10.7		15.0	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	331	464	0	108	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
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	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1863	1863		1770	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1863	1863		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	360	504	0	117	215
RTOR Reduction (vph)	0	0	0	0	0	154
Lane Group Flow (vph)	0	360	504	0	117	61
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		12.5	12.5		7.4	7.4
Effective Green, g (s)		12.5	12.5		7.4	7.4
Actuated g/C Ratio		0.45	0.45		0.27	0.27
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		835	835		469	420
v/s Ratio Prot		0.19	c0.27		c0.07	
v/s Ratio Perm						0.04
v/c Ratio		0.43	0.60		0.25	0.14
Uniform Delay, d1		5.3	5.8		8.1	7.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	1.2		0.3	0.2
Delay (s)		5.6	7.1		8.3	8.0
Level of Service		A	A		A	A
Approach Delay (s)		5.6	7.1		8.1	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	27.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	572	552	0	325	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
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	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1863	1863		1770	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1863	1863		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	622	600	0	353	84
RTOR Reduction (vph)	0	0	0	0	0	56
Lane Group Flow (vph)	0	622	600	0	353	28
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		18.0	18.0		13.0	13.0
Effective Green, g (s)		18.0	18.0		13.0	13.0
Actuated g/C Ratio		0.46	0.46		0.33	0.33
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		860	860		590	528
v/s Ratio Prot		c0.33	0.32		c0.20	
v/s Ratio Perm						0.02
v/c Ratio		0.72	0.70		0.60	0.05
Uniform Delay, d1		8.5	8.3		10.8	8.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.0	2.5		1.6	0.0
Delay (s)		11.5	10.8		12.5	8.9
Level of Service		B	B		B	A
Approach Delay (s)		11.5	10.8		11.8	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	0	0	7	136	45	819	79	91	19	61	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor			1.00	0.95		1.00	0.95			1.00	1.00
Frt			1.00	0.96		1.00	0.92			1.00	0.85
Flt Protected			0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)			1770	3407		1770	3255			1770	1583
Flt Permitted			0.64	1.00		0.63	1.00			0.95	1.00
Satd. Flow (perm)			1183	3407		1170	3255			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	8	148	49	890	86	99	21	66	26
RTOR Reduction (vph)	0	0	0	9	0	0	18	0	0	0	24
Lane Group Flow (vph)	0	0	8	188	0	890	167	0	0	87	2
Turn Type			Perm			Perm			Perm		Perm
Protected Phases				2			6			4	
Permitted Phases			2			6			4		4
Actuated Green, G (s)			76.7	76.7		76.7	76.7			8.5	8.5
Effective Green, g (s)			76.7	76.7		76.7	76.7			8.5	8.5
Actuated g/C Ratio			0.82	0.82		0.82	0.82			0.09	0.09
Clearance Time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)			3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			974	2804		963	2679			161	144
v/s Ratio Prot				0.06			0.05				
v/s Ratio Perm			0.01			c0.76				0.05	0.00
v/c Ratio			0.01	0.07		0.92	0.06			0.54	0.02
Uniform Delay, d1			1.5	1.5		6.1	1.5			40.5	38.5
Progression Factor			1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0	0.0		14.1	0.0			3.7	0.0
Delay (s)			1.5	1.6		20.2	1.5			44.2	38.6
Level of Service			A	A		C	A			D	D
Approach Delay (s)	0.0			1.6			17.0			42.9	
Approach LOS	A			A			B			D	

Intersection Summary

HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	0	0	38	219	34	626	197	82	41	112	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor			1.00	0.95		1.00	0.95			1.00	1.00
Frt			1.00	0.98		1.00	0.96			1.00	0.85
Flt Protected			0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)			1770	3468		1770	3383			1770	1583
Flt Permitted			0.57	1.00		0.58	1.00			0.95	1.00
Satd. Flow (perm)			1056	3468		1085	3383			1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	41	238	37	680	214	89	45	122	243
RTOR Reduction (vph)	0	0	0	11	0	0	26	0	0	0	201
Lane Group Flow (vph)	0	0	41	264	0	680	277	0	0	167	42
Turn Type			Perm			Perm			Perm		Perm
Protected Phases				2			6			4	
Permitted Phases			2			6			4		4
Actuated Green, G (s)			48.3	48.3		48.3	48.3			11.8	11.8
Effective Green, g (s)			48.3	48.3		48.3	48.3			11.8	11.8
Actuated g/C Ratio			0.71	0.71		0.71	0.71			0.17	0.17
Clearance Time (s)			4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)			3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)			749	2460		770	2399			307	274
v/s Ratio Prot				0.08			0.08				
v/s Ratio Perm			0.04			c0.63				0.09	0.03
v/c Ratio			0.05	0.11		0.88	0.12			0.54	0.15
Uniform Delay, d1			3.0	3.1		7.7	3.1			25.7	23.9
Progression Factor			1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2			0.0	0.0		11.7	0.0			2.0	0.3
Delay (s)			3.0	3.1		19.4	3.2			27.7	24.2
Level of Service			A	A		B	A			C	C
Approach Delay (s)	0.0			3.1			14.4			25.6	
Approach LOS	A			A			B			C	

Intersection Summary

HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HANFORD HEAVY MAINTENANCE FUTURE PLUS PROJECT CONDITIONS - MITIGATED

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	50	104	11	60	77	49	287	9	79	734	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.93		1.00	1.00		1.00	1.00	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712			1725		1770	1854		1770	1854	
Flt Permitted		0.91			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1581			1692		1770	1854		1770	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	54	113	12	65	84	53	312	10	86	798	25
RTOR Reduction (vph)	0	72	0	0	67	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	144	0	0	94	0	53	320	0	86	822	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4								
Actuated Green, G (s)		10.0			10.0		2.6	23.2		4.4	25.0	
Effective Green, g (s)		10.0			10.0		2.6	23.2		4.4	25.0	
Actuated g/C Ratio		0.20			0.20		0.05	0.47		0.09	0.50	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		319			341		93	867		157	934	
v/s Ratio Prot							0.03	0.17		c0.05	c0.44	
v/s Ratio Perm		c0.09			0.06							
v/c Ratio		0.45			0.28		0.57	0.37		0.55	0.88	
Uniform Delay, d1		17.4			16.7		23.0	8.5		21.6	11.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0			0.4		7.8	0.3		3.9	9.5	
Delay (s)		18.4			17.2		30.7	8.8		25.5	20.4	
Level of Service		B			B		C	A		C	C	
Approach Delay (s)		18.4			17.2			11.9			20.9	
Approach LOS		B			B			B			C	

Intersection Summary

HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Houston Ave & Central Valley Hwy

4/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	50	177	8	78	106	153	815	29	94	406	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.93		1.00	0.99		1.00	0.99	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1678			1721		1770	1853		1770	1846	
Flt Permitted		0.93			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1570			1673		1770	1853		1770	1846	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	54	192	9	85	115	166	886	32	102	441	28
RTOR Reduction (vph)	0	120	0	0	62	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	153	0	0	147	0	166	916	0	102	466	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4								
Actuated Green, G (s)		11.4			11.4		8.6	36.5		5.8	33.7	
Effective Green, g (s)		11.4			11.4		8.6	36.5		5.8	33.7	
Actuated g/C Ratio		0.17			0.17		0.13	0.56		0.09	0.51	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		272			290		232	1029		156	947	
v/s Ratio Prot							c0.09	c0.49		0.06	0.25	
v/s Ratio Perm		c0.10			0.09							
v/c Ratio		0.56			0.51		0.72	0.89		0.65	0.49	
Uniform Delay, d1		24.9			24.6		27.4	12.8		29.0	10.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.7			1.4		10.0	9.8		9.5	0.4	
Delay (s)		27.5			26.0		37.4	22.6		38.4	10.8	
Level of Service		C			C		D	C		D	B	
Approach Delay (s)		27.5			26.0			24.9			15.8	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	3	11	5	11	15	11	6	354	16	9	816	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.96			0.99			1.00	
Flt Protected		0.99			0.99			1.00			1.00	
Satd. Flow (prot)		1786			1761			1851			1859	
Flt Permitted		1.00			1.00			0.99			1.00	
Satd. Flow (perm)		1800			1787			1832			1853	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	12	5	12	16	12	7	385	17	10	887	9
RTOR Reduction (vph)	0	5	0	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	15	0	0	29	0	0	407	0	0	906	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		2.3			2.3			36.4			36.4	
Effective Green, g (s)		2.3			2.3			36.4			36.4	
Actuated g/C Ratio		0.05			0.05			0.78			0.78	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		89			88			1428			1444	
v/s Ratio Prot												
v/s Ratio Perm		0.01			c0.02			0.22			c0.49	
v/c Ratio		0.17			0.32			0.29			0.63	
Uniform Delay, d1		21.3			21.4			1.5			2.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			2.2			0.1			0.9	
Delay (s)		22.2			23.6			1.6			3.1	
Level of Service		C			C			A			A	
Approach Delay (s)		22.2			23.6			1.6			3.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	5	13	5	18	9	14	7	966	10	7	602	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.95			1.00			1.00	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1792			1740			1859			1860	
Flt Permitted		0.92			0.85			1.00			0.99	
Satd. Flow (perm)		1657			1504			1853			1842	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	14	5	20	10	15	8	1050	11	8	654	3
RTOR Reduction (vph)	0	5	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	19	0	0	31	0	0	1069	0	0	665	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		3.9			3.9			42.6			42.6	
Effective Green, g (s)		3.9			3.9			42.6			42.6	
Actuated g/C Ratio		0.07			0.07			0.78			0.78	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		119			108			1448			1440	
v/s Ratio Prot												
v/s Ratio Perm		0.01			c0.02			c0.58			0.36	
v/c Ratio		0.16			0.29			0.74			0.46	
Uniform Delay, d1		23.8			24.0			3.1			2.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			1.5			2.0			0.2	
Delay (s)		24.4			25.5			5.1			2.3	
Level of Service		C			C			A			A	
Approach Delay (s)		24.4			25.5			5.1			2.3	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

WASCO HEAVY MAINTENANCE FUTURE PLUS PROJECT CONDITIONS - MITIGATED

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	401	105	18	376	21	149	261	58	30	170	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1770	1805		1770	1848			1803			1737	
Flt Permitted	0.38	1.00		0.27	1.00			0.71			0.94	
Satd. Flow (perm)	716	1805		510	1848			1299			1643	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	436	114	20	409	23	162	284	63	33	185	196
RTOR Reduction (vph)	0	16	0	0	3	0	0	7	0	0	48	0
Lane Group Flow (vph)	295	534	0	20	429	0	0	502	0	0	366	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.4	27.4		27.4	27.4			26.2			26.2	
Effective Green, g (s)	27.4	27.4		27.4	27.4			26.2			26.2	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.43			0.43	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	318	803		227	822			552			699	
v/s Ratio Prot		0.30			0.23							
v/s Ratio Perm	c0.41			0.04				c0.39			0.22	
v/c Ratio	0.93	0.67		0.09	0.52			0.91			0.52	
Uniform Delay, d1	16.2	13.5		9.9	12.4			16.6			13.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	31.9	2.1		0.2	0.6			18.7			0.7	
Delay (s)	48.1	15.6		10.0	13.0			35.3			13.8	
Level of Service	D	B		B	B			D			B	
Approach Delay (s)		26.9			12.8			35.3			13.8	
Approach LOS		C			B			D			B	

Intersection Summary

HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	423	153	60	512	20	134	243	42	20	271	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.99			0.99			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1770	1789		1770	1852			1808			1733	
Flt Permitted	0.25	1.00		0.25	1.00			0.62			0.98	
Satd. Flow (perm)	466	1789		466	1852			1136			1698	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	325	460	166	65	557	22	146	264	46	22	295	322
RTOR Reduction (vph)	0	32	0	0	4	0	0	10	0	0	91	0
Lane Group Flow (vph)	325	594	0	65	575	0	0	446	0	0	548	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.0	16.0		16.0	16.0			16.0			16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0			16.0			16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.40			0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	186	716		186	741			454			679	
v/s Ratio Prot		0.33			0.31							
v/s Ratio Perm	c0.70			0.14				c0.39			0.32	
v/c Ratio	1.75	0.83		0.35	0.78			0.98			0.81	
Uniform Delay, d1	12.0	10.8		8.4	10.4			11.9			10.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	357.6	7.9		1.1	5.1			37.3			7.0	
Delay (s)	369.6	18.6		9.5	15.6			49.2			17.6	
Level of Service	F	B		A	B			D			B	
Approach Delay (s)		138.6			15.0			49.2			17.6	
Approach LOS		F			B			D			B	

Intersection Summary

HCM Average Control Delay	65.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

SHAFTER HEAVY MAINTENANCE FUTURE PLUS PROJECT CONDITIONS - MITIGATED

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	1	38	16	5	11	8	57	859	2	92	1027	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			0.95			1.00			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1789			1759			1856			1855	
Flt Permitted		1.00			0.96			0.86			0.84	
Satd. Flow (perm)		1782			1709			1607			1571	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	41	17	5	12	9	62	934	2	100	1116	0
RTOR Reduction (vph)	0	16	0	0	8	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	43	0	0	18	0	0	998	0	0	1216	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		6.8			6.8			87.6			87.6	
Effective Green, g (s)		6.8			6.8			87.6			87.6	
Actuated g/C Ratio		0.07			0.07			0.86			0.86	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		118			113			1375			1344	
v/s Ratio Prot												
v/s Ratio Perm		c0.02			0.01			0.62			c0.77	
v/c Ratio		0.37			0.16			0.73			0.90	
Uniform Delay, d1		45.7			45.1			2.8			4.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.9			0.6			1.9			8.9	
Delay (s)		47.7			45.7			4.8			13.6	
Level of Service		D			D			A			B	
Approach Delay (s)		47.7			45.7			4.8			13.6	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	1	14	30	0	21	63	19	1204	1	35	1012	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.91			0.90			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		1692			1675			1861			1851	
Flt Permitted		0.99			1.00			0.98			0.93	
Satd. Flow (perm)		1680			1675			1816			1722	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	15	33	0	23	68	21	1309	1	38	1100	42
RTOR Reduction (vph)	0	31	0	0	63	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	18	0	0	28	0	0	1331	0	0	1179	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		6.1			6.1			72.0			72.0	
Effective Green, g (s)		6.1			6.1			72.0			72.0	
Actuated g/C Ratio		0.07			0.07			0.84			0.84	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		119			119			1519			1440	
v/s Ratio Prot					c0.02							
v/s Ratio Perm		0.01						c0.73			0.68	
v/c Ratio		0.15			0.23			0.88			0.82	
Uniform Delay, d1		37.6			37.8			4.3			3.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			1.0			6.0			3.8	
Delay (s)		38.2			38.8			10.3			7.4	
Level of Service		D			D			B			A	
Approach Delay (s)		38.2			38.8			10.3			7.4	
Approach LOS		D			D			B			A	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

CORCORAN FUTURE PLUS PROJECT CONDITIONS - MITIGATED

HCM Signalized Intersection Capacity Analysis
3: Whitley Ave & Pickerell Ave

5/24/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	468	9	14	67	6	4	11	13	3	240	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.99			0.94			0.97	
Flt Protected		0.99			0.99			0.99			1.00	
Satd. Flow (prot)		3509			3473			1734			1815	
Flt Permitted		0.91			0.87			0.95			1.00	
Satd. Flow (perm)		3219			3035			1652			1813	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	509	10	15	73	7	4	12	14	3	261	60
RTOR Reduction (vph)	0	3	0	0	4	0	0	9	0	0	22	0
Lane Group Flow (vph)	0	586	0	0	91	0	0	21	0	0	302	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.2			11.2			10.2			10.2	
Effective Green, g (s)		11.2			11.2			10.2			10.2	
Actuated g/C Ratio		0.38			0.38			0.35			0.35	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1226			1156			573			629	
v/s Ratio Prot												
v/s Ratio Perm		c0.18			0.03			0.01			c0.17	
v/c Ratio		0.48			0.08			0.04			0.48	
Uniform Delay, d1		6.9			5.8			6.3			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.0			0.0			0.6	
Delay (s)		7.2			5.8			6.4			8.1	
Level of Service		A			A			A			A	
Approach Delay (s)		7.2			5.8			6.4			8.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	29.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Whitley Ave & Pickerell Ave

5/24/2011

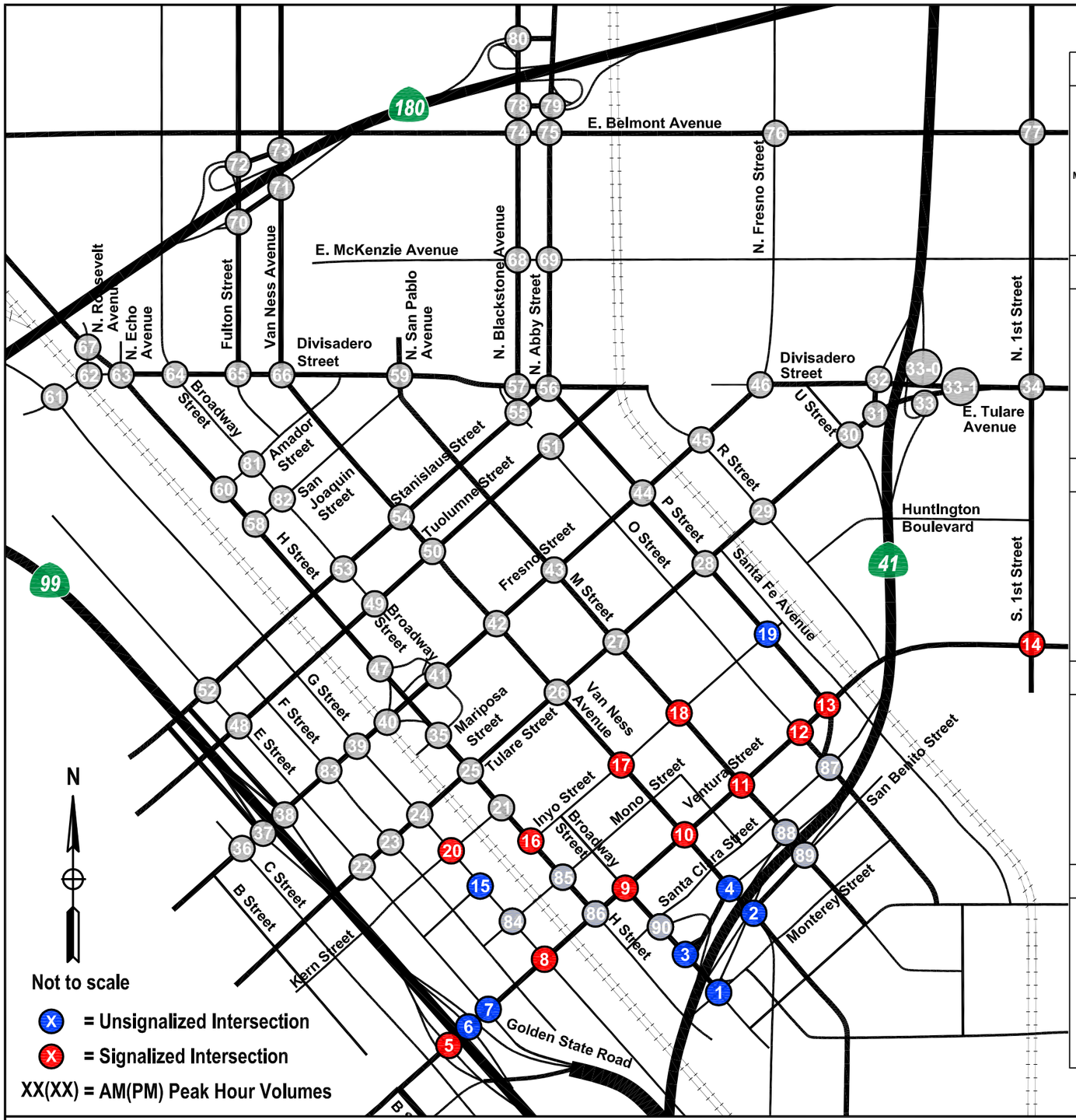
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱			↰↑↱			↰↑↱	
Volume (vph)	123	148	6	88	630	145	11	254	26	4	28	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.97			0.99			0.92	
Flt Protected		0.98			0.99			1.00			1.00	
Satd. Flow (prot)		3450			3432			1837			1704	
Flt Permitted		0.61			0.89			0.99			0.98	
Satd. Flow (perm)		2136			3058			1821			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	161	7	96	685	158	12	276	28	4	30	55
RTOR Reduction (vph)	0	4	0	0	40	0	0	10	0	0	37	0
Lane Group Flow (vph)	0	298	0	0	899	0	0	306	0	0	52	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.6			14.6			10.8			10.8	
Effective Green, g (s)		14.6			14.6			10.8			10.8	
Actuated g/C Ratio		0.44			0.44			0.32			0.32	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		934			1337			589			542	
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.29			c0.17			0.03	
v/c Ratio		0.32			0.67			0.52			0.10	
Uniform Delay, d1		6.1			7.5			9.2			7.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			1.3			0.8			0.1	
Delay (s)		6.3			8.8			10.0			8.0	
Level of Service		A			A			A			A	
Approach Delay (s)		6.3			8.8			10.0			8.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	33.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

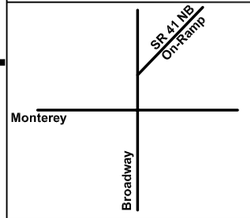
c Critical Lane Group

Appendix I
Construction Scenario - Trips and Synchro Output

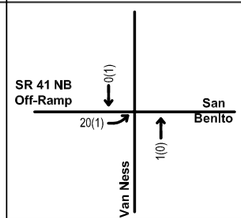
CONSTRUCTION ONLY TRIPS FIGURES



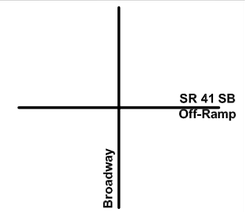
1. Broadway Street / SR 41 NB On-Ramp / Monterey Street



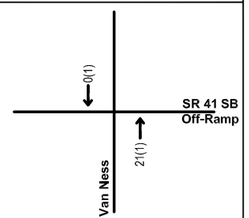
2. Van Ness Avenue / SR 41 NB Off-Ramp / San Benito Street



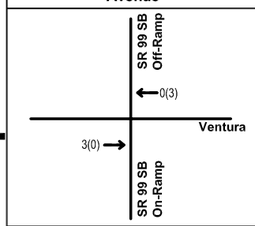
3. Broadway Street / SR 41 SB Off-Ramp



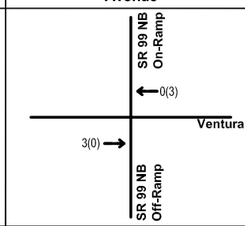
4. Van Ness Avenue / SR 41 SB Off-Ramp



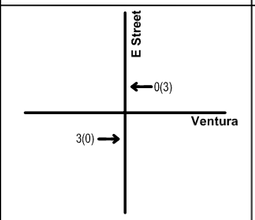
5. SR 99 SB Ramps / Ventura Avenue



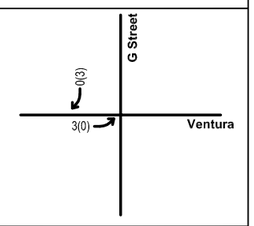
6. SR 99 NB Ramps / Ventura Avenue



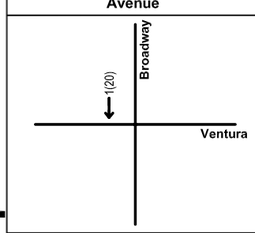
7. E Street / Ventura Avenue



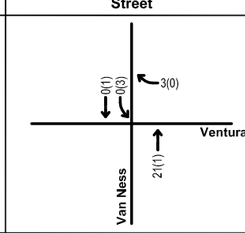
8. G Street / Ventura Avenue



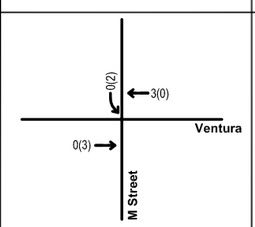
9. Broadway Street / Ventura Avenue



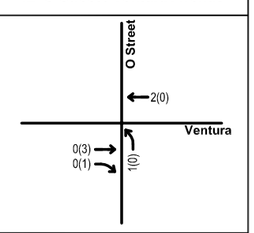
10. Van Ness Avenue / Ventura Street



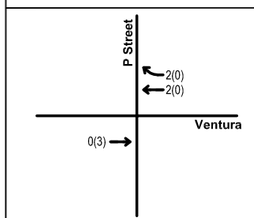
11. M Street / Ventura Street



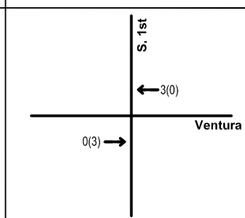
12. O Street / Ventura Avenue



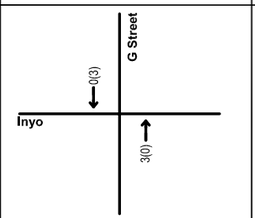
13. P Street / Ventura Avenue



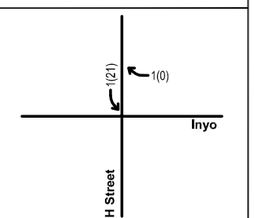
14. S. 1st Street / Ventura Avenue



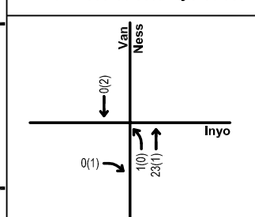
15. G Street / Inyo Street



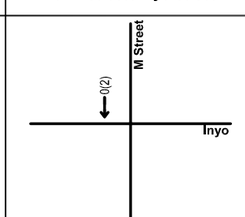
16. H Street / Inyo Street



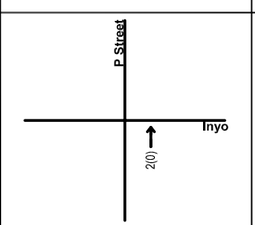
17. Van Ness Street / Inyo Street



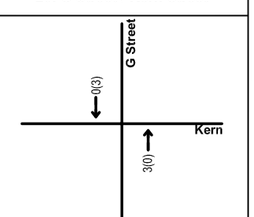
18. M Street / Inyo Street



19. P Street / Inyo Street



20. G Street / Kern Street



California High-Speed Train Program EIR/EIS

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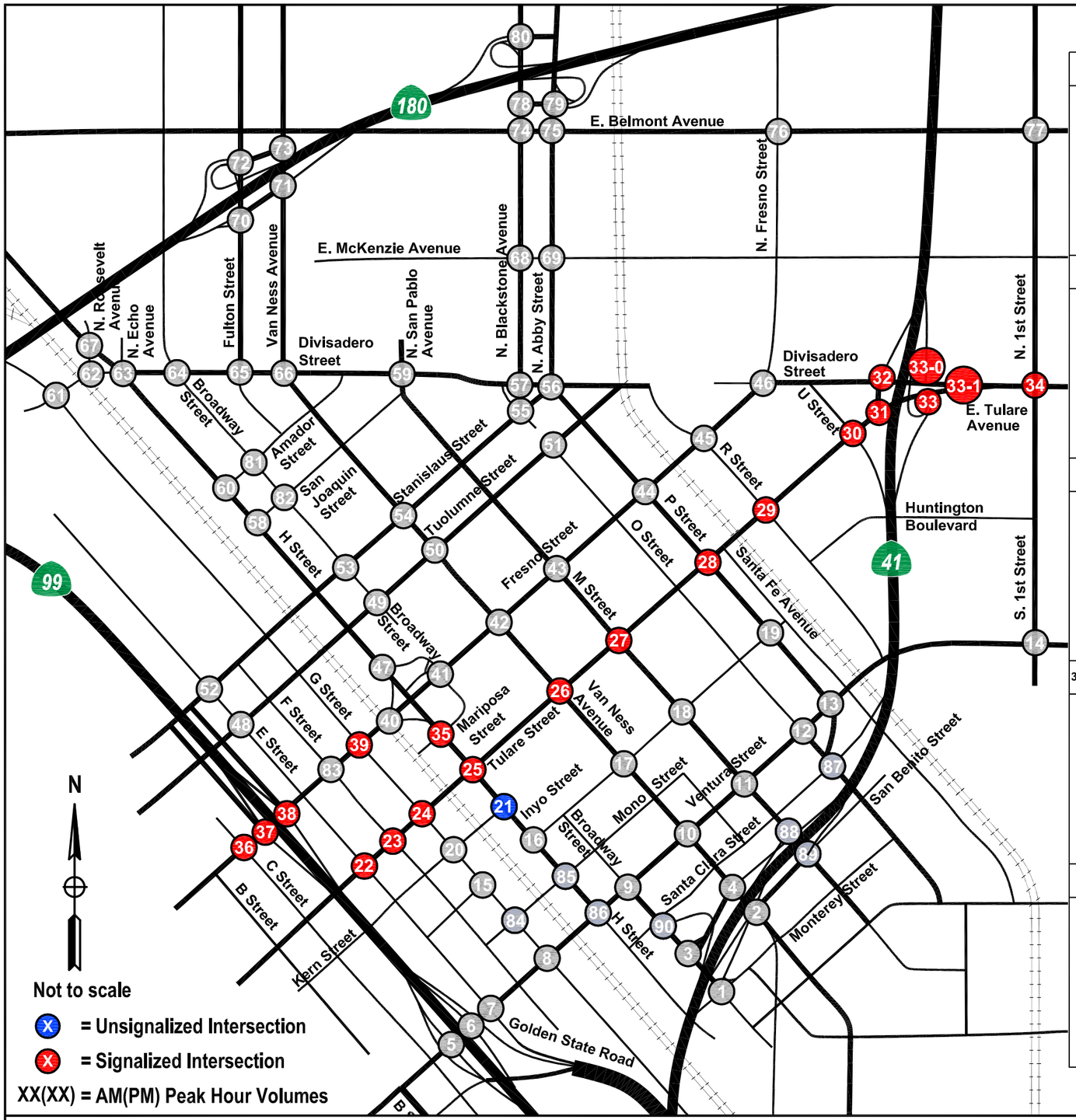
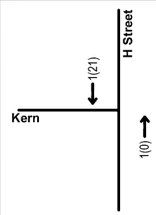
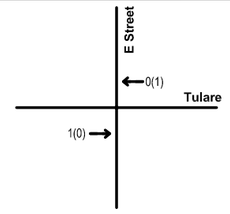


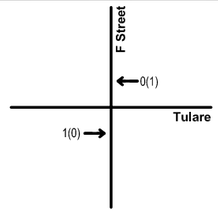
21. H Street / Kern Street



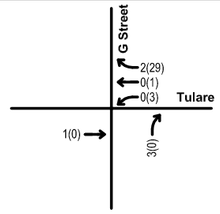
22. E Street / Tulare Street



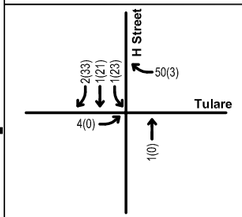
23. F Street / Tulare Street



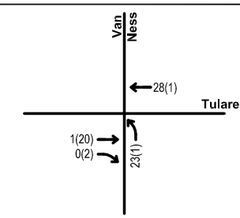
24. G Street / Tulare Street



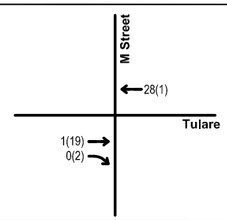
25. H Street / Tulare Street



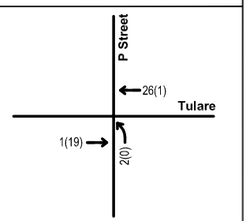
26. Van Ness Avenue / Tulare Street



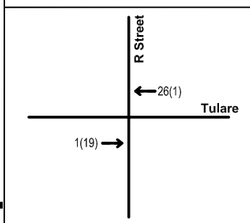
27. M Street / Tulare Street



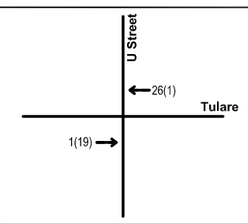
28. P Street / Tulare Street



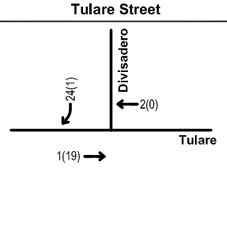
29. R Street / Tulare Street



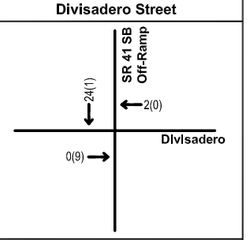
30. U Street / Tulare Street



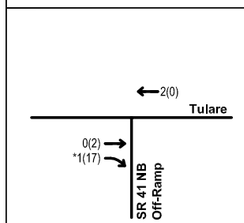
31. Divisadero Street Off-Ramp / Tulare Street



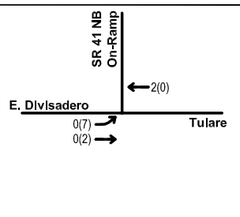
32. SR 41 SB Off-Ramp / Divisadero Street



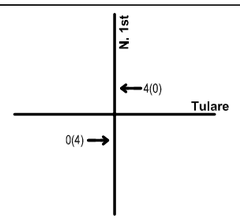
33. SR 41 NB Ramps / Tulare Street



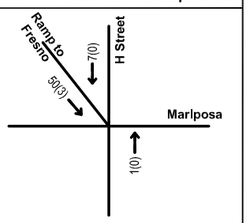
33-0. SR 41 NB On-Ramp / E. Divisadero Street



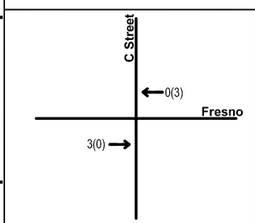
34. N. 1st Street / Tulare Street



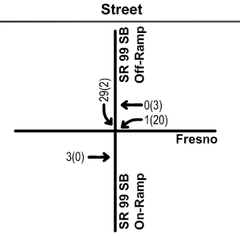
35. H Street / Mariposa Street / Fresno Street Ramp



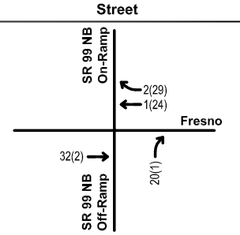
36. C Street / Fresno Street



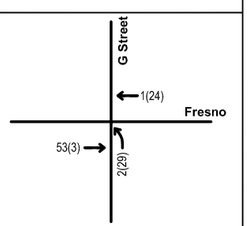
37. SR 99 SB Ramps / Fresno Street



38. SR 99 NB Ramps / Fresno Street

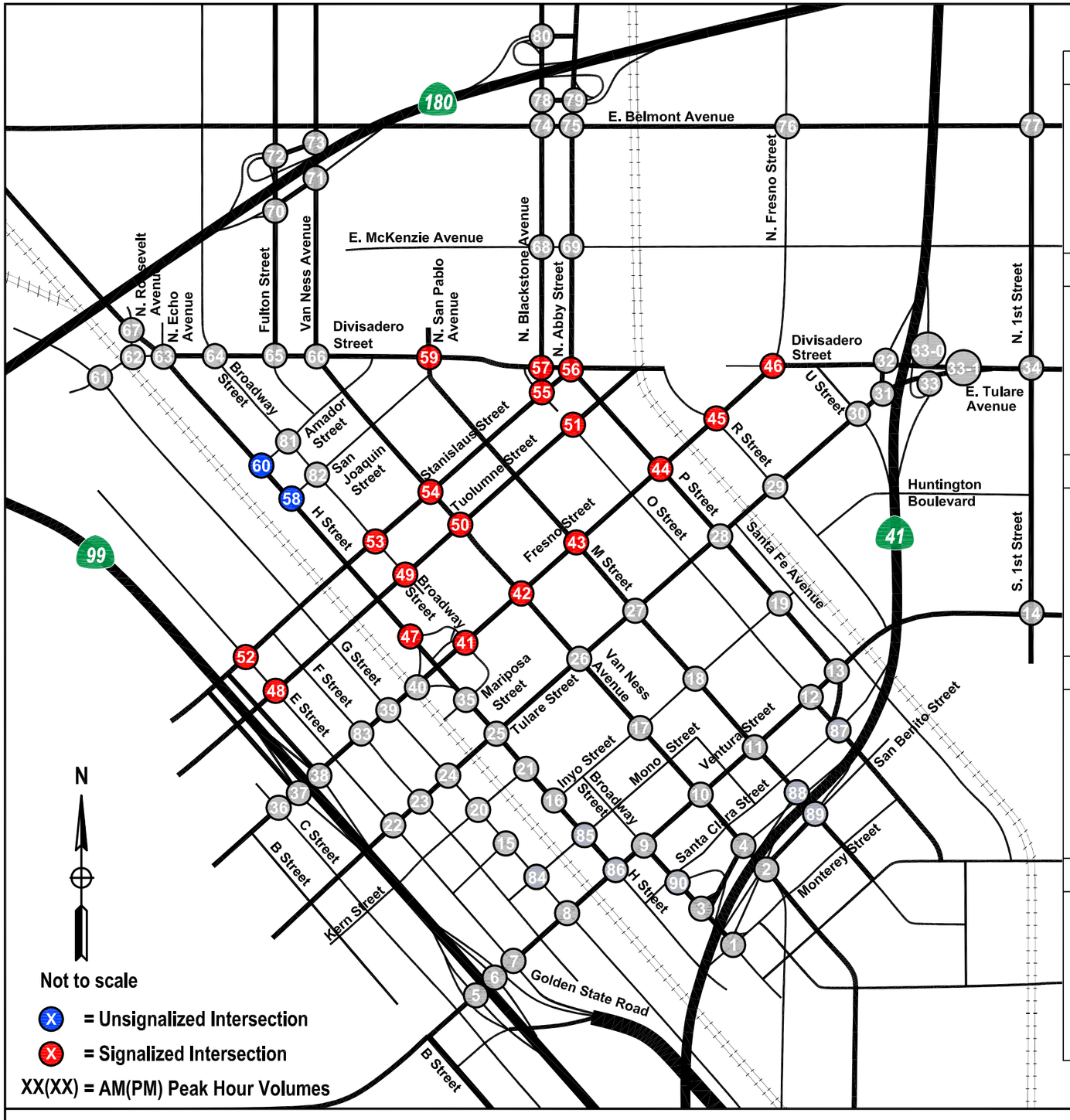


39. G Street / Fresno Street

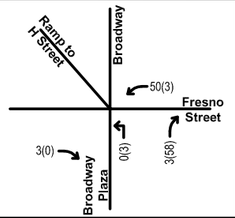


Note:
*XX(XX) Volume going to SR 41 NB On-Ramp

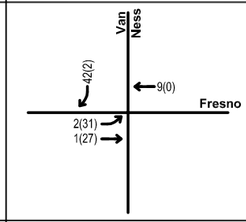
California High-Speed Train Program EIR/EIS	Construction Only Trips - Fresno Station	Sheet 2 of 5



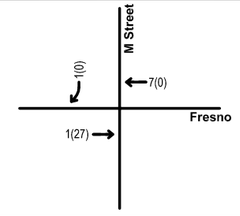
41. Broadway Street / Fresno Street / H Street Ramp



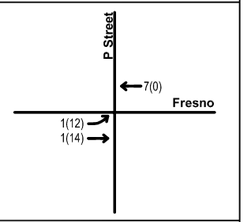
42. Van Ness Avenue / Fresno Street



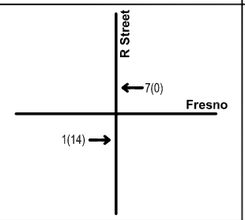
43. M Street / Fresno Street



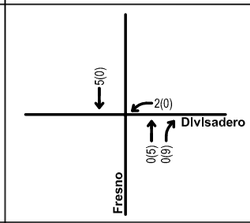
44. P Street / Fresno Street



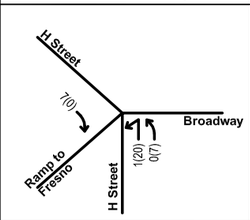
45. R Street / Fresno Street



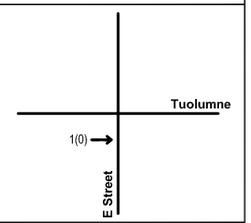
46. Fresno Street / Divisadero Street



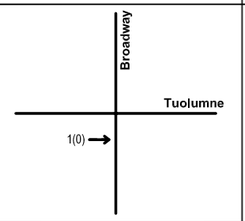
47. H Street / Broadway Street / Fresno Street Ramp



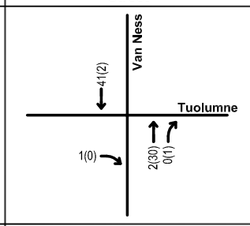
48. E Street / Tuolumne Street



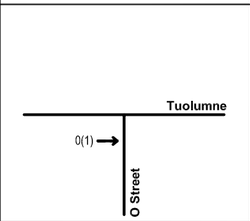
49. Broadway / Tuolumne Street



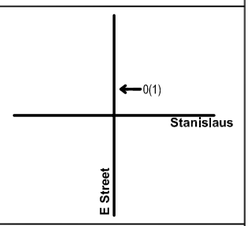
50. Van Ness Avenue / Tuolumne Street



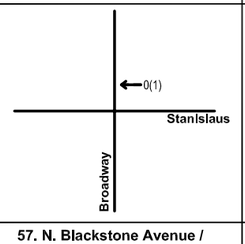
51. O Street / Tuolumne Street



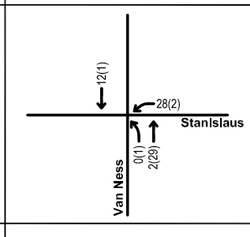
52. E Street / Stanislaus Street



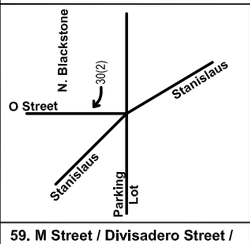
53. Broadway Street / Stanislaus Street



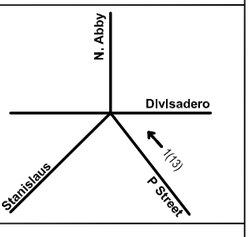
54. Van Ness Avenue / Stanislaus Street



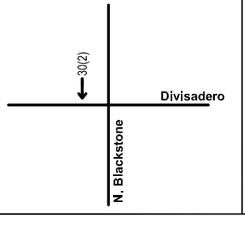
55. N. Blackstone Avenue / Stanislaus Street / O Street



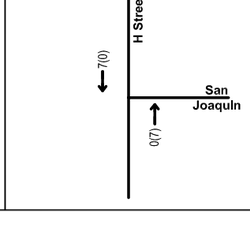
56. N. Abby Street / Divisadero Street / P Street / Stanislaus Street



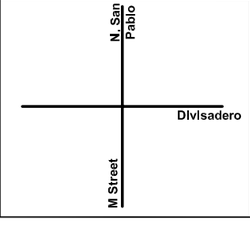
57. N. Blackstone Avenue / Divisadero Street



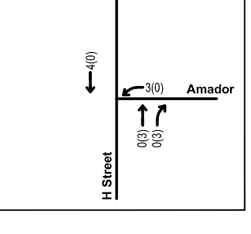
58. H Street / San Joaquin Street

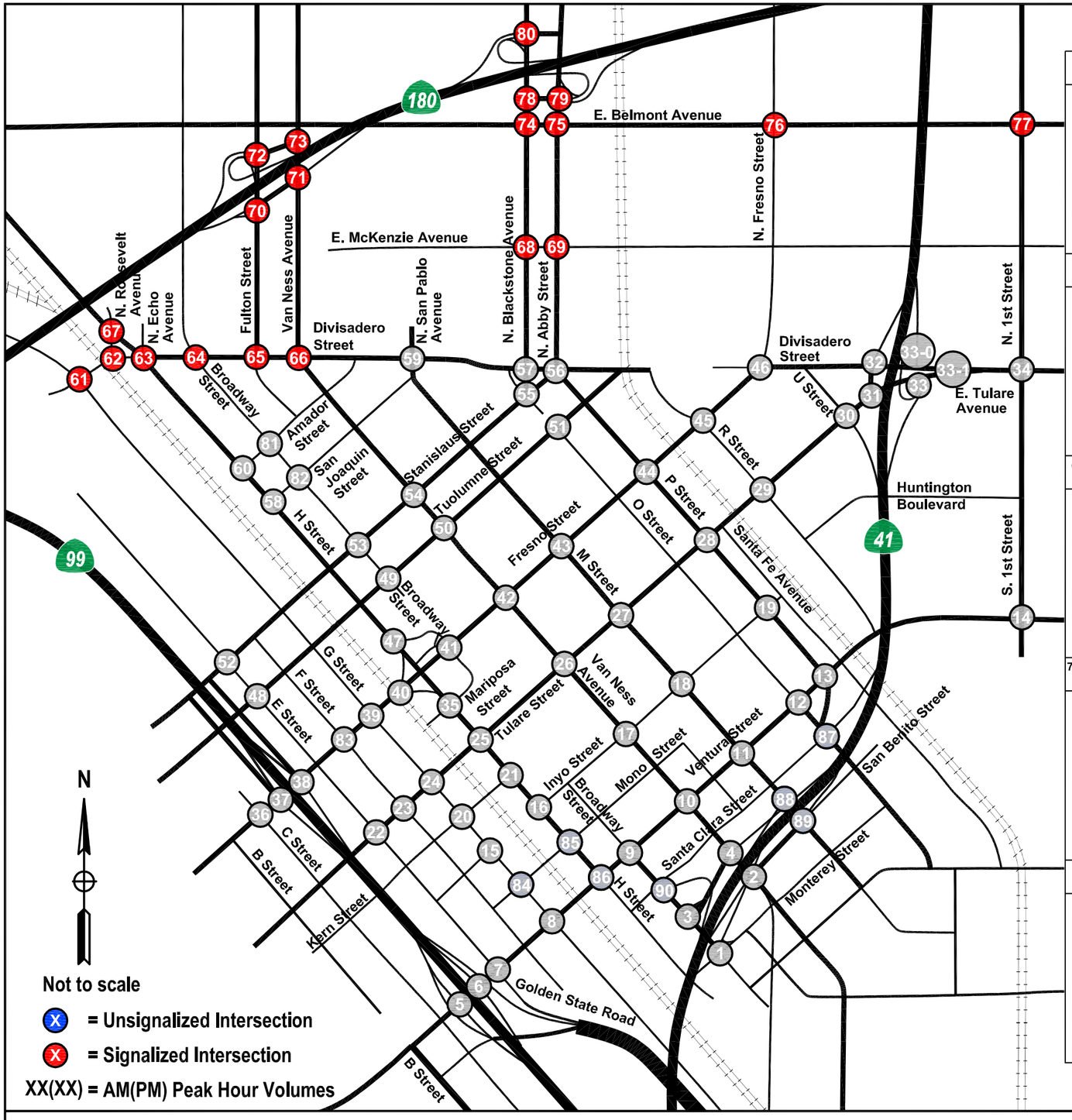


59. M Street / Divisadero Street / N. San Pablo Avenue

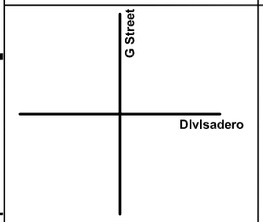


60. H Street / Amador Street

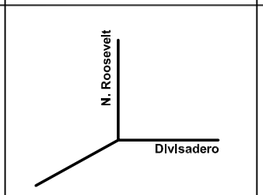




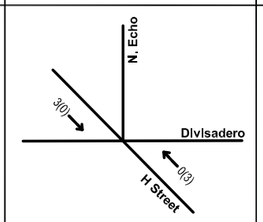
61. G Street / Divisadero Street



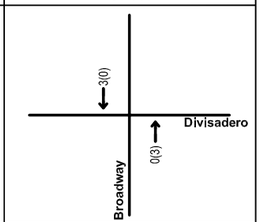
62. N. Roosevelt Avenue / Divisadero Avenue



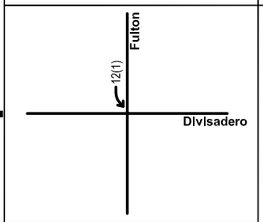
63. H Street / Divisadero Street / N. Echo Avenue



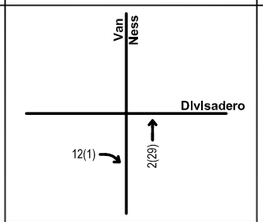
64. Broadway Street / Divisadero Street



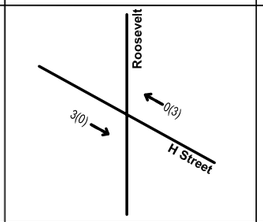
65. Fulton Street / Divisadero Street



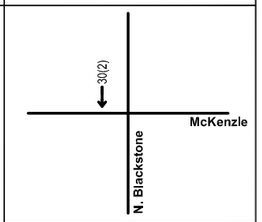
66. Van Ness Avenue / Divisadero Street



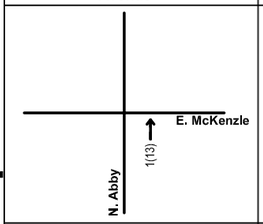
67. H Street / Roosevelt Street



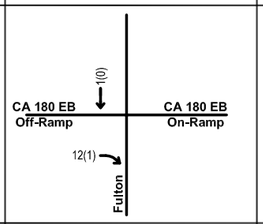
68. N. Blackstone Avenue / E. McKenzie Avenue



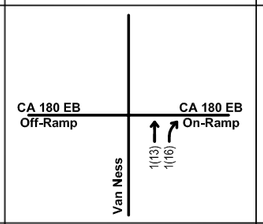
69. N. Abby Street / E. McKenzie Avenue



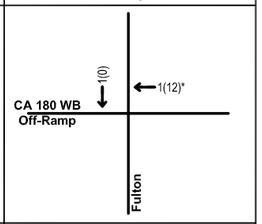
70. Fulton Street / CA 180 EB Ramps



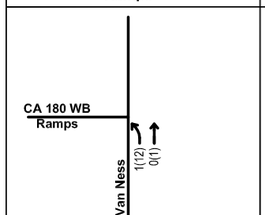
71. Van Ness Avenue / CA 180 EB Ramps



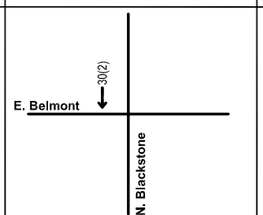
72. Fulton Street / CA 180 WB Ramps



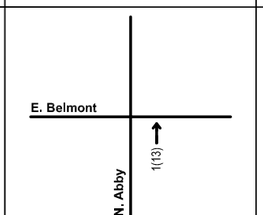
73. Van Ness Avenue / CA 180 WB Ramps



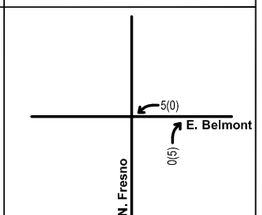
74. N. Blackstone Avenue / E. Belmont Avenue



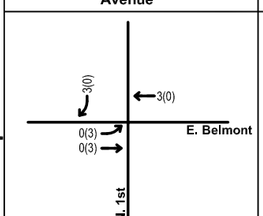
75. N. Abby Street / E. Belmont Avenue



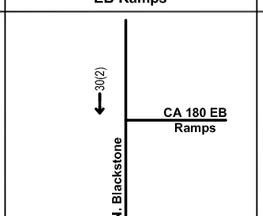
76. N. Fresno Street / E. Belmont Avenue



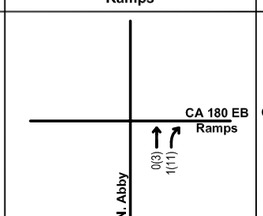
77. N. 1st Street / E. Belmont Avenue



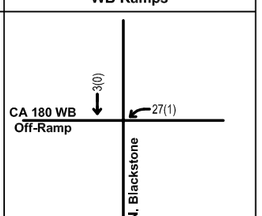
78. N. Blackstone Avenue / CA 180 EB Ramps



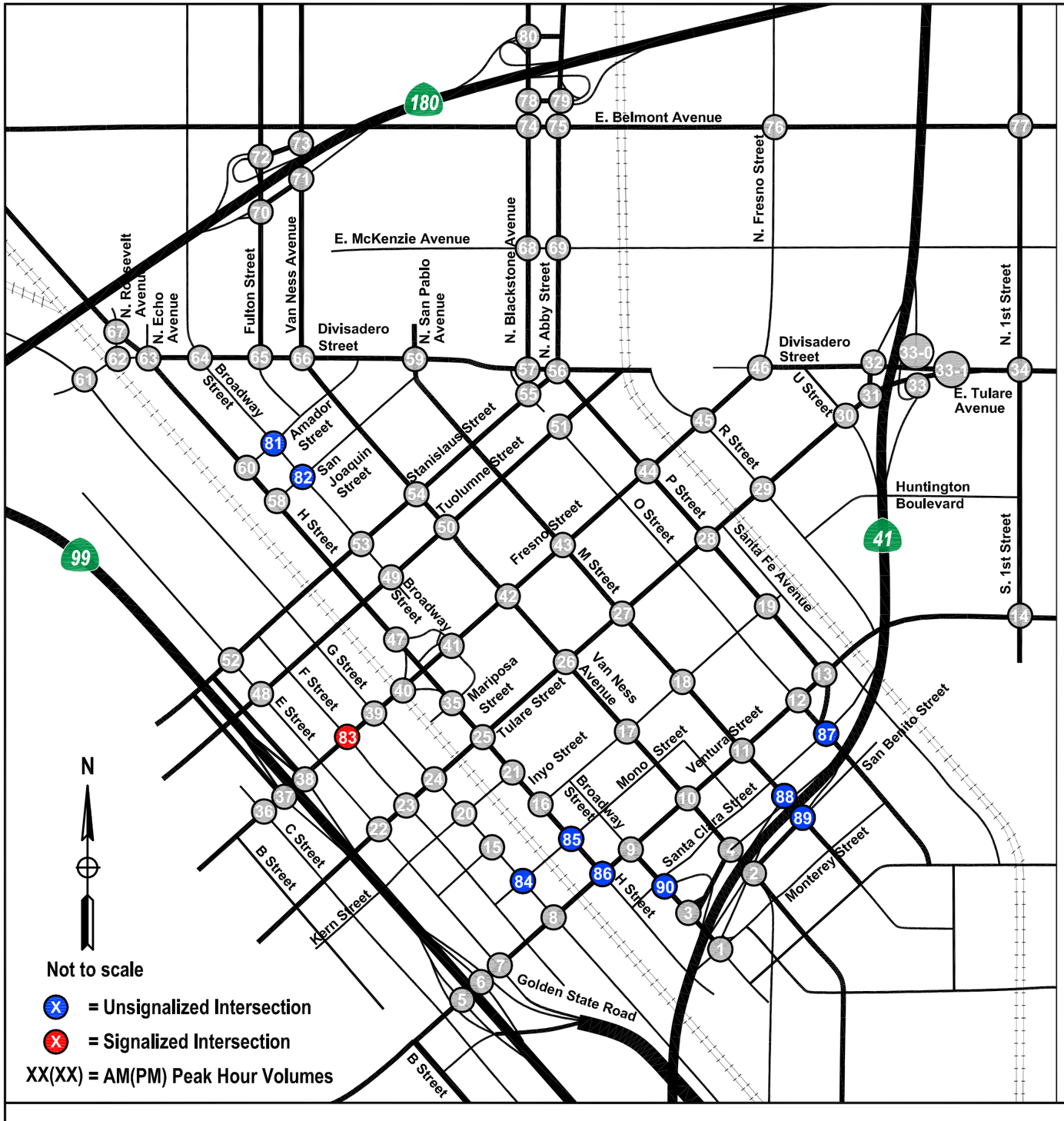
79. N. Abby Street / CA 180 EB Ramps

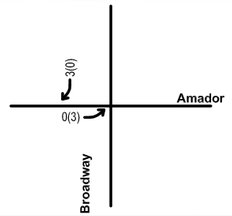
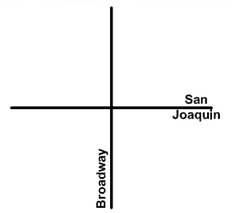
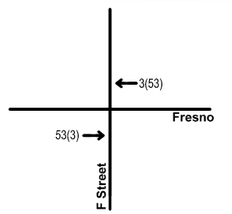
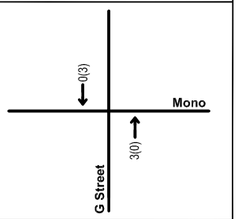
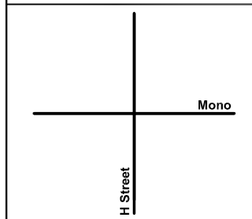
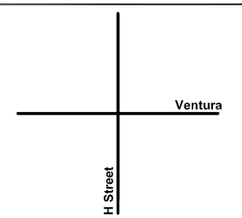
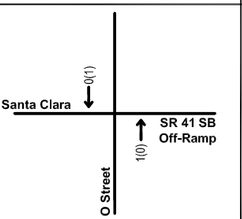
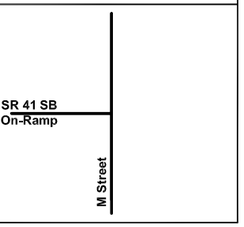
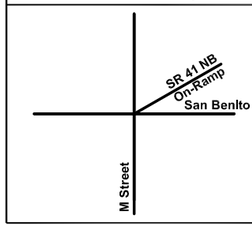
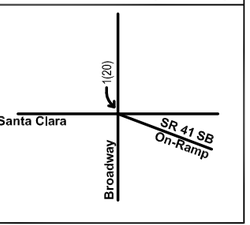


80. N. Blackstone Avenue / CA 180 WB Ramps

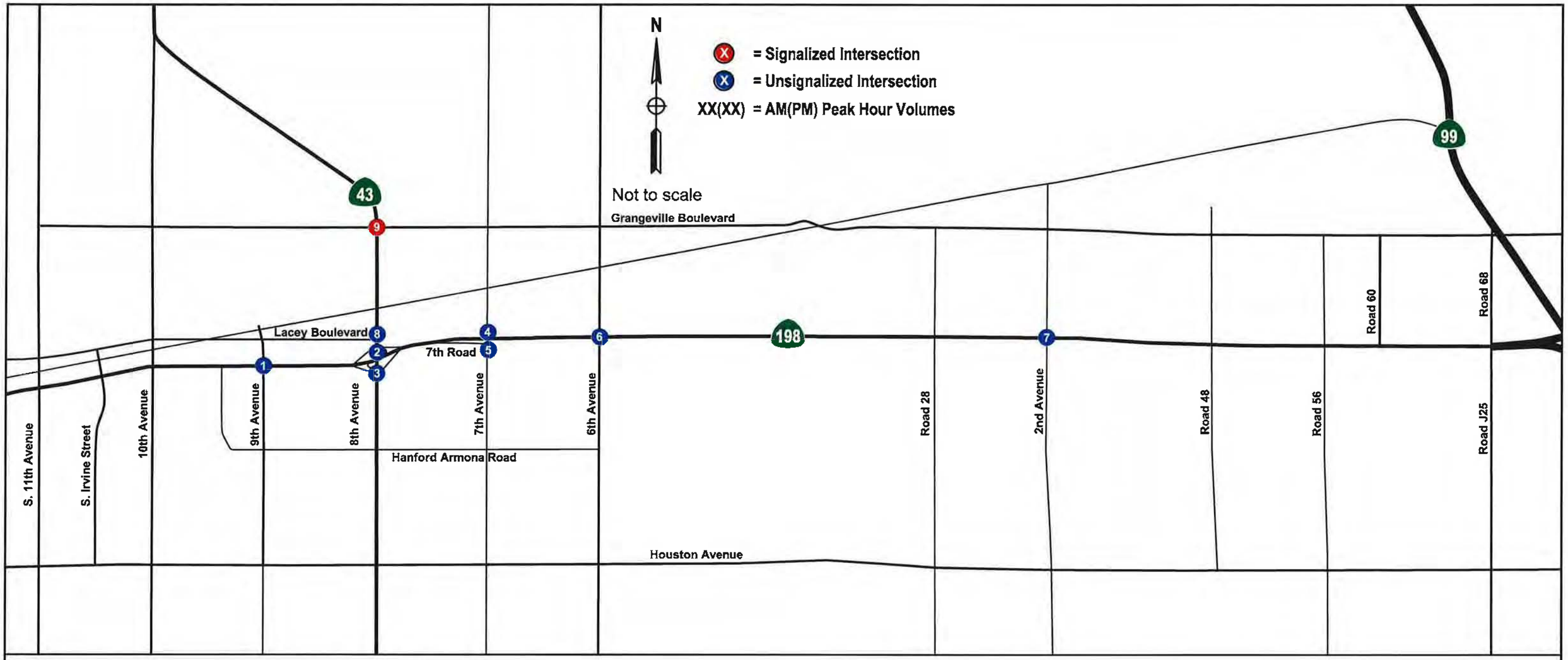


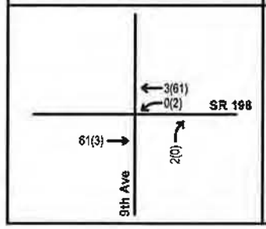
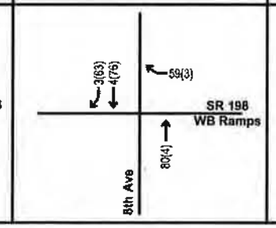
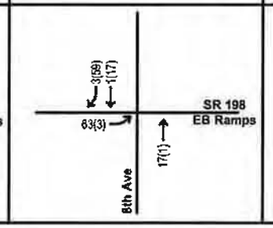
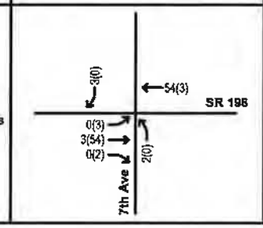
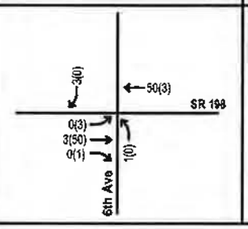
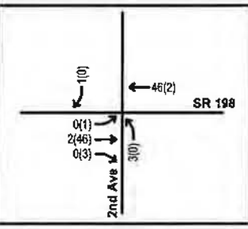
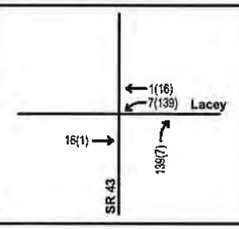
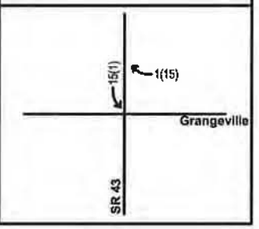
Note:
*XX(XX) Volume going to CA 180 WB On-Ramp



81. Broadway Street / Amador Street	82. Broadway Street / San Joaquln Street	83. F Street / Fresno Street	84. G Street / Mono Street
			
85. H Street / Mono Street	86. H Street / Ventura Street	87. O Street / Santa Clara Street - SR 41 SB Off-Ramp	88. M Street / SR 41 SB On-Ramp
			
89. M Street / San Benito Street - SR 41 NB On-Ramp	90. Broadway Street / Santa Clara Street - SR 41 SB Loop On-Ramp		
			

California High-Speed Train Program EIR/EIS	Construction Only Trips - Fresno Station	Sheet 5 of 5



1. 9th Avenue / SR 198	2. 8th Avenue / SR 198 WB Ramps	3. 8th Avenue / SR 198 EB Ramps	4. 7th Avenue / SR 198	5. 7th Avenue / 7th Road	6. 6th Avenue / SR 198	7. 2nd Avenue / SR 198	8. SR 43 / Lacey Boulevard	9. SR 43 / Grangeville Boulevard
				INTERSECTION NOT TO BE ANALYZED				

California High-Speed Train Program EIR/EIS	Kings/Tulare Regional Station - Construction Only Trips	Sheet 1 of 1

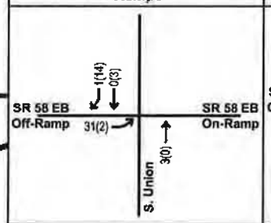
Note:
*XX(XX) Volume going to SR 58 EB On-Ramp
**XX(XX) Volume going to SR 99 SB On-Ramp
***XX(XX) Volume going to SR 99 NB On-Ramp

= Signalized Intersection

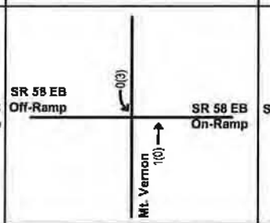
= Unsignalized Intersection

Not to scale XX(XX) = AM(PM) Peak Hour Volumes

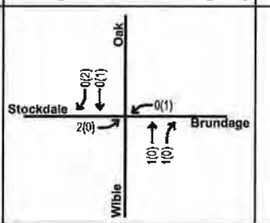
1. S. Union Avenue / SR 58 EB Ramps



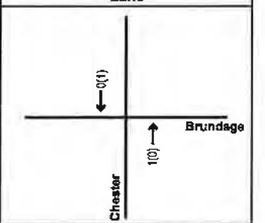
2. Mt. Vernon Avenue / SR 58 EB Ramps



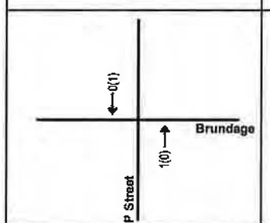
3. Wible Road / Oak Street / Brundage Lane/Stockdale Highway



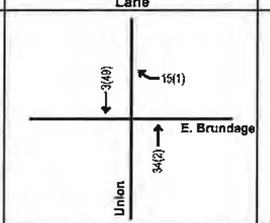
4. Chester Avenue / Brundage Lane



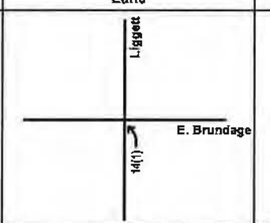
5. P Street / Brundage Lane



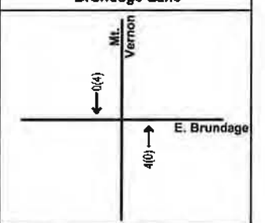
6. Union Avenue / E. Brundage Lane



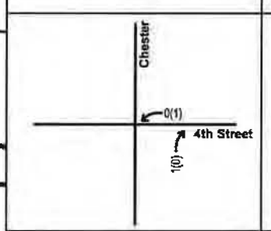
7. Liggett Street / E. Brundage Lane



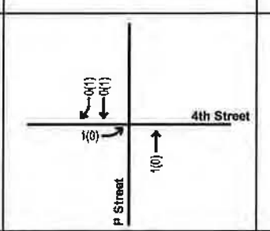
8. Mt. Vernon Avenue / E. Brundage Lane



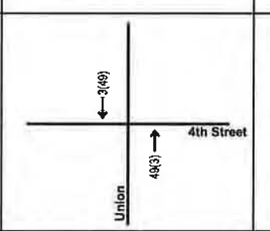
9. Chester Avenue / 4th Street



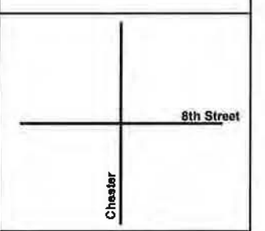
10. P Street / 4th Street



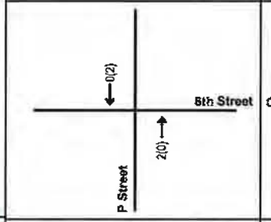
11. Union Avenue / 4th Street



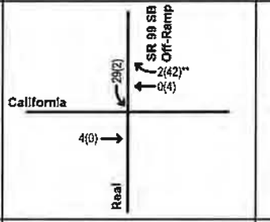
12. Chester Avenue / 8th Street



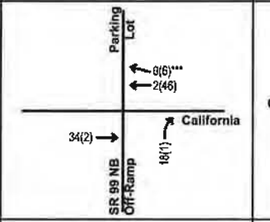
13. P Street / 8th Street



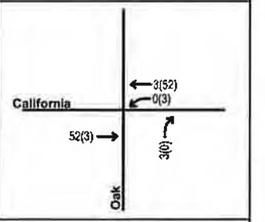
14. Real Road / California Avenue / SR 99 SB Ramps



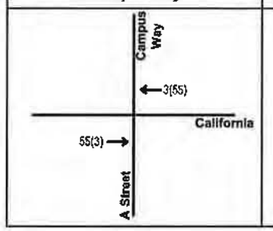
15. SR 99 NB Ramps / California Avenue



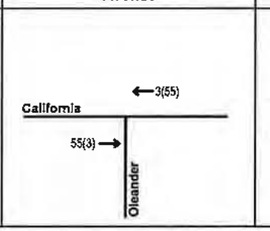
16. Oak Street / California Avenue



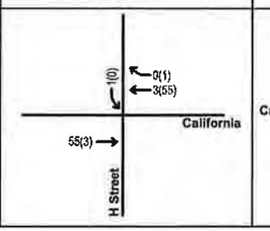
17. A Street / California Avenue / Campus Way



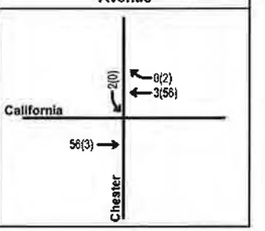
18. Oleander Avenue / California Avenue



19. H Street / California Avenue



20. Chester Avenue / California Avenue



California High-Speed Train Program EIR/EIS

Construction Only Trips - Bakersfield Station

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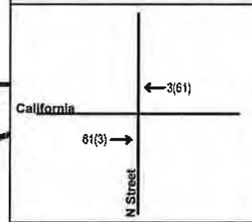
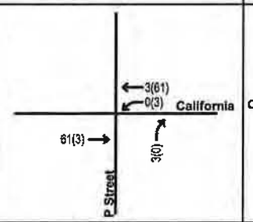
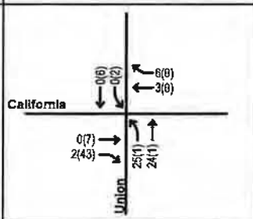
21. N Street / California Avenue



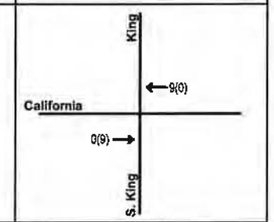
22. P Street / California Avenue



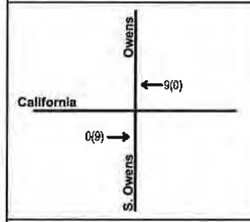
23. Union Avenue / California Avenue



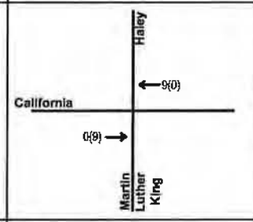
24. King Street / California Avenue



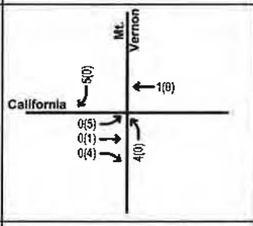
25. Owens Street / California Avenue



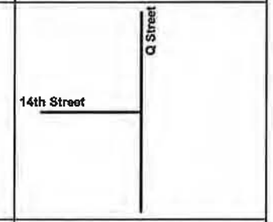
26. Dr Martin Luther King Jr Blvd / Haley Street / California Avenue



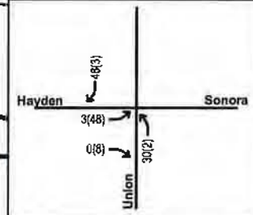
27. Mt. Vernon Avenue / California Avenue



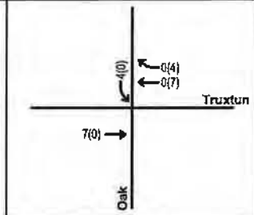
28. Q Street / 14th Street



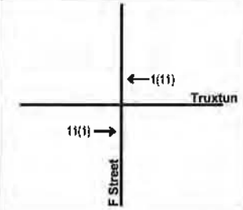
29. Union Avenue / Hayden Court / Sonora Street



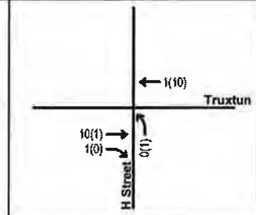
30. Oak Street / Truxtun Avenue



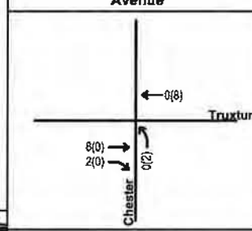
31. F Street / Truxtun Avenue



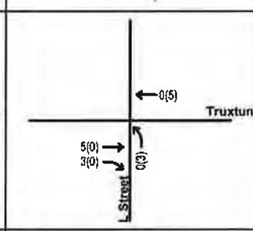
32. H Street / Truxtun Avenue



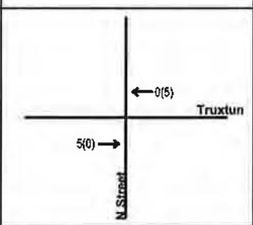
33. Chester Avenue / Truxtun Avenue



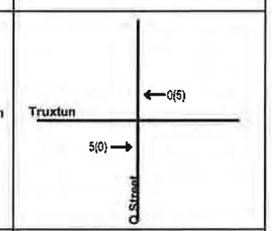
34. L Street / Truxtun Avenue



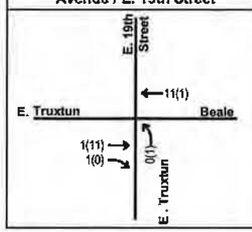
35. N Street / Truxtun Avenue



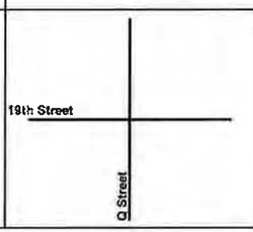
36. Q Street / Truxtun Avenue



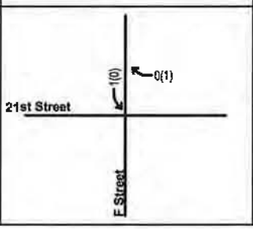
37. E. Truxtun Avenue / Beale Avenue / E. 19th Street



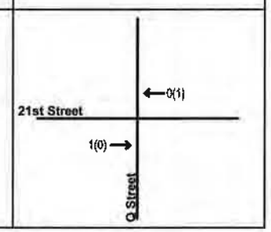
38. Q Street / 19th Street



39. F Street / 21st Street



40. Q Street / 21st Street



California High-Speed Train Program EIR/EIS

Construction Only Trips - Bakersfield Station

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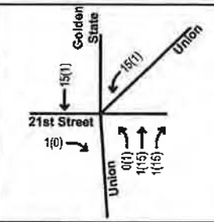
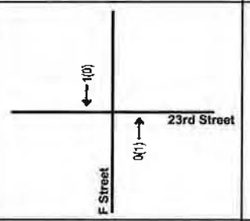
Note:
*XX(XX) Volume going to Beale Ave

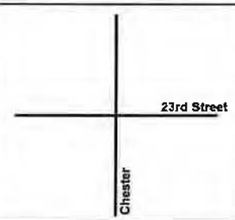
41. Union Avenue / Golden State Avenue / 21st Street



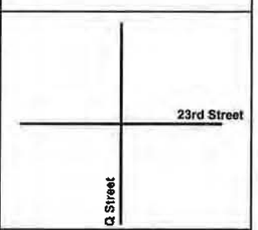
42. F Street / 23rd Street



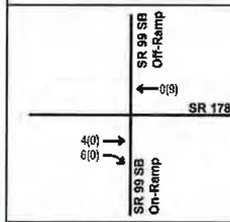
43. Chester Avenue / 23rd Street



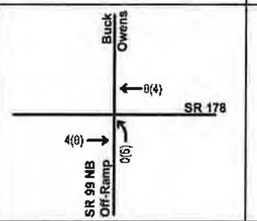
44. Q Street / 23rd Street



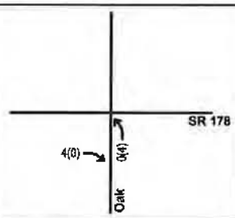
45. SR 178 / SR 99 SB Ramps



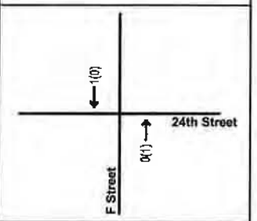
46. SR 178 / SR 99 NB Off-Ramp / Buck Owens Blvd



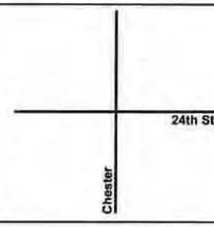
47. Oak Street / SR 178



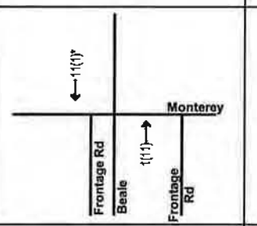
48. F Street / 24th Street



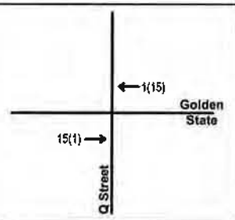
49. Chester Avenue / 24th Street



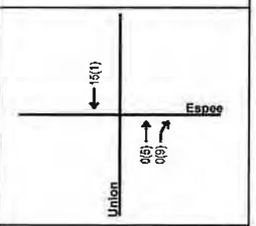
50. Beale Avenue / Monterey Street



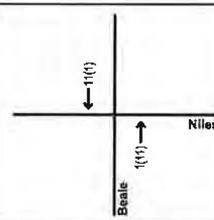
51. Q Street / Golden State Avenue



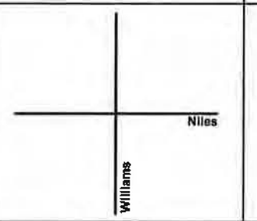
52. Union Avenue / Espee Street



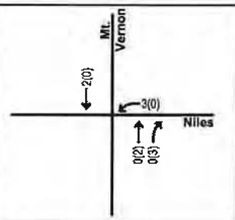
53. Beale Avenue / Niles Street



54. Williams Street / Niles Street

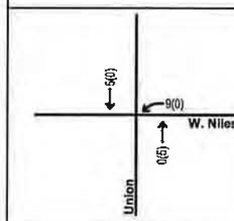


55. Mt. Vernon Avenue / Niles Street

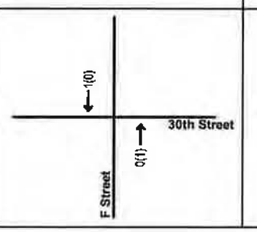


56. M Street / 28th Street / Golden State Avenue

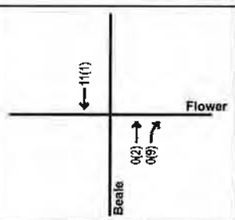
57. Union Avenue / W. Niles Street



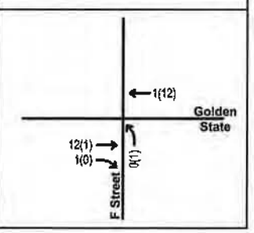
58. F Street / 30th Street



59. Beale Avenue / Flower Street



60. F Street / Golden State Avenue



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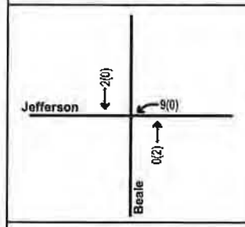
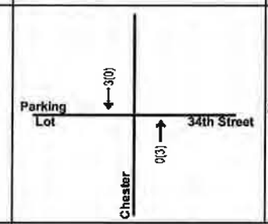
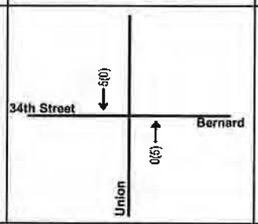
61. Beale Avenue / Jefferson Street



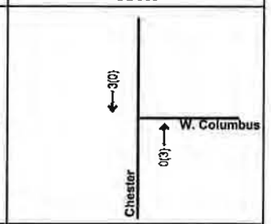
62. Chester Avenue / 34th Street



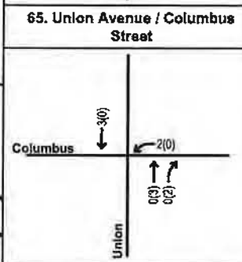
63. Union Avenue / 34th Street / Bernard Street



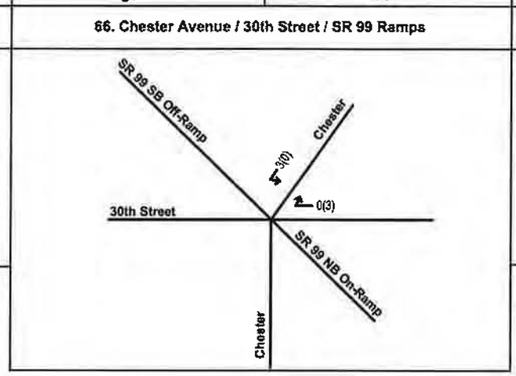
64. Chester Avenue / W. Columbus Street



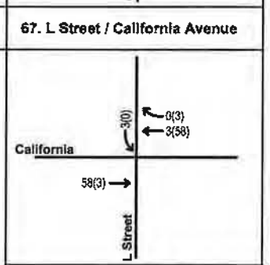
65. Union Avenue / Columbus Street



66. Chester Avenue / 30th Street / SR 99 Ramps



67. L Street / California Avenue



California High-Speed Train Program EIR/EIS	Construction Only Trips - Bakersfield Station	Sheet 4 of 4

FRESNO CONSTRUCTION CONDITIONS
SYNCHRO OUTPUT

HCM Unsignalized Intersection Capacity Analysis
1: Broadway St & Monterey St.

11/10/2010

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	↱
Volume (veh/h)	0	63	0	0	101	0	0	0	0	0	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	68	0	0	110	0	0	0	0	0	0	10
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	110			68			178	178	68	178	178	110
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			68			178	178	68	178	178	110
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			100			100	100	100	100	100	99
cM capacity (veh/h)	1480			1533			776	715	995	784	715	944

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total	68	110	0	0	10
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	10
cSH	1480	1533	1700	1700	944
Volume to Capacity	0.00	0.00	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	8.9
Lane LOS			A	A	A
Approach Delay (s)	0.0	0.0	0.0	8.9	
Approach LOS			A	A	

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	15.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
1: Broadway St & Monterey St.

11/10/2010

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	42	46	0	220	0	0	0	0	0	0	83
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	50	0	239	0	0	0	0	0	0	90
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	239			96			310	310	71	310	335	239
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239			96			310	310	71	310	335	239
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			100			100	100	100	100	100	89
cM capacity (veh/h)	1328			1498			570	605	992	643	586	800

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total	96	239	0	0	90
Volume Left	0	0	0	0	0
Volume Right	50	0	0	0	90
cSH	1328	1498	1700	1700	800
Volume to Capacity	0.00	0.00	0.00	0.00	0.11
Queue Length 95th (ft)	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	10.1
Lane LOS			A	A	B
Approach Delay (s)	0.0	0.0	0.0	10.1	
Approach LOS			A	B	

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	23.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	141	90	68	0	0	0	21	292	0	0	213	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	153	98	74	0	0	0	23	317	0	0	232	55

Direction, Lane #	NB 1	NB 2	SE 1	SE 2	NW 1	NW 2
Volume Total (vph)	202	123	129	212	154	133
Volume Left (vph)	153	0	23	0	0	0
Volume Right (vph)	0	74	0	0	0	55
Hadj (s)	0.41	-0.39	0.12	0.03	0.03	-0.26
Departure Headway (s)	6.5	5.7	6.0	5.9	6.0	5.7
Degree Utilization, x	0.37	0.19	0.21	0.35	0.26	0.21
Capacity (veh/h)	528	595	570	585	573	602
Control Delay (s)	12.0	8.9	9.4	10.8	9.9	9.0
Approach Delay (s)	10.8		10.3		9.5	
Approach LOS	B		B		A	

Intersection Summary				
Delay	10.2			
HCM Level of Service	B			
Intersection Capacity Utilization	35.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	129	33	45	0	0	0	85	189	0	0	233	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	140	36	49	0	0	0	92	205	0	0	253	62

Direction, Lane #	NB 1	NB 2	SE 1	SE 2	NW 1	NW 2
Volume Total (vph)	158	67	161	137	169	146
Volume Left (vph)	140	0	92	0	0	0
Volume Right (vph)	0	49	0	0	0	62
Hadj (s)	0.48	-0.48	0.32	0.03	0.03	-0.26
Departure Headway (s)	6.5	5.5	5.9	5.6	5.6	5.3
Degree Utilization, x	0.28	0.10	0.26	0.21	0.26	0.22
Capacity (veh/h)	527	608	583	615	615	649
Control Delay (s)	10.8	7.9	9.8	8.9	9.4	8.5
Approach Delay (s)	9.9		9.4		9.0	
Approach LOS	A		A		A	

Intersection Summary				
Delay	9.4			
HCM Level of Service	A			
Intersection Capacity Utilization	33.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	138	65	0	7	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	150	71	0	8	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1132				
pX, platoon unblocked						
vC, conflicting volume	71				221	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71				221	71
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)	1530				768	992

Direction, Lane #	SE 1	NW 1	SW 1	SW 2
Volume Total	150	71	8	8
Volume Left	0	0	8	0
Volume Right	0	0	0	8
cSH	1700	1700	768	992
Volume to Capacity	0.09	0.04	0.01	0.01
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.0	0.0	9.7	8.7
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.2	
Approach LOS			A	

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	280	107	0	17	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	304	116	0	18	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1132				
pX, platoon unblocked						
vC, conflicting volume	116				421	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116				421	116
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				97	99
cM capacity (veh/h)	1472				589	936

Direction, Lane #	SE 1	NW 1	SW 1	SW 2
Volume Total	304	116	18	10
Volume Left	0	0	18	0
Volume Right	0	0	0	10
cSH	1700	1700	589	936
Volume to Capacity	0.18	0.07	0.03	0.01
Queue Length 95th (ft)	0	0	2	1
Control Delay (s)	0.0	0.0	11.3	8.9
Lane LOS			B	A
Approach Delay (s)	0.0	0.0	10.5	
Approach LOS			B	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	128	2	3	349	0	0	0	0	186	14	448
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	139	2	3	379	0	0	0	0	202	15	487
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		735										
pX, platoon unblocked												
vC, conflicting volume	379			141			344	526	140	526	527	190
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	379			141			344	526	140	526	527	190
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	100	100	53	97	41
cM capacity (veh/h)	1176			1439			231	454	882	434	454	820

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total	141	130	253	380	325
Volume Left	0	3	0	202	0
Volume Right	2	0	0	162	325
cSH	1700	1439	1700	544	820
Volume to Capacity	0.08	0.00	0.15	0.70	0.40
Queue Length 95th (ft)	0	0	0	137	48
Control Delay (s)	0.0	0.2	0.0	25.4	12.2
Lane LOS		A		D	B
Approach Delay (s)	0.0	0.1		19.4	
Approach LOS				C	

Intersection Summary				
Average Delay	11.1			
Intersection Capacity Utilization	38.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	214	19	12	349	0	0	0	0	63	11	199
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	233	21	13	379	0	0	0	0	68	12	216
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		735										
pX, platoon unblocked												
vC, conflicting volume	379			253			465	648	243	648	659	190
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	379			253			465	648	243	648	659	190
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			99			100	100	100	81	97	74
cM capacity (veh/h)	1176			1309			343	384	758	352	378	820

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total	253	139	253	153	144
Volume Left	0	13	0	68	0
Volume Right	21	0	0	72	144
cSH	1700	1309	1700	486	820
Volume to Capacity	0.15	0.01	0.15	0.31	0.18
Queue Length 95th (ft)	0	1	0	33	16
Control Delay (s)	0.0	0.8	0.0	15.8	10.3
Lane LOS		A		C	B
Approach Delay (s)	0.0	0.3		13.1	
Approach LOS				B	

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	33.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	322	0	347	0	0	0	0	635	61	48	332	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2						5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00						0.95		1.00	0.95	
Frt	1.00	0.85						0.99		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1770	1583						3493		1770	3539	
Flt Permitted	0.95	1.00						1.00		0.35	1.00	
Satd. Flow (perm)	1770	1583						3493		653	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	350	0	377	0	0	0	0	690	66	52	361	0
RTOR Reduction (vph)	0	274	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	350	103	0	0	0	0	0	740	0	52	361	0
Turn Type	Split									Perm		
Protected Phases	4	4						2			2	
Permitted Phases										2		
Actuated Green, G (s)	12.1	12.1						23.0		23.0	23.0	
Effective Green, g (s)	12.1	12.1						23.0		23.0	23.0	
Actuated g/C Ratio	0.27	0.27						0.52		0.52	0.52	
Clearance Time (s)	4.2	4.2						5.2		5.2	5.2	
Vehicle Extension (s)	5.2	5.2						0.2		0.2	0.2	
Lane Grp Cap (vph)	481	430						1805		338	1829	
v/s Ratio Prot	c0.20	0.06						c0.21			0.10	
v/s Ratio Perm										0.08		
v/c Ratio	0.73	0.24						0.41		0.15	0.20	
Uniform Delay, d1	14.7	12.6						6.6		5.6	5.8	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	6.8	0.6						0.1		0.1	0.0	
Delay (s)	21.5	13.3						6.6		5.7	5.8	
Level of Service	C	B						A		A	A	
Approach Delay (s)		17.2			0.0			6.6			5.8	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	9.4
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	163	2	217	0	0	0	0	609	36	125	411	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2						5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00						0.95		1.00	0.95	
Frt	1.00	0.85						0.99		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1770	1586						3510		1770	3539	
Flt Permitted	0.95	1.00						1.00		0.38	1.00	
Satd. Flow (perm)	1770	1586						3510		715	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	2	236	0	0	0	0	662	39	136	447	0
RTOR Reduction (vph)	0	176	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	177	62	0	0	0	0	0	692	0	136	447	0
Turn Type	Split									Perm		
Protected Phases	4	4						2			2	
Permitted Phases										2		
Actuated Green, G (s)	11.0	11.0						23.0		23.0	23.0	
Effective Green, g (s)	11.0	11.0						23.0		23.0	23.0	
Actuated g/C Ratio	0.25	0.25						0.53		0.53	0.53	
Clearance Time (s)	4.2	4.2						5.2		5.2	5.2	
Vehicle Extension (s)	5.2	5.2						0.2		0.2	0.2	
Lane Grp Cap (vph)	449	402						1860		379	1876	
v/s Ratio Prot	c0.10	0.04						c0.20			0.13	
v/s Ratio Perm										0.19		
v/c Ratio	0.39	0.15						0.37		0.36	0.24	
Uniform Delay, d1	13.4	12.6						6.0		5.9	5.5	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.4						0.0		0.2	0.0	
Delay (s)	14.7	13.0						6.0		6.1	5.5	
Level of Service	B	B						A		A	A	
Approach Delay (s)		13.7			0.0			6.0			5.7	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	9.4
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	34	8	91	357	595	0	0	343	115
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	37	9	99	388	647	0	0	373	125
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								284			1117	
pX, platoon unblocked												
vC, conflicting volume	1638	1858	249	1609	1921	323	498			647		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1638	1858	249	1609	1921	323	498			647		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	26	79	85	63			100		
cM capacity (veh/h)	35	46	751	50	42	672	1062			935		

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	41	103	388	323	323	249	249
Volume Left	37	0	388	0	0	0	0
Volume Right	0	99	0	0	0	0	125
cSH	49	413	1062	1700	1700	1700	1700
Volume to Capacity	0.84	0.25	0.37	0.19	0.19	0.15	0.15
Queue Length 95th (ft)	87	24	42	0	0	0	0
Control Delay (s)	213.7	16.6	10.3	0.0	0.0	0.0	0.0
Lane LOS	F	C	B				
Approach Delay (s)	72.9		3.9			0.0	
Approach LOS	F						

Intersection Summary				
Average Delay	8.7			
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	25	2	75	301	467	0	0	512	446
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	27	2	82	327	508	0	0	557	485
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								284			1117	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	1790	1961	521	1440	2203	254	1041			508		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1766	1941	472	1410	2188	254	1003			508		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	54	90	89	51			100		
cM capacity (veh/h)	27	33	528	60	23	746	673			1053		

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	28	83	327	254	254	371	670
Volume Left	27	0	327	0	0	0	0
Volume Right	0	82	0	0	0	0	485
cSH	56	525	673	1700	1700	1700	1700
Volume to Capacity	0.50	0.16	0.49	0.15	0.15	0.22	0.39
Queue Length 95th (ft)	49	14	67	0	0	0	0
Control Delay (s)	121.9	13.1	15.3	0.0	0.0	0.0	0.0
Lane LOS	F	B	C				
Approach Delay (s)	40.8		6.0			0.0	
Approach LOS	E						

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	64.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	23	4	30	15	11	14	45	650	3	1	408	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	4	33	16	12	15	49	707	3	1	443	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)								595			806	
pX, platoon unblocked												
vC, conflicting volume	933	1268	236	1065	1281	355	473			710		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	933	1268	236	1065	1281	355	473			710		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	87	97	96	90	92	98	95			100		
cM capacity (veh/h)	196	160	765	160	157	641	1085			885		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	62	43	402	357	223	251
Volume Left	25	16	49	0	1	0
Volume Right	33	15	0	3	0	29
cSH	314	215	1085	1700	885	1700
Volume to Capacity	0.20	0.20	0.05	0.21	0.00	0.15
Queue Length 95th (ft)	18	18	4	0	0	0
Control Delay (s)	19.3	25.9	1.5	0.0	0.1	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	19.3	25.9	0.8		0.0	
Approach LOS	C	D				

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	46.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	36	2	87	10	10	20	61	471	5	2	864	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	2	95	11	11	22	66	512	5	2	939	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								595			806	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	1377	1611	488	1217	1627	259	975			517		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1189	1450	196	1010	1467	259	740			517		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	63	98	87	92	90	97	91			100		
cM capacity (veh/h)	107	106	728	139	104	740	773			1045		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	136	43	322	261	472	505
Volume Left	39	11	66	0	2	0
Volume Right	95	22	0	5	0	36
cSH	263	205	773	1700	1045	1700
Volume to Capacity	0.52	0.21	0.09	0.15	0.00	0.30
Queue Length 95th (ft)	68	19	7	0	0	0
Control Delay (s)	32.3	27.3	2.9	0.0	0.1	0.0
Lane LOS	D	D	A		A	
Approach Delay (s)	32.3	27.3	1.6		0.0	
Approach LOS	D	D				

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	26	81	11	39	117	79	35	585	35	42	375	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1829		1770	1750		1770	3509		1770	3490	
Flt Permitted	0.62	1.00		0.69	1.00		0.49	1.00		0.36	1.00	
Satd. Flow (perm)	1155	1829		1290	1750		916	3509		665	3490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	88	12	42	127	86	38	636	38	46	408	42
RTOR Reduction (vph)	0	8	0	0	40	0	0	7	0	0	12	0
Lane Group Flow (vph)	28	92	0	42	173	0	38	667	0	46	438	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	18.6	18.6		18.6	18.6		25.9	25.9		25.9	25.9	
Effective Green, g (s)	18.6	18.6		18.6	18.6		25.9	25.9		25.9	25.9	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.49	0.49		0.49	0.49	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	404	639		451	612		446	1708		324	1699	
v/s Ratio Prot		0.05			c0.10			c0.19			0.13	
v/s Ratio Perm	0.02			0.03			0.04			0.07		
v/c Ratio	0.07	0.14		0.09	0.28		0.09	0.39		0.14	0.26	
Uniform Delay, d1	11.5	11.8		11.6	12.5		7.3	8.6		7.5	8.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		0.2	0.5		0.2	0.3		0.4	0.2	
Delay (s)	11.7	12.1		11.8	13.0		7.5	9.0		7.9	8.2	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		12.0			12.8			8.9			8.2	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	8.7
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	75	94	69	75	152	96	24	479	30	60	775	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1744		1770	1755		1770	3508		1770	3512	
Flt Permitted	0.54	1.00		0.65	1.00		0.25	1.00		0.42	1.00	
Satd. Flow (perm)	1002	1744		1203	1755		469	3508		787	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	102	75	82	165	104	26	521	33	65	842	46
RTOR Reduction (vph)	0	43	0	0	37	0	0	7	0	0	6	0
Lane Group Flow (vph)	82	134	0	82	232	0	26	547	0	65	882	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	20.1	20.1		20.1	20.1		27.6	27.6		27.6	27.6	
Effective Green, g (s)	20.1	20.1		20.1	20.1		27.6	27.6		27.6	27.6	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.49	0.49		0.49	0.49	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	357	622		429	625		230	1717		385	1719	
v/s Ratio Prot		0.08			c0.13			0.16			c0.25	
v/s Ratio Perm	0.08			0.07			0.06			0.08		
v/c Ratio	0.23	0.22		0.19	0.37		0.11	0.32		0.17	0.51	
Uniform Delay, d1	12.7	12.7		12.5	13.5		7.8	8.7		8.0	9.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.4		0.5	0.8		0.5	0.2		0.4	0.5	
Delay (s)	13.4	13.0		13.0	14.2		8.2	8.9		8.5	10.3	
Level of Service	B	B		B	B		A	A		A	B	
Approach Delay (s)		13.1			14.0			8.9			10.2	
Approach LOS		B			B			A			B	

Intersection Summary				
HCM Average Control Delay	10.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	8.7	
Intersection Capacity Utilization	88.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Broadway St & Ventura Ave

6/8/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	20	4	66	42	5	8	491	117	15	456	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3458		1770	1835		1770	3437		1770	3524	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3458		1770	1835		1770	3437		1770	3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	22	4	72	46	5	9	534	127	16	496	15
RTOR Reduction (vph)	0	4	0	0	3	0	0	15	0	0	1	0
Lane Group Flow (vph)	21	22	0	72	48	0	9	646	0	16	510	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.7	5.7		8.9	8.9		1.0	20.2		1.0	20.2	
Effective Green, g (s)	5.7	5.7		8.9	8.9		1.0	20.2		1.0	20.2	
Actuated g/C Ratio	0.10	0.10		0.16	0.16		0.02	0.37		0.02	0.37	
Clearance Time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	183	357		285	296		32	1258		32	1290	
v/s Ratio Prot	c0.01	0.01		c0.04	0.03		0.01	c0.19		c0.01	0.14	
v/s Ratio Perm												
v/c Ratio	0.11	0.06		0.25	0.16		0.28	0.51		0.50	0.40	
Uniform Delay, d1	22.5	22.3		20.2	19.9		26.7	13.7		26.9	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.2	0.1		1.8	0.1		4.4	0.1	
Delay (s)	22.6	22.4		20.4	20.0		28.5	13.8		31.3	13.0	
Level of Service	C	C		C	C		C	B		C	B	
Approach Delay (s)		22.5			20.3			14.0			13.6	
Approach LOS		C			C			B			B	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	19.4
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Broadway St & Ventura Ave

6/8/2011

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	117	16	75	20	12	21	448	153	59	786	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.94		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3477		1770	1759		1770	3404		1770	3526	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3477		1770	1759		1770	3404		1770	3526	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	127	17	82	22	13	23	487	166	64	854	21
RTOR Reduction (vph)	0	9	0	0	11	0	0	25	0	0	1	0
Lane Group Flow (vph)	34	135	0	82	24	0	23	628	0	64	874	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	12.9	12.9		8.8	8.8		2.7	23.7		6.2	27.2	
Effective Green, g (s)	12.9	12.9		8.8	8.8		2.7	23.7		6.2	27.2	
Actuated g/C Ratio	0.18	0.18		0.12	0.12		0.04	0.33		0.09	0.38	
Clearance Time (s)	5.6	5.6		5.6	5.6		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	322	632		219	218		67	1136		155	1351	
v/s Ratio Prot	0.02	c0.04		c0.05	0.01		0.01	0.18		c0.04	c0.25	
v/s Ratio Perm												
v/c Ratio	0.11	0.21		0.37	0.11		0.34	0.55		0.41	0.65	
Uniform Delay, d1	24.2	24.7		28.6	27.6		33.3	19.3		30.7	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		0.4	0.1		1.1	0.3		0.7	0.8	
Delay (s)	24.3	24.8		29.0	27.7		34.4	19.7		31.3	18.8	
Level of Service	C	C		C	C		C	B		C	B	
Approach Delay (s)		24.7			28.6			20.2			19.6	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	55	36	218	530	150	60	412	46	42	269	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1753		1770	1863	1583	1770	3486		1770	3416	
Flt Permitted	0.29	1.00		0.69	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	532	1753		1291	1863	1583	1770	3486		1770	3416	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	60	39	237	576	163	65	448	50	46	292	88
RTOR Reduction (vph)	0	20	0	0	0	32	0	8	0	0	28	0
Lane Group Flow (vph)	21	79	0	237	576	131	65	490	0	46	352	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	35.2	35.2		35.2	35.2	35.2	6.0	19.7		3.9	17.6	
Effective Green, g (s)	35.2	35.2		35.2	35.2	35.2	6.0	19.7		3.9	17.6	
Actuated g/C Ratio	0.49	0.49		0.49	0.49	0.49	0.08	0.28		0.05	0.25	
Clearance Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.2		4.0	4.2	
Vehicle Extension (s)	4.8	4.8		4.8	4.8	4.8	2.0	4.8		2.0	4.8	
Lane Grp Cap (vph)	263	867		638	921	783	149	965		97	844	
v/s Ratio Prot		0.05			c0.31		0.04	c0.14		0.03	c0.10	
v/s Ratio Perm	0.04			0.18		0.08						
v/c Ratio	0.08	0.09		0.37	0.63	0.17	0.44	0.51		0.47	0.42	
Uniform Delay, d1	9.5	9.5		11.1	13.2	9.9	31.0	21.7		32.7	22.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		0.7	1.8	0.2	0.7	0.8		1.3	0.7	
Delay (s)	9.7	9.6		11.9	15.0	10.1	31.7	22.5		34.0	23.1	
Level of Service	A	A		B	B	B	C	C		C	C	
Approach Delay (s)		9.6			13.4			23.6			24.3	
Approach LOS		A			B			C			C	

Intersection Summary				
HCM Average Control Delay	18.2	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	12.6	
Intersection Capacity Utilization	56.1%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	84	130	65	217	282	68	42	406	44	37	582	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1769		1770	1863	1583	1770	3487		1770	3467	
Flt Permitted	0.48	1.00		0.60	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	894	1769		1111	1863	1583	1770	3487		1770	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	141	71	236	307	74	46	441	48	40	633	100
RTOR Reduction (vph)	0	20	0	0	0	33	0	7	0	0	11	0
Lane Group Flow (vph)	91	192	0	236	307	41	46	482	0	40	722	0
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	24.6	24.6		24.6	24.6	24.6	3.7	24.0		3.5	23.8	
Effective Green, g (s)	24.6	24.6		24.6	24.6	24.6	3.7	24.0		3.5	23.8	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38	0.06	0.37		0.05	0.37	
Clearance Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.2		4.0	4.2	
Vehicle Extension (s)	4.8	4.8		4.8	4.8	4.8	2.0	4.8		2.0	4.8	
Lane Grp Cap (vph)	341	675		424	711	604	102	1297		96	1279	
v/s Ratio Prot		0.11			0.16		0.03	c0.14		0.02	c0.21	
v/s Ratio Perm	0.10			c0.21		0.03						
v/c Ratio	0.27	0.28		0.56	0.43	0.07	0.45	0.37		0.42	0.56	
Uniform Delay, d1	13.7	13.8		15.7	14.8	12.7	29.4	14.8		29.5	16.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.5		2.5	0.8	0.1	1.2	0.4		1.1	0.9	
Delay (s)	14.6	14.3		18.2	15.6	12.8	30.6	15.1		30.6	17.1	
Level of Service	B	B		B	B	B	C	B		C	B	
Approach Delay (s)		14.4			16.3			16.4			17.8	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	8.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	39	200	21	0	0	0	0	423	22	26	446	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.99		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5044	1583					3513		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.47	1.00	
Satd. Flow (perm)		5044	1583					3513		870	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	217	23	0	0	0	0	460	24	28	485	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	259	9	0	0	0	0	479	0	28	485	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Actuated Green, G (s)		20.0	20.0					25.0		25.0	25.0	
Effective Green, g (s)		20.0	20.0					25.0		25.0	25.0	
Actuated g/C Ratio		0.37	0.37					0.47		0.47	0.47	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		2.0	2.0					2.0		2.0	2.0	
Lane Grp Cap (vph)		1889	593					1645		407	1657	
v/s Ratio Prot		c0.05						0.14			c0.14	
v/s Ratio Perm			0.01							0.03		
v/c Ratio		0.14	0.01					0.29		0.07	0.29	
Uniform Delay, d1		11.0	10.5					8.7		7.8	8.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.0		0.0	0.0	
Delay (s)		11.0	10.5					8.8		7.8	8.8	
Level of Service		B	B					A		A	A	
Approach Delay (s)		11.0			0.0			8.8			8.7	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↰↑↑↑	↱					↑↑↱		↰	↑↑	
Volume (vph)	64	532	12	0	0	0	0	600	19	73	782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					1.00		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5058	1583					3523		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.35	1.00	
Satd. Flow (perm)		5058	1583					3523		656	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	578	13	0	0	0	0	652	21	79	850	0
RTOR Reduction (vph)	0	0	8	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	648	5	0	0	0	0	670	0	79	850	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4							6		
Actuated Green, G (s)		20.0	20.0					25.0		25.0	25.0	
Effective Green, g (s)		20.0	20.0					25.0		25.0	25.0	
Actuated g/C Ratio		0.37	0.37					0.47		0.47	0.47	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		2.0	2.0					2.0		2.0	2.0	
Lane Grp Cap (vph)		1894	593					1649		307	1657	
v/s Ratio Prot		c0.13						0.19			c0.24	
v/s Ratio Perm			0.00							0.12		
v/c Ratio		0.34	0.01					0.41		0.26	0.51	
Uniform Delay, d1		12.0	10.5					9.3		8.6	9.9	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.1		0.2	0.1	
Delay (s)		12.0	10.5					9.4		8.7	10.1	
Level of Service		B	B					A		A	B	
Approach Delay (s)		12.0			0.0			9.4			9.9	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	26	13	17	85	342	7	93	371	2	9	374	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1681	1768	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1681	1768	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	14	18	92	372	8	101	403	2	10	407	41
RTOR Reduction (vph)	0	0	17	0	0	4	0	0	1	0	0	31
Lane Group Flow (vph)	28	14	1	83	381	4	101	403	1	10	407	10
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6			8			4
Actuated Green, G (s)	5.2	5.2	5.2	36.7	36.7	36.7	9.7	30.8	30.8	1.0	22.1	22.1
Effective Green, g (s)	5.2	5.2	5.2	36.7	36.7	36.7	9.7	30.8	30.8	1.0	22.1	22.1
Actuated g/C Ratio	0.06	0.06	0.06	0.41	0.41	0.41	0.11	0.34	0.34	0.01	0.24	0.24
Clearance Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Vehicle Extension (s)	4.9	4.9	4.9	4.9	4.9	4.9	2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	102	107	91	683	719	643	190	1207	540	20	866	387
v/s Ratio Prot	c0.02	0.01		0.05	c0.22		c0.06	0.11		0.01	c0.11	
v/s Ratio Perm			0.00			0.00			0.00			0.01
v/c Ratio	0.27	0.13	0.01	0.12	0.53	0.01	0.53	0.33	0.00	0.50	0.47	0.03
Uniform Delay, d1	40.7	40.4	40.1	16.7	20.3	16.0	38.1	22.1	19.6	44.4	29.1	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	1.1	0.1	0.2	1.3	0.0	1.4	0.3	0.0	7.0	0.8	0.1
Delay (s)	43.7	41.5	40.2	16.9	21.6	16.0	39.6	22.5	19.6	51.4	29.9	26.0
Level of Service	D	D	D	B	C	B	D	C	B	D	C	C
Approach Delay (s)		42.1			20.7			25.9			30.0	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	93	37	177	60	102	12	47	609	10	5	619	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1681	1764	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1681	1764	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	40	192	65	111	13	51	662	11	5	673	26
RTOR Reduction (vph)	0	0	159	0	0	11	0	0	5	0	0	11
Lane Group Flow (vph)	101	40	33	58	118	2	51	662	6	5	673	15
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	5		6	6		3	8		7	4	
Permitted Phases			5			6			8			4
Actuated Green, G (s)	13.3	13.3	13.3	13.7	13.7	13.7	5.8	33.7	33.7	0.9	28.8	28.8
Effective Green, g (s)	13.3	13.3	13.3	13.7	13.7	13.7	5.8	33.7	33.7	0.9	28.8	28.8
Actuated g/C Ratio	0.17	0.17	0.17	0.18	0.18	0.18	0.07	0.43	0.43	0.01	0.37	0.37
Clearance Time (s)	4.2	4.2	4.2	4.2	4.2	4.2	4.0	4.2	4.2	4.0	4.2	4.2
Vehicle Extension (s)	4.9	4.9	4.9	4.9	4.9	4.9	2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	301	317	269	294	309	277	131	1525	682	20	1303	583
v/s Ratio Prot	c0.06	0.02		0.03	c0.07		c0.03	0.19		0.00	c0.19	
v/s Ratio Perm			0.02			0.00			0.00			0.01
v/c Ratio	0.34	0.13	0.12	0.20	0.38	0.01	0.39	0.43	0.01	0.25	0.52	0.03
Uniform Delay, d1	28.6	27.5	27.5	27.6	28.5	26.6	34.5	15.6	12.7	38.3	19.3	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4	0.4	0.7	1.6	0.0	0.7	0.4	0.0	2.4	0.7	0.0
Delay (s)	29.9	27.9	27.9	28.2	30.1	26.7	35.2	16.0	12.7	40.7	19.9	15.8
Level of Service	C	C	C	C	C	C	D	B	B	D	B	B
Approach Delay (s)		28.5			29.3			17.3			19.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	16.6
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	38	97	122	44	370	0	0	404	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					4.2	4.2	4.2	4.2			4.2	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3490	1583	1770	3539			3415	
Flt Permitted					0.99	1.00	0.44	1.00			1.00	
Satd. Flow (perm)					3490	1583	813	3539			3415	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	105	133	48	402	0	0	439	134
RTOR Reduction (vph)	0	0	0	0	0	104	0	0	0	0	35	0
Lane Group Flow (vph)	0	0	0	0	146	29	48	402	0	0	538	0
Turn Type				Split		Perm	Perm					
Protected Phases				8	8			2			6	
Permitted Phases						8	2					
Actuated Green, G (s)					8.0	8.0	20.0	20.0			20.0	
Effective Green, g (s)					8.0	8.0	20.0	20.0			20.0	
Actuated g/C Ratio					0.22	0.22	0.55	0.55			0.55	
Clearance Time (s)					4.2	4.2	4.2	4.2			4.2	
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	
Lane Grp Cap (vph)					767	348	447	1945			1876	
v/s Ratio Prot					c0.04			0.11			c0.16	
v/s Ratio Perm						0.02	0.06					
v/c Ratio					0.19	0.08	0.11	0.21			0.29	
Uniform Delay, d1					11.6	11.3	3.9	4.2			4.4	
Progression Factor					1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2					0.0	0.0	0.0	0.0			0.0	
Delay (s)					11.6	11.3	4.0	4.2			4.4	
Level of Service					B	B	A	A			A	
Approach Delay (s)		0.0			11.5			4.2			4.4	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	36.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	34	55	130	81	633	0	0	615	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					4.2	4.2	4.2	4.2			4.2	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.98	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3473	1583	1770	3539			3475	
Flt Permitted					0.98	1.00	0.36	1.00			1.00	
Satd. Flow (perm)					3473	1583	677	3539			3475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	37	60	141	88	688	0	0	668	92
RTOR Reduction (vph)	0	0	0	0	0	117	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	0	97	24	88	688	0	0	748	0
Turn Type				Split		Perm	Perm					
Protected Phases				8	8			2			6	
Permitted Phases						8	2					
Actuated Green, G (s)					6.0	6.0	20.5	20.5			20.5	
Effective Green, g (s)					6.0	6.0	20.5	20.5			20.5	
Actuated g/C Ratio					0.17	0.17	0.59	0.59			0.59	
Clearance Time (s)					4.2	4.2	4.2	4.2			4.2	
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	
Lane Grp Cap (vph)					597	272	398	2079			2041	
v/s Ratio Prot					c0.03			0.19			c0.22	
v/s Ratio Perm						0.02	0.13					
v/c Ratio					0.16	0.09	0.22	0.33			0.37	
Uniform Delay, d1					12.3	12.2	3.4	3.7			3.8	
Progression Factor					1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2					0.0	0.1	0.1	0.0			0.0	
Delay (s)					12.4	12.2	3.5	3.7			3.8	
Level of Service					B	B	A	A			A	
Approach Delay (s)		0.0			12.3			3.7			3.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	34.9	Sum of lost time (s)	8.4
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	320	4	13	428	167	7	155	5	142	113	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3533		1770	3539	1583	1770	3524		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.68	1.00		0.64	1.00	1.00
Satd. Flow (perm)	1770	3533		1770	3539	1583	1263	3524		1197	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	348	4	14	465	182	8	168	5	154	123	76
RTOR Reduction (vph)	0	0	0	0	0	92	0	2	0	0	0	60
Lane Group Flow (vph)	79	352	0	14	465	90	8	171	0	154	123	16
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		4
Actuated Green, G (s)	5.9	32.8		1.0	27.9	27.9	12.3	12.3		12.3	12.3	12.3
Effective Green, g (s)	5.9	32.8		1.0	27.9	27.9	12.3	12.3		12.3	12.3	12.3
Actuated g/C Ratio	0.10	0.55		0.02	0.47	0.47	0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	176	1954		30	1665	745	262	731		248	386	328
v/s Ratio Prot	c0.04	0.10		0.01	c0.13			0.05			0.07	
v/s Ratio Perm						0.06	0.01			c0.13		0.01
v/c Ratio	0.45	0.18		0.47	0.28	0.12	0.03	0.23		0.62	0.32	0.05
Uniform Delay, d1	25.2	6.6		28.9	9.6	8.8	18.7	19.6		21.4	19.9	18.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0		4.1	0.0	0.0	0.0	0.1		3.4	0.2	0.0
Delay (s)	25.8	6.6		33.0	9.6	8.8	18.8	19.6		24.8	20.1	18.8
Level of Service	C	A		C	A	A	B	B		C	C	B
Approach Delay (s)		10.1			9.9			19.6			21.9	
Approach LOS		B			A			B			C	

Intersection Summary

HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	13.2
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	561	8	23	429	279	11	237	17	206	180	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3531		1770	3539	1583	1770	3505		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.58	1.00		0.58	1.00	1.00
Satd. Flow (perm)	1770	3531		1770	3539	1583	1078	3505		1084	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	610	9	25	466	303	12	258	18	224	196	122
RTOR Reduction (vph)	0	1	0	0	0	174	0	5	0	0	0	89
Lane Group Flow (vph)	141	618	0	25	466	129	12	271	0	224	196	33
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		4
Actuated Green, G (s)	10.2	36.3		2.3	28.4	28.4	19.6	19.6		19.6	19.6	19.6
Effective Green, g (s)	10.2	36.3		2.3	28.4	28.4	19.6	19.6		19.6	19.6	19.6
Actuated g/C Ratio	0.14	0.51		0.03	0.40	0.40	0.27	0.27		0.27	0.27	0.27
Clearance Time (s)	4.0	4.6		4.0	4.6	4.6	4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	253	1795		57	1408	630	296	962		298	511	435
v/s Ratio Prot	c0.08	c0.18		0.01	0.13			0.08			0.11	
v/s Ratio Perm						0.08	0.01			c0.21		0.02
v/c Ratio	0.56	0.34		0.44	0.33	0.20	0.04	0.28		0.75	0.38	0.08
Uniform Delay, d1	28.5	10.5		33.9	14.9	14.1	19.0	20.4		23.7	21.0	19.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.0		2.0	0.1	0.1	0.0	0.1		9.1	0.2	0.0
Delay (s)	30.0	10.5		35.9	15.0	14.2	19.0	20.4		32.8	21.2	19.2
Level of Service	C	B		D	B	B	B	C		C	C	B
Approach Delay (s)		14.1			15.3			20.4			25.5	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	8.6
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	122	0	8	190	5	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	133	0	9	207	5	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	484					
pX, platoon unblocked						
vC, conflicting volume			133		357	133
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			133		357	133
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		99	100
cM capacity (veh/h)			1452		638	917

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	133	215	10
Volume Left	0	9	5
Volume Right	0	0	4
cSH	1700	1452	738
Volume to Capacity	0.08	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.4	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.9
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	165	0	4	182	4	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	179	0	4	198	4	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	484					
pX, platoon unblocked						
vC, conflicting volume			179		386	179
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			179		386	179
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)			1396		615	863

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	179	202	9
Volume Left	0	4	4
Volume Right	0	0	4
cSH	1700	1396	719
Volume to Capacity	0.11	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.2	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	10.1
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	93	112	190	15	5	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2	4.2	4.2	4.2	4.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	122	207	16	5	175
RTOR Reduction (vph)	0	0	0	11	0	144
Lane Group Flow (vph)	101	122	207	5	5	31
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	4.2	17.1	8.9	8.9	5.4	5.4
Effective Green, g (s)	4.2	17.1	8.9	8.9	5.4	5.4
Actuated g/C Ratio	0.14	0.55	0.29	0.29	0.17	0.17
Clearance Time (s)	4.0	4.2	4.2	4.2	4.2	4.2
Vehicle Extension (s)	3.0	4.8	4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	241	1031	537	456	309	277
v/s Ratio Prot	c0.06	0.07	c0.11		0.00	
v/s Ratio Perm				0.00		c0.02
v/c Ratio	0.42	0.12	0.39	0.01	0.02	0.11
Uniform Delay, d1	12.2	3.3	8.8	7.9	10.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.9	0.0	0.0	0.1
Delay (s)	13.4	3.4	9.7	7.9	10.6	10.8
Level of Service	B	A	A	A	B	B
Approach Delay (s)		7.9	9.6		10.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	30.9	Sum of lost time (s)	12.4
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	92	179	82	5	11	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2	4.2	4.2	4.2	4.2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	195	89	5	12	135
RTOR Reduction (vph)	0	0	0	4	0	110
Lane Group Flow (vph)	100	195	89	1	12	25
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	4.2	15.3	7.1	7.1	5.3	5.3
Effective Green, g (s)	4.2	15.3	7.1	7.1	5.3	5.3
Actuated g/C Ratio	0.14	0.53	0.24	0.24	0.18	0.18
Clearance Time (s)	4.0	4.2	4.2	4.2	4.2	4.2
Vehicle Extension (s)	3.0	4.8	4.8	4.8	2.0	2.0
Lane Grp Cap (vph)	256	983	456	388	323	289
v/s Ratio Prot	c0.06	c0.10	0.05		0.01	
v/s Ratio Perm				0.00		c0.02
v/c Ratio	0.39	0.20	0.20	0.00	0.04	0.09
Uniform Delay, d1	11.2	3.6	8.7	8.3	9.8	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.4	0.0	0.0	0.0
Delay (s)	12.2	3.8	9.1	8.3	9.8	9.9
Level of Service	B	A	A	A	A	A
Approach Delay (s)		6.7	9.1		9.9	
Approach LOS		A	A		A	

Intersection Summary

HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	29.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	112	14	35	521	59	23	58	5	7	31	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2	4.2	4.2	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1834		1770	1842		1770	1766	
Flt Permitted	0.34	1.00	1.00	0.68	1.00		0.72	1.00		0.71	1.00	
Satd. Flow (perm)	630	1863	1583	1264	1834		1347	1842		1328	1766	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	122	15	38	566	64	25	63	5	8	34	18
RTOR Reduction (vph)	0	0	6	0	5	0	0	4	0	0	14	0
Lane Group Flow (vph)	5	122	9	38	625	0	25	64	0	8	38	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	29.6	29.6	29.6	29.6	29.6		10.7	10.7		10.7	10.7	
Effective Green, g (s)	29.6	29.6	29.6	29.6	29.6		10.7	10.7		10.7	10.7	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61		0.22	0.22		0.22	0.22	
Clearance Time (s)	4.2	4.2	4.2	4.2	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	383	1132	962	768	1115		296	405		292	388	
v/s Ratio Prot		0.07			c0.34			c0.03			0.02	
v/s Ratio Perm	0.01		0.01	0.03			0.02			0.01		
v/c Ratio	0.01	0.11	0.01	0.05	0.56		0.08	0.16		0.03	0.10	
Uniform Delay, d1	3.8	4.0	3.8	3.9	5.7		15.1	15.4		14.9	15.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0	0.0	0.0	0.4		0.0	0.1		0.0	0.0	
Delay (s)	3.8	4.0	3.8	3.9	6.1		15.2	15.4		14.9	15.2	
Level of Service	A	A	A	A	A		B	B		B	B	
Approach Delay (s)		4.0			5.9			15.4			15.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	8.4
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	10	217	42	44	329	24	51	43	36	22	66	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2	4.2	4.2	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1844		1770	1736		1770	1758	
Flt Permitted	0.47	1.00	1.00	0.61	1.00		0.68	1.00		0.70	1.00	
Satd. Flow (perm)	877	1863	1583	1140	1844		1272	1736		1306	1758	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	236	46	48	358	26	55	47	39	24	72	43
RTOR Reduction (vph)	0	0	23	0	5	0	0	25	0	0	27	0
Lane Group Flow (vph)	11	236	23	48	379	0	55	61	0	24	88	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	17.4	17.4	17.4	17.4	17.4		14.7	14.7		14.7	14.7	
Effective Green, g (s)	17.4	17.4	17.4	17.4	17.4		14.7	14.7		14.7	14.7	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43		0.36	0.36		0.36	0.36	
Clearance Time (s)	4.2	4.2	4.2	4.2	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	377	800	680	490	792		462	630		474	638	
v/s Ratio Prot		0.13			c0.21			0.04			c0.05	
v/s Ratio Perm	0.01		0.01	0.04			0.04			0.02		
v/c Ratio	0.03	0.30	0.03	0.10	0.48		0.12	0.10		0.05	0.14	
Uniform Delay, d1	6.7	7.5	6.7	6.9	8.3		8.6	8.5		8.4	8.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.0	0.2		0.0	0.0		0.0	0.0	
Delay (s)	6.7	7.6	6.7	6.9	8.5		8.6	8.5		8.4	8.7	
Level of Service	A	A	A	A	A		A	A		A	A	
Approach Delay (s)		7.4			8.3			8.6			8.6	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.5	Sum of lost time (s)	8.4
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	39	170	50	0	0	0	0	55	20	7	40	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5						4.5		4.5	4.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.97						0.96		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4902						1795		1770	1863	
Flt Permitted		0.99						1.00		0.70	1.00	
Satd. Flow (perm)		4902						1795		1311	1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	185	54	0	0	0	0	60	22	8	43	0
RTOR Reduction (vph)	0	36	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	0	245	0	0	0	0	0	68	0	8	43	0
Turn Type	Split									Perm		
Protected Phases	2	2						8			4	
Permitted Phases										4		
Actuated Green, G (s)		9.7						9.7		9.7	9.7	
Effective Green, g (s)		9.7						9.7		9.7	9.7	
Actuated g/C Ratio		0.34						0.34		0.34	0.34	
Clearance Time (s)		4.5						4.5		4.5	4.5	
Vehicle Extension (s)		0.2						0.2		0.2	0.2	
Lane Grp Cap (vph)		1674						613		448	636	
v/s Ratio Prot		c0.05						c0.04			0.02	
v/s Ratio Perm										0.01		
v/c Ratio		0.15						0.11		0.02	0.07	
Uniform Delay, d1		6.5						6.4		6.2	6.3	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.0						0.0		0.0	0.0	
Delay (s)		6.5						6.4		6.2	6.3	
Level of Service		A						A		A	A	
Approach Delay (s)		6.5			0.0			6.4			6.3	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	28.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↰↑↑↱						↱		↰	↑	
Volume (vph)	20	423	25	0	0	0	0	58	101	42	65	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5						4.5		4.5	4.5	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frt		0.99						0.91		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5034						1703		1770	1863	
Flt Permitted		1.00						1.00		0.65	1.00	
Satd. Flow (perm)		5034						1703		1207	1863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	460	27	0	0	0	0	63	110	46	71	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	67	0	0	0	0
Lane Group Flow (vph)	0	497	0	0	0	0	0	106	0	46	71	0
Turn Type	Split									Perm		
Protected Phases	2	2						8			4	
Permitted Phases										4		
Actuated Green, G (s)		15.4						15.4		15.4	15.4	
Effective Green, g (s)		15.4						15.4		15.4	15.4	
Actuated g/C Ratio		0.39						0.39		0.39	0.39	
Clearance Time (s)		4.5						4.5		4.5	4.5	
Vehicle Extension (s)		0.2						0.2		0.2	0.2	
Lane Grp Cap (vph)		1948						659		467	721	
v/s Ratio Prot		c0.10						c0.06			0.04	
v/s Ratio Perm										0.04		
v/c Ratio		0.26						0.16		0.10	0.10	
Uniform Delay, d1		8.3						8.0		7.8	7.8	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.0						0.0		0.0	0.0	
Delay (s)		8.3						8.0		7.8	7.8	
Level of Service		A						A		A	A	
Approach Delay (s)		8.3			0.0			8.0			7.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	28	226	8	15	9	0	0	9	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	30	246	9	16	10	0	0	10	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1000			1010							
pX, platoon unblocked												
vC, conflicting volume	254			0			197	315	0	316	311	127
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	254			0			197	315	0	316	311	127
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			98			98	98	100	100	98	99
cM capacity (veh/h)	1308			1622			717	588	1084	597	591	899

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	SW 1
Volume Total	153	132	16	10	18
Volume Left	30	0	16	0	0
Volume Right	0	9	0	0	9
cSH	1622	1700	717	588	705
Volume to Capacity	0.02	0.08	0.02	0.02	0.03
Queue Length 95th (ft)	1	0	2	1	2
Control Delay (s)	1.6	0.0	10.1	11.2	10.2
Lane LOS	A		B	B	B
Approach Delay (s)	0.8		10.5		10.2
Approach LOS			B		B

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	68.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	30	220	19	69	21	0	0	5	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	33	239	21	75	23	0	0	5	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1000			1010							
pX, platoon unblocked												
vC, conflicting volume	260			0			192	325	0	326	315	130
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	260			0			192	325	0	326	315	130
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			98			90	96	100	100	99	100
cM capacity (veh/h)	1302			1622			730	580	1084	576	588	896

Direction, Lane #	NW 1	NW 2	NE 1	NE 2	SW 1
Volume Total	152	140	75	23	10
Volume Left	33	0	75	0	0
Volume Right	0	21	0	0	4
cSH	1622	1700	730	580	694
Volume to Capacity	0.02	0.08	0.10	0.04	0.01
Queue Length 95th (ft)	2	0	9	3	1
Control Delay (s)	1.7	0.0	10.5	11.5	10.3
Lane LOS	A		B	B	B
Approach Delay (s)	0.9		10.7		10.3
Approach LOS			B		B

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	68.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	21	107	9	13	162	24	2	17	11	4	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.8			4.8			4.8			4.8	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.99			0.98			0.95			0.97	
Flt Protected		0.99			1.00			1.00			0.99	
Satd. Flow (prot)		3477			3464			1763			1793	
Flt Permitted		0.89			0.93			1.00			1.00	
Satd. Flow (perm)		3131			3221			1768			1816	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	116	10	14	176	26	2	18	12	4	9	3
RTOR Reduction (vph)	0	8	0	0	20	0	0	11	0	0	3	0
Lane Group Flow (vph)	0	141	0	0	196	0	0	21	0	0	13	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		2.8			2.8			0.6			0.6	
Effective Green, g (s)		2.8			2.8			0.6			0.6	
Actuated g/C Ratio		0.22			0.22			0.05			0.05	
Clearance Time (s)		4.8			4.8			4.8			4.8	
Vehicle Extension (s)		0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)		674			694			82			84	
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.06			c0.01			0.01	
v/c Ratio		0.21			0.28			0.25			0.16	
Uniform Delay, d1		4.2			4.3			6.0			6.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.1			0.6			0.3	
Delay (s)		4.2			4.3			6.6			6.3	
Level of Service		A			A			A			A	
Approach Delay (s)		4.2			4.3			6.6			6.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	13.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	4	131	16	19	167	3	25	20	24	10	32	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.8			4.8			4.8			4.8	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		0.98			1.00			0.95			0.97	
Flt Protected		1.00			0.99			0.98			0.99	
Satd. Flow (prot)		3480			3514			1744			1791	
Flt Permitted		0.94			0.91			1.00			1.00	
Satd. Flow (perm)		3283			3217			1776			1807	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	142	17	21	182	3	27	22	26	11	35	13
RTOR Reduction (vph)	0	14	0	0	2	0	0	23	0	0	12	0
Lane Group Flow (vph)	0	149	0	0	204	0	0	52	0	0	47	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		2.7			2.7			1.4			1.4	
Effective Green, g (s)		2.7			2.7			1.4			1.4	
Actuated g/C Ratio		0.20			0.20			0.10			0.10	
Clearance Time (s)		4.8			4.8			4.8			4.8	
Vehicle Extension (s)		0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)		647			634			181			185	
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.06			c0.03			0.03	
v/c Ratio		0.23			0.32			0.29			0.26	
Uniform Delay, d1		4.6			4.7			5.7			5.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.1			0.3			0.3	
Delay (s)		4.7			4.8			6.0			5.9	
Level of Service		A			A			A			A	
Approach Delay (s)		4.7			4.8			6.0			5.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	13.7	Sum of lost time (s)	9.6
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	188	73	173	178	12	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	204	79	188	193	13	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	537			471		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			284		814	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			247		793	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 %			85		96	97
cM capacity (veh/h)			1280		296	810

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	284	382	34
Volume Left	0	188	13
Volume Right	79	0	21
cSH	1700	1280	485
Volume to Capacity	0.17	0.15	0.07
Queue Length 95th (ft)	0	13	6
Control Delay (s)	0.0	4.8	13.0
Lane LOS		A	B
Approach Delay (s)	0.0	4.8	13.0
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (veh/h)	215	17	24	182	42	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	234	18	26	198	46	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	537			471		
pX, platoon unblocked			0.99		0.99	0.99
vC, conflicting volume			252		493	243
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			241		484	232
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		91	92
cM capacity (veh/h)			1314		526	800

Direction, Lane #	SE 1	NW 1	NE 1
Volume Total	252	224	110
Volume Left	0	26	46
Volume Right	18	0	64
cSH	1700	1314	658
Volume to Capacity	0.15	0.02	0.17
Queue Length 95th (ft)	0	2	15
Control Delay (s)	0.0	1.1	11.6
Lane LOS		A	B
Approach Delay (s)	0.0	1.1	11.6
Approach LOS			B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	48	4	3	42	7	8	84	4	3	67	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.98		1.00	0.99		1.00	0.96	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1823			1823		1770	1851		1770	1791	
Flt Permitted		0.92			0.99		0.69	1.00		0.70	1.00	
Satd. Flow (perm)		1703			1806		1292	1851		1295	1791	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	52	4	3	46	8	9	91	4	3	73	25
RTOR Reduction (vph)	0	3	0	0	6	0	0	1	0	0	11	0
Lane Group Flow (vph)	0	76	0	0	51	0	9	94	0	3	87	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		11.7			11.7		21.4	21.4		21.4	21.4	
Effective Green, g (s)		11.7			11.7		21.4	21.4		21.4	21.4	
Actuated g/C Ratio		0.28			0.28		0.52	0.52		0.52	0.52	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		480			509		666	954		668	924	
v/s Ratio Prot								c0.05			0.05	
v/s Ratio Perm		c0.04			0.03		0.01			0.00		
v/c Ratio		0.16			0.10		0.01	0.10		0.00	0.09	
Uniform Delay, d1		11.2			11.0		4.9	5.1		4.9	5.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.0		0.0	0.0		0.0	0.0	
Delay (s)		11.3			11.0		4.9	5.1		4.9	5.1	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		11.3			11.0			5.1			5.1	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	8.4
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	81	19	9	69	11	14	78	15	27	154	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.98		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1806			1822		1770	1818		1770	1817	
Flt Permitted		0.94			0.97		0.63	1.00		0.69	1.00	
Satd. Flow (perm)		1712			1775		1178	1818		1288	1817	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	88	21	10	75	12	15	85	16	29	167	33
RTOR Reduction (vph)	0	11	0	0	8	0	0	5	0	0	5	0
Lane Group Flow (vph)	0	123	0	0	89	0	15	96	0	29	195	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		13.1			13.1		31.2	31.2		31.2	31.2	
Effective Green, g (s)		13.1			13.1		31.2	31.2		31.2	31.2	
Actuated g/C Ratio		0.25			0.25		0.59	0.59		0.59	0.59	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		426			441		697	1076		763	1076	
v/s Ratio Prot								0.05			c0.11	
v/s Ratio Perm		c0.07			0.05		0.01			0.02		
v/c Ratio		0.29			0.20		0.02	0.09		0.04	0.18	
Uniform Delay, d1		16.0			15.7		4.4	4.6		4.5	4.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.1		0.0	0.0		0.0	0.0	
Delay (s)		16.2			15.7		4.4	4.6		4.5	4.9	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		16.2			15.7			4.6			4.9	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	8.4
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↑			↑	
Volume (vph)	8	32	2	2	14	10	3	99	9	12	92	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.95		1.00	0.99		1.00	0.97	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1834			1758		1770	1839		1770	1812	
Flt Permitted		0.95			0.98		0.68	1.00		0.68	1.00	
Satd. Flow (perm)		1754			1731		1264	1839		1269	1812	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	35	2	2	15	11	3	108	10	13	100	22
RTOR Reduction (vph)	0	1	0	0	8	0	0	5	0	0	12	0
Lane Group Flow (vph)	0	45	0	0	20	0	3	113	0	13	110	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		7.7			7.7		14.1	14.1		14.1	14.1	
Effective Green, g (s)		7.7			7.7		14.1	14.1		14.1	14.1	
Actuated g/C Ratio		0.25			0.25		0.47	0.47		0.47	0.47	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		447			441		590	859		592	846	
v/s Ratio Prot								c0.06			0.06	
v/s Ratio Perm		c0.03			0.01		0.00			0.01		
v/c Ratio		0.10			0.04		0.01	0.13		0.02	0.13	
Uniform Delay, d1		8.6			8.5		4.3	4.6		4.3	4.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.0		0.0	0.0		0.0	0.0	
Delay (s)		8.6			8.5		4.3	4.6		4.3	4.6	
Level of Service		A			A		A	A		A	A	
Approach Delay (s)		8.6			8.5			4.6			4.6	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	30.2	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	12	50	17	4	45	19	4	79	13	19	166	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.96		1.00	0.98		1.00	0.98	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1796			1787		1770	1824		1770	1817	
Flt Permitted		0.96			0.99		0.62	1.00		0.69	1.00	
Satd. Flow (perm)		1737			1770		1162	1824		1290	1817	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	54	18	4	49	21	4	86	14	21	180	35
RTOR Reduction (vph)	0	13	0	0	15	0	0	7	0	0	12	0
Lane Group Flow (vph)	0	72	0	0	59	0	4	93	0	21	203	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		12.4			12.4		22.7	22.7		22.7	22.7	
Effective Green, g (s)		12.4			12.4		22.7	22.7		22.7	22.7	
Actuated g/C Ratio		0.29			0.29		0.52	0.52		0.52	0.52	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		495			505		606	952		673	948	
v/s Ratio Prot								0.05			c0.11	
v/s Ratio Perm		c0.04			0.03		0.00			0.02		
v/c Ratio		0.15			0.12		0.01	0.10		0.03	0.21	
Uniform Delay, d1		11.6			11.5		5.0	5.2		5.1	5.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.0		0.0	0.0		0.0	0.0	
Delay (s)		11.6			11.5		5.0	5.3		5.1	5.6	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		11.6			11.5			5.2			5.6	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	8.4
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	19	109	8	7	125	42	14	94	13	19	100	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.99			0.96		1.00	0.98		1.00	0.97	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3482			3404		1770	1829		1770	1806	
Flt Permitted		0.92			0.95		0.67	1.00		0.68	1.00	
Satd. Flow (perm)		3211			3228		1247	1829		1271	1806	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	118	9	8	136	46	15	102	14	21	109	28
RTOR Reduction (vph)	0	5	0	0	23	0	0	8	0	0	14	0
Lane Group Flow (vph)	0	143	0	0	167	0	15	108	0	21	123	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		20.7			20.7		13.1	13.1		13.1	13.1	
Effective Green, g (s)		20.7			20.7		13.1	13.1		13.1	13.1	
Actuated g/C Ratio		0.49			0.49		0.31	0.31		0.31	0.31	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1575			1583		387	568		395	561	
v/s Ratio Prot								0.06			c0.07	
v/s Ratio Perm		0.04			c0.05		0.01			0.02		
v/c Ratio		0.09			0.11		0.04	0.19		0.05	0.22	
Uniform Delay, d1		5.7			5.8		10.2	10.7		10.2	10.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.0		0.0	0.1		0.0	0.1	
Delay (s)		5.7			5.8		10.2	10.7		10.2	10.8	
Level of Service		A			A		B	B		B	B	
Approach Delay (s)		5.7			5.8			10.7			10.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	8.4
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	20	91	7	20	163	20	9	91	23	35	202	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frt		0.99			0.99		1.00	0.97		1.00	0.96	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3477			3469		1770	1806		1770	1788	
Flt Permitted		0.90			0.93		0.47	1.00		0.68	1.00	
Satd. Flow (perm)		3171			3240		878	1806		1262	1788	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	99	8	22	177	22	10	99	25	38	220	80
RTOR Reduction (vph)	0	4	0	0	11	0	0	14	0	0	20	0
Lane Group Flow (vph)	0	125	0	0	210	0	10	110	0	38	280	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4			4		
Actuated Green, G (s)		30.0			30.0		19.0	19.0		19.0	19.0	
Effective Green, g (s)		30.0			30.0		19.0	19.0		19.0	19.0	
Actuated g/C Ratio		0.52			0.52		0.33	0.33		0.33	0.33	
Clearance Time (s)		4.2			4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)		0.2			0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1657			1693		291	598		418	592	
v/s Ratio Prot								0.06			c0.16	
v/s Ratio Perm		0.04			c0.06		0.01			0.03		
v/c Ratio		0.08			0.12		0.03	0.18		0.09	0.47	
Uniform Delay, d1		6.8			7.0		13.0	13.7		13.2	15.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			0.0		0.0	0.1		0.0	0.2	
Delay (s)		6.8			7.0		13.0	13.7		13.3	15.4	
Level of Service		A			A		B	B		B	B	
Approach Delay (s)		6.8			7.0			13.7			15.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	220	213	21	16	148	26	38	107	13	43	120	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1821		1770	3482		1770	3261	
Flt Permitted	0.64	1.00	1.00	0.60	1.00		0.58	1.00		0.67	1.00	
Satd. Flow (perm)	1189	1863	1583	1120	1821		1087	3482		1247	3261	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	232	23	17	161	28	41	116	14	47	130	143
RTOR Reduction (vph)	0	0	14	0	10	0	0	8	0	0	80	0
Lane Group Flow (vph)	239	232	9	17	179	0	41	122	0	47	193	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	23.0	23.0	23.0	23.0	23.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	23.0	23.0	23.0	23.0	23.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41		0.44	0.44		0.44	0.44	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	482	756	642	454	739		479	1535		550	1438	
v/s Ratio Prot		0.12			0.10			0.04			c0.06	
v/s Ratio Perm	c0.20		0.01	0.02			0.04			0.04		
v/c Ratio	0.50	0.31	0.01	0.04	0.24		0.09	0.08		0.09	0.13	
Uniform Delay, d1	12.5	11.4	10.1	10.2	11.1		9.2	9.2		9.2	9.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1	0.0	0.0	0.1		0.0	0.0		0.0	0.0	
Delay (s)	12.8	11.5	10.1	10.2	11.2		9.2	9.2		9.2	9.4	
Level of Service	B	B	B	B	B		A	A		A	A	
Approach Delay (s)		12.1			11.1			9.2			9.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	8.7
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	131	196	78	24	163	47	17	98	12	40	209	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1800		1770	3482		1770	3351	
Flt Permitted	0.61	1.00	1.00	0.62	1.00		0.54	1.00		0.68	1.00	
Satd. Flow (perm)	1129	1863	1583	1163	1800		1008	3482		1259	3351	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	213	85	26	177	51	18	107	13	43	227	125
RTOR Reduction (vph)	0	0	51	0	17	0	0	7	0	0	70	0
Lane Group Flow (vph)	142	213	34	26	211	0	18	113	0	43	282	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)	23.0	23.0	23.0	23.0	23.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	23.0	23.0	23.0	23.0	23.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41		0.44	0.44		0.44	0.44	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	458	756	642	472	730		444	1535		555	1478	
v/s Ratio Prot		0.11			0.12			0.03			c0.08	
v/s Ratio Perm	c0.13		0.02	0.02			0.02			0.03		
v/c Ratio	0.31	0.28	0.05	0.06	0.29		0.04	0.07		0.08	0.19	
Uniform Delay, d1	11.5	11.3	10.2	10.2	11.3		9.0	9.2		9.2	9.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.0	0.1		0.0	0.0		0.0	0.0	
Delay (s)	11.6	11.4	10.3	10.3	11.4		9.0	9.2		9.2	9.7	
Level of Service	B	B	B	B	B		A	A		A	A	
Approach Delay (s)		11.2			11.3			9.1			9.6	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	8.7
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	93	118	57	77	412	59	78	236	23	40	207	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.98		1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1772		1770	3473		1770	3492		1770	3299	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1772		1770	3473		1770	3492		1770	3299	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	128	62	84	448	64	85	257	25	43	225	186
RTOR Reduction (vph)	0	20	0	0	13	0	0	8	0	0	141	0
Lane Group Flow (vph)	101	170	0	84	499	0	85	274	0	43	270	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.4	18.6		6.1	18.3		6.1	17.5		3.6	15.0	
Effective Green, g (s)	6.4	18.6		6.1	18.3		6.1	17.5		3.6	15.0	
Actuated g/C Ratio	0.10	0.30		0.10	0.29		0.10	0.28		0.06	0.24	
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	182	530		174	1022		174	982		102	796	
v/s Ratio Prot	c0.06	0.10		0.05	c0.14		c0.05	0.08		0.02	c0.08	
v/s Ratio Perm												
v/c Ratio	0.55	0.32		0.48	0.49		0.49	0.28		0.42	0.34	
Uniform Delay, d1	26.5	16.9		26.6	18.1		26.6	17.4		28.3	19.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	0.7		0.8	0.8		0.8	0.3		1.0	0.5	
Delay (s)	28.6	17.6		27.3	18.9		27.4	17.8		29.3	20.0	
Level of Service	C	B		C	B		C	B		C	C	
Approach Delay (s)		21.4			20.1			20.0			20.9	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	16.4
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	90	195	52	64	377	49	51	225	25	42	228	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.98		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1804		1770	3478		1770	3487		1770	3310	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1804		1770	3478		1770	3487		1770	3310	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	212	57	70	410	53	55	245	27	46	248	189
RTOR Reduction (vph)	0	10	0	0	12	0	0	10	0	0	143	0
Lane Group Flow (vph)	98	259	0	70	451	0	55	262	0	46	294	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.3	20.2		4.1	18.0		3.7	14.4		3.5	14.2	
Effective Green, g (s)	6.3	20.2		4.1	18.0		3.7	14.4		3.5	14.2	
Actuated g/C Ratio	0.11	0.34		0.07	0.31		0.06	0.25		0.06	0.24	
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	190	622		124	1068		112	857		106	802	
v/s Ratio Prot	c0.06	c0.14		0.04	0.13		c0.03	0.08		0.03	c0.09	
v/s Ratio Perm												
v/c Ratio	0.52	0.42		0.56	0.42		0.49	0.31		0.43	0.37	
Uniform Delay, d1	24.7	14.7		26.4	16.2		26.5	18.0		26.6	18.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.9		3.5	0.6		1.2	0.4		1.0	0.6	
Delay (s)	25.7	15.6		29.9	16.7		27.8	18.4		27.6	19.1	
Level of Service	C	B		C	B		C	B		C	B	
Approach Delay (s)		18.3			18.5			20.0			19.9	
Approach LOS		B			B			C			B	

Intersection Summary

HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.2
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	141	200	197	0	0	0	0	308	61	84	632	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5					4.5		4.5	4.5	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.98		1.00	1.00	
Flt Protected		0.98	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4982	1583					3452		1770	3539	
Flt Permitted		0.98	1.00					1.00		0.52	1.00	
Satd. Flow (perm)		4982	1583					3452		961	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	217	214	0	0	0	0	335	66	91	687	0
RTOR Reduction (vph)	0	0	109	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	0	370	105	0	0	0	0	371	0	91	687	0
Turn Type	Split		Perm							Perm		
Protected Phases	2	2						4			4	
Permitted Phases			2							4		
Actuated Green, G (s)		19.0	19.0					26.0		26.0	26.0	
Effective Green, g (s)		19.0	19.0					26.0		26.0	26.0	
Actuated g/C Ratio		0.35	0.35					0.48		0.48	0.48	
Clearance Time (s)		4.5	4.5					4.5		4.5	4.5	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1753	557					1662		463	1704	
v/s Ratio Prot		c0.07						0.11			c0.19	
v/s Ratio Perm			0.07							0.09		
v/c Ratio		0.21	0.19					0.22		0.20	0.40	
Uniform Delay, d1		12.3	12.1					8.1		8.0	9.0	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.1					0.0		0.1	0.1	
Delay (s)		12.3	12.2					8.2		8.1	9.1	
Level of Service		B	B					A		A	A	
Approach Delay (s)		12.3			0.0			8.2			9.0	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	168	290	114	0	0	0	0	505	41	72	430	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5	4.5					4.5		4.5	4.5	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.99		1.00	1.00	
Flt Protected		0.98	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4994	1583					3499		1770	3539	
Flt Permitted		0.98	1.00					1.00		0.40	1.00	
Satd. Flow (perm)		4994	1583					3499		754	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	315	124	0	0	0	0	549	45	78	467	0
RTOR Reduction (vph)	0	0	80	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	498	44	0	0	0	0	583	0	78	467	0
Turn Type	Split		Perm							Perm		
Protected Phases	2	2						4			4	
Permitted Phases			2							4		
Actuated Green, G (s)		19.0	19.0					26.0		26.0	26.0	
Effective Green, g (s)		19.0	19.0					26.0		26.0	26.0	
Actuated g/C Ratio		0.35	0.35					0.48		0.48	0.48	
Clearance Time (s)		4.5	4.5					4.5		4.5	4.5	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1757	557					1685		363	1704	
v/s Ratio Prot		c0.10						c0.17			0.13	
v/s Ratio Perm			0.03							0.10		
v/c Ratio		0.28	0.08					0.35		0.21	0.27	
Uniform Delay, d1		12.6	11.7					8.7		8.1	8.4	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.0		0.1	0.0	
Delay (s)		12.6	11.7					8.8		8.2	8.4	
Level of Service		B	B					A		A	A	
Approach Delay (s)		12.4			0.0			8.8			8.4	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	36	162	47	45	235	0	0	1078	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1863	1583	1770	3539			3539	1583
Flt Permitted				0.95	1.00	1.00	0.20	1.00			1.00	1.00
Satd. Flow (perm)				1770	1863	1583	365	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	39	176	51	49	255	0	0	1172	123
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	53
Lane Group Flow (vph)	0	0	0	39	176	10	49	255	0	0	1172	70
Turn Type				Split		Perm	Perm					Perm
Protected Phases				6	6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)				7.0	7.0	7.0	20.4	20.4			20.4	20.4
Effective Green, g (s)				7.0	7.0	7.0	20.4	20.4			20.4	20.4
Actuated g/C Ratio				0.20	0.20	0.20	0.57	0.57			0.57	0.57
Clearance Time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Vehicle Extension (s)				3.0	3.0	3.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)				346	364	310	208	2017			2017	902
v/s Ratio Prot				0.02	c0.09			0.07			c0.33	
v/s Ratio Perm						0.01	0.13					0.04
v/c Ratio				0.11	0.48	0.03	0.24	0.13			0.58	0.08
Uniform Delay, d1				11.8	12.8	11.7	3.8	3.6			5.0	3.5
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1	1.0	0.0	1.2	0.1			0.7	0.1
Delay (s)				12.0	13.8	11.7	5.0	3.6			5.6	3.5
Level of Service				B	B	B	A	A			A	A
Approach Delay (s)		0.0			13.1			3.9			5.4	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	8.4
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	42	137	104	15	1045	0	0	445	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Lane Util. Factor				1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1863	1583	1770	3539			3539	1583
Flt Permitted				0.95	1.00	1.00	0.48	1.00			1.00	1.00
Satd. Flow (perm)				1770	1863	1583	887	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	149	113	16	1136	0	0	484	36
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	15
Lane Group Flow (vph)	0	0	0	46	149	72	16	1136	0	0	484	21
Turn Type				Split		Perm	Perm					Perm
Protected Phases				6	6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)				6.7	6.7	6.7	20.3	20.3			20.3	20.3
Effective Green, g (s)				6.7	6.7	6.7	20.3	20.3			20.3	20.3
Actuated g/C Ratio				0.19	0.19	0.19	0.57	0.57			0.57	0.57
Clearance Time (s)				4.2	4.2	4.2	4.2	4.2			4.2	4.2
Vehicle Extension (s)				3.0	3.0	3.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)				335	353	300	509	2029			2029	908
v/s Ratio Prot				0.03	c0.08			c0.32			0.14	
v/s Ratio Perm						0.05	0.02					0.01
v/c Ratio				0.14	0.42	0.24	0.03	0.56			0.24	0.02
Uniform Delay, d1				11.9	12.6	12.2	3.3	4.7			3.7	3.3
Progression Factor				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2	0.8	0.4	0.1	0.6			0.1	0.0
Delay (s)				12.1	13.5	12.6	3.3	5.3			3.9	3.3
Level of Service				B	B	B	A	A			A	A
Approach Delay (s)		0.0			13.0			5.3			3.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	35.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	40	171	47	69	230	89	34	219	22	98	1102	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3491		1770	3488	
Flt Permitted	0.55	1.00	1.00	0.64	1.00	1.00	0.13	1.00		0.59	1.00	
Satd. Flow (perm)	1025	1863	1583	1193	1863	1583	247	3491		1099	3488	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	186	51	75	250	97	37	238	24	107	1198	127
RTOR Reduction (vph)	0	0	32	0	0	65	0	12	0	0	13	0
Lane Group Flow (vph)	43	186	19	75	250	32	37	250	0	107	1312	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	19.0	19.0	19.0	19.0	19.0	19.0	30.2	30.2		30.2	30.2	
Effective Green, g (s)	19.0	19.0	19.0	19.0	19.0	19.0	30.2	30.2		30.2	30.2	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.52	0.52		0.52	0.52	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	336	610	519	391	610	519	129	1818		572	1816	
v/s Ratio Prot		0.10			c0.13			0.07			c0.38	
v/s Ratio Perm	0.04		0.01	0.06		0.02	0.15			0.10		
v/c Ratio	0.13	0.30	0.04	0.19	0.41	0.06	0.29	0.14		0.19	0.72	
Uniform Delay, d1	13.7	14.6	13.3	14.0	15.1	13.4	7.8	7.2		7.4	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.1	0.2	0.0	0.4	0.0		0.1	1.2	
Delay (s)	13.7	14.7	13.3	14.1	15.3	13.4	8.3	7.2		7.4	11.9	
Level of Service	B	B	B	B	B	B	A	A		A	B	
Approach Delay (s)		14.3			14.7			7.3			11.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	124	246	36	51	211	113	35	995	69	66	363	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3505		1770	3475	
Flt Permitted	0.58	1.00	1.00	0.53	1.00	1.00	0.49	1.00		0.16	1.00	
Satd. Flow (perm)	1081	1863	1583	980	1863	1583	917	3505		305	3475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	267	39	55	229	123	38	1082	75	72	395	54
RTOR Reduction (vph)	0	0	26	0	0	44	0	8	0	0	18	0
Lane Group Flow (vph)	135	267	13	55	229	79	38	1149	0	72	431	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	19.0	19.0	19.0	19.0	19.0	19.0	30.2	30.2		30.2	30.2	
Effective Green, g (s)	19.0	19.0	19.0	19.0	19.0	19.0	30.2	30.2		30.2	30.2	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.52	0.52		0.52	0.52	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2		4.2	4.2	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	354	610	519	321	610	519	477	1825		159	1809	
v/s Ratio Prot		c0.14			0.12			c0.33			0.12	
v/s Ratio Perm	0.12		0.01	0.06		0.05	0.04			0.24		
v/c Ratio	0.38	0.44	0.02	0.17	0.38	0.15	0.08	0.63		0.45	0.24	
Uniform Delay, d1	15.0	15.3	13.2	13.9	15.0	13.8	7.0	9.9		8.7	7.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.2	0.0	0.1	0.1	0.1	0.0	0.5		0.7	0.0	
Delay (s)	15.2	15.5	13.2	14.0	15.1	13.9	7.0	10.4		9.5	7.6	
Level of Service	B	B	B	B	B	B	A	B		A	A	
Approach Delay (s)		15.2			14.6			10.3			7.9	
Approach LOS		B			B			B			A	

Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	86	42	0	0	0	23	313	46	185	1280	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	0.98		1.00	0.98	
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1837	1583				1770	3471		1770	3475	
Flt Permitted		0.99	1.00				0.13	1.00		0.52	1.00	
Satd. Flow (perm)		1837	1583				243	3471		971	3475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	93	46	0	0	0	25	340	50	201	1391	190
RTOR Reduction (vph)	0	0	16	0	0	0	0	11	0	0	10	0
Lane Group Flow (vph)	0	129	30	0	0	0	25	379	0	201	1571	0
Turn Type	Split		Perm				Perm			Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		6.2	6.2				30.6	30.6		30.6	30.6	
Effective Green, g (s)		6.2	6.2				30.6	30.6		30.6	30.6	
Actuated g/C Ratio		0.13	0.13				0.67	0.67		0.67	0.67	
Clearance Time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2				4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)		248	213				162	2309		646	2312	
v/s Ratio Prot		c0.07						0.11			c0.45	
v/s Ratio Perm			0.02				0.10			0.21		
v/c Ratio		0.52	0.14				0.15	0.16		0.31	0.68	
Uniform Delay, d1		18.5	17.5				2.9	2.9		3.3	4.7	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1				0.6	0.0		0.4	0.9	
Delay (s)		19.4	17.7				3.5	2.9		3.6	5.6	
Level of Service		B	B				A	A		A	A	
Approach Delay (s)		19.0			0.0			3.0			5.4	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	82	149	22	0	0	0	25	1020	91	153	585	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00	1.00				1.00	0.95		1.00	0.95	
Frt		1.00	0.85				1.00	0.99		1.00	0.98	
Flt Protected		0.98	1.00				0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1830	1583				1770	3496		1770	3481	
Flt Permitted		0.98	1.00				0.37	1.00		0.19	1.00	
Satd. Flow (perm)		1830	1583				697	3496		349	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	162	24	0	0	0	27	1109	99	166	636	78
RTOR Reduction (vph)	0	0	19	0	0	0	0	7	0	0	10	0
Lane Group Flow (vph)	0	251	5	0	0	0	27	1201	0	166	704	0
Turn Type	Split		Perm				Perm			Perm		
Protected Phases	4	4						2			6	
Permitted Phases			4				2			6		
Actuated Green, G (s)		10.1	10.1				30.5	30.5		30.5	30.5	
Effective Green, g (s)		10.1	10.1				30.5	30.5		30.5	30.5	
Actuated g/C Ratio		0.20	0.20				0.61	0.61		0.61	0.61	
Clearance Time (s)		4.6	4.6				4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2				4.1	4.1		4.1	4.1	
Lane Grp Cap (vph)		371	321				427	2141		214	2132	
v/s Ratio Prot		c0.14						0.34			0.20	
v/s Ratio Perm			0.00				0.04			c0.48		
v/c Ratio		0.68	0.02				0.06	0.56		0.78	0.33	
Uniform Delay, d1		18.3	15.9				3.9	5.7		7.1	4.7	
Progression Factor		1.00	1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.8	0.0				0.1	0.4		17.1	0.1	
Delay (s)		22.2	15.9				4.0	6.1		24.2	4.8	
Level of Service		C	B				A	A		C	A	
Approach Delay (s)		21.6			0.0			6.1			8.5	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	9.2
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	942	0	346	677	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.1		4.1	4.6	
Lane Util. Factor		0.88		0.95	0.95	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		2787		3539	3539	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		2787		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1024	0	376	736	0
RTOR Reduction (vph)	0	551	0	0	0	0
Lane Group Flow (vph)	0	473	0	376	736	0
Turn Type		custom				
Protected Phases				6	4	
Permitted Phases		7				
Actuated Green, G (s)		16.4		10.9	15.9	
Effective Green, g (s)		16.4		10.9	15.9	
Actuated g/C Ratio		0.46		0.31	0.45	
Clearance Time (s)		4.1		4.1	4.6	
Vehicle Extension (s)		1.2		3.0	4.0	
Lane Grp Cap (vph)		1288		1087	1585	
v/s Ratio Prot				c0.11	c0.21	
v/s Ratio Perm		0.17				
v/c Ratio		0.37		0.35	0.46	
Uniform Delay, d1		6.2		9.5	6.8	
Progression Factor		1.00		1.00	1.00	
Incremental Delay, d2		0.1		0.2	0.3	
Delay (s)		6.3		9.7	7.1	
Level of Service		A		A	A	
Approach Delay (s)	6.3			9.7	7.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	35.5	Sum of lost time (s)	8.7
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	0	314	0	1103	509	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.1		4.1	4.6	
Lane Util. Factor		0.88		0.95	0.95	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		2787		3539	3539	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		2787		3539	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	341	0	1199	553	0
RTOR Reduction (vph)	0	225	0	0	0	0
Lane Group Flow (vph)	0	116	0	1199	553	0
Turn Type		custom				
Protected Phases				6	4	
Permitted Phases		7				
Actuated Green, G (s)		14.9		20.8	14.4	
Effective Green, g (s)		14.9		20.8	14.4	
Actuated g/C Ratio		0.34		0.47	0.33	
Clearance Time (s)		4.1		4.1	4.6	
Vehicle Extension (s)		1.2		3.0	4.0	
Lane Grp Cap (vph)		946		1677	1161	
v/s Ratio Prot				c0.34	c0.16	
v/s Ratio Perm		0.04				
v/c Ratio		0.12		0.71	0.48	
Uniform Delay, d1		10.0		9.2	11.7	
Progression Factor		1.00		1.00	1.00	
Incremental Delay, d2		0.0		1.5	0.4	
Delay (s)		10.0		10.7	12.2	
Level of Service		B		B	B	
Approach Delay (s)	10.0			10.7	12.2	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	8.7
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	535	5	0	312	0	0	0	0	475	960	896
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.95			0.95					0.91	0.91	1.00
Frt		1.00			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3535			3539					1610	3382	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3535			3539					1610	3382	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	582	5	0	339	0	0	0	0	516	1043	974
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	201
Lane Group Flow (vph)	0	586	0	0	339	0	0	0	0	464	1095	773
Turn Type	Perm									Perm		Perm
Protected Phases		4			8						2	
Permitted Phases	4									2		2
Actuated Green, G (s)		11.7			11.7					16.1	16.1	16.1
Effective Green, g (s)		11.7			11.7					16.1	16.1	16.1
Actuated g/C Ratio		0.33			0.33					0.45	0.45	0.45
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1155			1157					724	1521	712
v/s Ratio Prot		c0.17			0.10							
v/s Ratio Perm										0.29	0.32	c0.49
v/c Ratio		0.51			0.29					0.64	0.72	1.09
Uniform Delay, d1		9.7			9.0					7.6	8.0	9.8
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4			0.1					1.9	1.7	59.4
Delay (s)		10.1			9.1					9.6	9.7	69.3
Level of Service		B			A					A	A	E
Approach Delay (s)		10.1			9.1			0.0			32.6	
Approach LOS		B			A			A			C	

Intersection Summary

HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑					↰	↰↑↑	↱
Volume (vph)	0	1080	10	0	276	0	0	0	0	594	308	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0			4.0					4.0	4.0	4.0
Lane Util. Factor		0.95			0.95					0.91	0.91	1.00
Frt		1.00			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	0.98	1.00
Satd. Flow (prot)		3534			3539					1610	3309	1583
Flt Permitted		1.00			1.00					0.95	0.98	1.00
Satd. Flow (perm)		3534			3539					1610	3309	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1174	11	0	300	0	0	0	0	646	335	367
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	227
Lane Group Flow (vph)	0	1183	0	0	300	0	0	0	0	323	658	140
Turn Type										Perm		Perm
Protected Phases		4			8						2	
Permitted Phases										2		2
Actuated Green, G (s)		15.6			15.6					14.5	14.5	14.5
Effective Green, g (s)		15.6			15.6					14.5	14.5	14.5
Actuated g/C Ratio		0.41			0.41					0.38	0.38	0.38
Clearance Time (s)		4.0			4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1447			1449					613	1259	602
v/s Ratio Prot		c0.33			0.08							
v/s Ratio Perm										c0.20	0.20	0.09
v/c Ratio		0.82			0.21					0.53	0.52	0.23
Uniform Delay, d1		10.0			7.3					9.1	9.1	8.0
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		3.7			0.1					0.8	0.4	0.2
Delay (s)		13.7			7.3					10.0	9.5	8.2
Level of Service		B			A					A	A	A
Approach Delay (s)		13.7			7.3			0.0			9.3	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	38.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑	↰	↱
Volume (vph)	143	184	0	447	232	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.1	4.1		4.1	4.1	4.1
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1583		3539	1770	1583
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	3539	1583		3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	200	0	486	252	201
RTOR Reduction (vph)	0	130	0	0	0	99
Lane Group Flow (vph)	155	70	0	486	252	102
Turn Type		Perm				Perm
Protected Phases	6			6	8	
Permitted Phases		6				8
Actuated Green, G (s)	20.4	20.4		20.4	29.5	29.5
Effective Green, g (s)	20.4	20.4		20.4	29.5	29.5
Actuated g/C Ratio	0.35	0.35		0.35	0.51	0.51
Clearance Time (s)	4.1	4.1		4.1	4.1	4.1
Vehicle Extension (s)	3.0	3.0		3.0	0.2	0.2
Lane Grp Cap (vph)	1243	556		1243	899	804
v/s Ratio Prot	0.04			c0.14	c0.14	
v/s Ratio Perm		0.04				0.06
v/c Ratio	0.12	0.13		0.39	0.28	0.13
Uniform Delay, d1	12.8	12.8		14.2	8.2	7.5
Progression Factor	1.00	1.00		0.60	1.00	1.00
Incremental Delay, d2	0.0	0.1		0.1	0.1	0.0
Delay (s)	12.8	12.9		8.6	8.3	7.6
Level of Service	B	B		A	A	A
Approach Delay (s)	12.9			8.6	8.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	8.2
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑	↰	↱
Volume (vph)	404	766	0	371	137	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.1	4.1		4.1	4.1	4.1
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1583		3539	1770	1583
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	3539	1583		3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	439	833	0	403	149	332
RTOR Reduction (vph)	0	524	0	0	0	81
Lane Group Flow (vph)	439	309	0	403	149	251
Turn Type		Perm				Perm
Protected Phases	6			6	8	
Permitted Phases		6				8
Actuated Green, G (s)	21.2	21.2		21.2	27.7	27.7
Effective Green, g (s)	21.2	21.2		21.2	27.7	27.7
Actuated g/C Ratio	0.37	0.37		0.37	0.49	0.49
Clearance Time (s)	4.1	4.1		4.1	4.1	4.1
Vehicle Extension (s)	3.0	3.0		3.0	0.2	0.2
Lane Grp Cap (vph)	1314	588		1314	859	768
v/s Ratio Prot	0.12			0.11	0.08	
v/s Ratio Perm		c0.20				c0.16
v/c Ratio	0.33	0.53		0.31	0.17	0.33
Uniform Delay, d1	12.9	14.0		12.7	8.3	9.0
Progression Factor	1.00	1.00		0.56	1.00	1.00
Incremental Delay, d2	0.2	0.9		0.1	0.0	0.1
Delay (s)	13.0	14.9		7.2	8.3	9.1
Level of Service	B	B		A	A	A
Approach Delay (s)	14.2			7.2	8.8	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	8.2
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

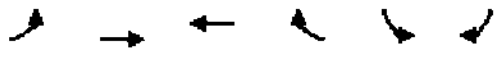
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	422	569	359	581	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1	4.1	4.1		
Lane Util. Factor	1.00	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1947	3893	3893	1742		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1947	3893	3893	1742		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	459	618	390	632	0	0
RTOR Reduction (vph)	0	0	0	421	0	0
Lane Group Flow (vph)	459	618	390	211	0	0
Turn Type	Prot			Perm		
Protected Phases	3	8	4			
Permitted Phases				4		
Actuated Green, G (s)	6.4	29.5	19.4	19.4		
Effective Green, g (s)	6.4	29.5	19.4	19.4		
Actuated g/C Ratio	0.11	0.51	0.33	0.33		
Clearance Time (s)	3.7	4.1	4.1	4.1		
Vehicle Extension (s)	8.0	0.2	4.1	4.1		
Lane Grp Cap (vph)	214	1977	1300	582		
v/s Ratio Prot	c0.24	0.16	0.10			
v/s Ratio Perm				c0.12		
v/c Ratio	2.14	0.31	0.30	0.36		
Uniform Delay, d1	25.8	8.4	14.3	14.7		
Progression Factor	1.00	1.00	1.22	3.66		
Incremental Delay, d2	530.5	0.0	0.2	0.5		
Delay (s)	556.3	8.4	17.6	54.1		
Level of Service	F	A	B	D		
Approach Delay (s)		241.9	40.2		0.0	
Approach LOS		F	D		A	

Intersection Summary

HCM Average Control Delay	143.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	32.3
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	741	823	285	569	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1	4.1	4.1		
Lane Util. Factor	1.00	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1947	3893	3893	1742		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1947	3893	3893	1742		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	805	895	310	618	0	0
RTOR Reduction (vph)	0	0	0	428	0	0
Lane Group Flow (vph)	805	895	310	190	0	0
Turn Type	Prot			Perm		
Protected Phases	3	8	4			
Permitted Phases				4		
Actuated Green, G (s)	6.4	27.7	17.6	17.6		
Effective Green, g (s)	6.4	27.7	17.6	17.6		
Actuated g/C Ratio	0.11	0.49	0.31	0.31		
Clearance Time (s)	3.7	4.1	4.1	4.1		
Vehicle Extension (s)	8.0	0.2	4.1	4.1		
Lane Grp Cap (vph)	218	1889	1200	537		
v/s Ratio Prot	c0.41	c0.23	0.08			
v/s Ratio Perm				0.11		
v/c Ratio	3.69	0.47	0.26	0.35		
Uniform Delay, d1	25.4	9.8	14.8	15.3		
Progression Factor	1.00	1.00	1.19	3.20		
Incremental Delay, d2	1222.9	0.1	0.2	0.5		
Delay (s)	1248.3	9.9	17.8	49.6		
Level of Service	F	A	B	D		
Approach Delay (s)		596.3	39.0		0.0	
Approach LOS		F	D		A	

Intersection Summary			
HCM Average Control Delay	399.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	29.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	646	96	102	771	57	424	300	30	203	310	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3503		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3503		3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	702	104	111	838	62	461	326	33	221	337	196
RTOR Reduction (vph)	0	0	66	0	8	0	0	0	27	0	0	176
Lane Group Flow (vph)	124	702	38	111	892	0	461	326	6	221	337	20
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			2
Actuated Green, G (s)	5.3	23.5	23.5	5.2	23.1		11.2	11.8	11.8	6.1	6.4	6.4
Effective Green, g (s)	5.3	23.5	23.5	5.2	23.1		11.2	11.8	11.8	6.1	6.4	6.4
Actuated g/C Ratio	0.08	0.37	0.37	0.08	0.36		0.18	0.18	0.18	0.10	0.10	0.10
Clearance Time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.2		2.0	5.0	5.0	2.0	5.2	5.2
Lane Grp Cap (vph)	285	1304	583	280	1268		603	655	293	328	355	159
v/s Ratio Prot	c0.04	0.20		0.03	c0.25		c0.13	0.09		0.06	c0.10	
v/s Ratio Perm			0.02						0.00			0.01
v/c Ratio	0.44	0.54	0.07	0.40	0.70		0.76	0.50	0.02	0.67	0.95	0.12
Uniform Delay, d1	27.8	15.9	13.0	27.8	17.4		25.0	23.3	21.3	27.9	28.5	26.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.8	0.1	0.3	2.3		5.2	1.2	0.1	4.3	35.2	0.8
Delay (s)	28.2	16.7	13.1	28.1	19.8		30.2	24.6	21.3	32.1	63.8	26.9
Level of Service	C	B	B	C	B		C	C	C	C	E	C
Approach Delay (s)		17.8			20.7			27.6			44.9	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	17.8
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	397	925	190	110	627	92	380	452	52	259	355	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3471		3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3471		3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	432	1005	207	120	682	100	413	491	57	282	386	97
RTOR Reduction (vph)	0	0	92	0	17	0	0	0	46	0	0	87
Lane Group Flow (vph)	432	1005	115	120	765	0	413	491	11	282	386	10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			2
Actuated Green, G (s)	8.0	26.0	26.0	5.5	23.2		11.0	12.4	12.4	6.0	7.1	7.1
Effective Green, g (s)	8.0	26.0	26.0	5.5	23.2		11.0	12.4	12.4	6.0	7.1	7.1
Actuated g/C Ratio	0.12	0.39	0.39	0.08	0.35		0.16	0.18	0.18	0.09	0.11	0.11
Clearance Time (s)	4.0	4.6	4.6	4.0	4.9		4.0	4.6	4.6	4.0	4.9	4.9
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.2		2.0	5.0	5.0	2.0	5.2	5.2
Lane Grp Cap (vph)	409	1371	613	281	1200		563	654	293	307	374	168
v/s Ratio Prot	c0.13	c0.28		0.03	0.22		c0.12	c0.14		c0.08	0.11	
v/s Ratio Perm			0.07						0.01			0.01
v/c Ratio	1.06	0.73	0.19	0.43	0.64		0.73	0.75	0.04	0.92	1.03	0.06
Uniform Delay, d1	29.6	17.6	13.6	29.3	18.4		26.7	25.9	22.4	30.3	30.0	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	60.1	2.5	0.3	0.4	1.6		4.3	5.8	0.1	30.3	55.0	0.3
Delay (s)	89.7	20.1	13.9	29.7	20.0		30.9	31.6	22.6	60.6	85.0	27.3
Level of Service	F	C	B	C	C		C	C	C	E	F	C
Approach Delay (s)		37.6			21.3			30.8			68.7	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	329	4	28	92	25	7	31	10	91	12	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frt		1.00			0.98			0.97			0.95	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		3533			1802			1797			1726	
Flt Permitted		1.00			0.90			0.96			0.81	
Satd. Flow (perm)		3533			1640			1730			1430	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	358	4	30	100	27	8	34	11	99	13	59
RTOR Reduction (vph)	0	1	0	0	12	0	0	7	0	0	29	0
Lane Group Flow (vph)	0	361	0	0	145	0	0	46	0	0	142	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		19.3			19.3			14.0			14.0	
Effective Green, g (s)		19.3			19.3			14.0			14.0	
Actuated g/C Ratio		0.46			0.46			0.33			0.33	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)		1612			748			573			473	
v/s Ratio Prot		c0.10										
v/s Ratio Perm					0.09			0.03			c0.10	
v/c Ratio		0.22			0.19			0.08			0.30	
Uniform Delay, d1		7.0			6.9			9.7			10.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			0.0			0.0			0.1	
Delay (s)		7.0			6.9			9.7			10.6	
Level of Service		A			A			A			B	
Approach Delay (s)		7.0			6.9			9.7			10.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	275	9	23	199	141	55	82	24	31	5	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.98			0.92	
Flt Protected	0.95	1.00			1.00			0.98			0.98	
Satd. Flow (prot)	1770	3522			1760			1795			1681	
Flt Permitted	0.53	1.00			0.97			0.87			0.87	
Satd. Flow (perm)	989	3522			1710			1595			1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	299	10	25	216	153	60	89	26	34	5	61
RTOR Reduction (vph)	0	4	0	0	36	0	0	9	0	0	41	0
Lane Group Flow (vph)	35	305	0	0	358	0	0	166	0	0	59	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	19.3	19.3			19.3			14.0			14.0	
Effective Green, g (s)	19.3	19.3			19.3			14.0			14.0	
Actuated g/C Ratio	0.46	0.46			0.46			0.33			0.33	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	0.2	0.2			0.2			0.2			0.2	
Lane Grp Cap (vph)	451	1607			780			528			493	
v/s Ratio Prot		0.09										
v/s Ratio Perm	0.04				c0.21			c0.10			0.04	
v/c Ratio	0.08	0.19			0.46			0.31			0.12	
Uniform Delay, d1	6.5	6.8			7.9			10.6			9.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.0			0.2			0.1			0.0	
Delay (s)	6.5	6.9			8.1			10.7			9.9	
Level of Service	A	A			A			B			A	
Approach Delay (s)		6.8			8.1			10.7			9.9	
Approach LOS		A			A			B			A	

Intersection Summary

HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	60	23	11	44	27	43	12	430	34	102	478	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1690		1770	3500		1770	3482	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.43	1.00		0.47	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1690		805	3500		870	3482	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	25	12	48	29	47	13	467	37	111	520	63
RTOR Reduction (vph)	0	0	11	0	43	0	0	9	0	0	14	0
Lane Group Flow (vph)	65	25	1	48	33	0	13	495	0	111	569	0
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	3.1	4.9	4.9	2.0	3.8		20.7	20.7		20.7	20.7	
Effective Green, g (s)	3.1	4.9	4.9	2.0	3.8		20.7	20.7		20.7	20.7	
Actuated g/C Ratio	0.08	0.12	0.12	0.05	0.10		0.52	0.52		0.52	0.52	
Clearance Time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	137	228	194	89	161		417	1811		450	1802	
v/s Ratio Prot	c0.04	0.01		0.03	c0.02			0.14			c0.16	
v/s Ratio Perm			0.00				0.02			0.13		
v/c Ratio	0.47	0.11	0.01	0.54	0.21		0.03	0.27		0.25	0.32	
Uniform Delay, d1	17.7	15.6	15.4	18.6	16.7		4.7	5.4		5.3	5.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.1	0.0	3.1	0.2		0.1	0.2		0.8	0.3	
Delay (s)	18.6	15.7	15.4	21.7	16.9		4.8	5.7		6.1	5.9	
Level of Service	B	B	B	C	B		A	A		A	A	
Approach Delay (s)		17.5			18.8			5.6			5.9	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	154	108	27	107	98	84	15	476	55	114	450	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1734		1770	3484		1770	3428	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.39	1.00		0.42	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1734		735	3484		781	3428	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	117	29	116	107	91	16	517	60	124	489	129
RTOR Reduction (vph)	0	0	25	0	57	0	0	14	0	0	37	0
Lane Group Flow (vph)	167	117	4	116	141	0	16	563	0	124	581	0
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	5.5	7.0	7.0	5.2	6.7		22.3	22.3		22.3	22.3	
Effective Green, g (s)	5.5	7.0	7.0	5.2	6.7		22.3	22.3		22.3	22.3	
Actuated g/C Ratio	0.12	0.15	0.15	0.11	0.14		0.48	0.48		0.48	0.48	
Clearance Time (s)	4.0	4.2	4.2	4.0	4.2		4.2	4.2		4.2	4.2	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	208	278	236	196	248		349	1657		371	1630	
v/s Ratio Prot	c0.09	0.06		0.07	c0.08			0.16			c0.17	
v/s Ratio Perm			0.00				0.02			0.16		
v/c Ratio	0.80	0.42	0.02	0.59	0.57		0.05	0.34		0.33	0.36	
Uniform Delay, d1	20.2	18.1	17.0	19.8	18.8		6.6	7.7		7.7	7.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.6	0.4	0.0	3.2	2.0		0.2	0.3		1.5	0.4	
Delay (s)	38.8	18.5	17.0	23.0	20.7		6.7	8.0		9.2	8.1	
Level of Service	D	B	B	C	C		A	A		A	A	
Approach Delay (s)		29.2			21.6			8.0			8.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	12.4
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	540	129	318	0	0	0	0	457	70	41	316	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00	1.00					0.95		1.00	0.95	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583					3469		1770	3539	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583					3469		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	587	140	346	0	0	0	0	497	76	45	343	0
RTOR Reduction (vph)	0	0	191	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	587	140	155	0	0	0	0	555	0	45	343	0
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	28.6	28.6	28.6					16.7		3.3	25.2	
Effective Green, g (s)	28.6	28.6	28.6					16.7		3.3	25.2	
Actuated g/C Ratio	0.45	0.45	0.45					0.26		0.05	0.40	
Clearance Time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Vehicle Extension (s)	6.2	6.2	6.2					0.2		2.0	0.2	
Lane Grp Cap (vph)	795	836	711					909		92	1400	
v/s Ratio Prot	c0.33	0.08						c0.16		c0.03	0.10	
v/s Ratio Perm			0.10									
v/c Ratio	0.74	0.17	0.22					0.61		0.49	0.24	
Uniform Delay, d1	14.5	10.5	10.7					20.6		29.4	12.9	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	5.1	0.3	0.5					0.9		1.5	0.0	
Delay (s)	19.5	10.7	11.2					21.5		30.9	12.9	
Level of Service	B	B	B					C		C	B	
Approach Delay (s)		15.7			0.0			21.5			15.0	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	15.1
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	155	197	219	0	0	0	0	602	110	227	461	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00	1.00					0.95		1.00	0.95	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583					3457		1770	3539	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583					3457		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	214	238	0	0	0	0	654	120	247	501	0
RTOR Reduction (vph)	0	0	161	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	168	214	77	0	0	0	0	754	0	247	501	0
Turn Type	Split		Perm							Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	19.0	19.0	19.0					18.1		6.2	29.5	
Effective Green, g (s)	19.0	19.0	19.0					18.1		6.2	29.5	
Actuated g/C Ratio	0.33	0.33	0.33					0.31		0.11	0.51	
Clearance Time (s)	4.7	4.7	4.7					5.2		5.2	5.2	
Vehicle Extension (s)	6.2	6.2	6.2					0.2		2.0	0.2	
Lane Grp Cap (vph)	576	606	515					1071		188	1788	
v/s Ratio Prot	0.09	c0.11						c0.22		c0.14	0.14	
v/s Ratio Perm			0.05									
v/c Ratio	0.29	0.35	0.15					0.70		1.31	0.28	
Uniform Delay, d1	14.7	15.0	14.0					17.8		26.1	8.3	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.1	0.4					1.7		173.8	0.0	
Delay (s)	15.5	16.1	14.4					19.5		199.9	8.4	
Level of Service	B	B	B					B		F	A	
Approach Delay (s)		15.3			0.0			19.5			71.6	
Approach LOS		B			A			B			E	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	15.1
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	100	171	441	195	799	0	0	280	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3475	1583	1770	3539			3539	1583
Flt Permitted					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					3475	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	109	186	479	212	868	0	0	304	145
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	0	0	0	110
Lane Group Flow (vph)	0	0	0	0	295	422	212	868	0	0	304	35
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)					25.7	25.7	10.9	30.8			16.2	16.2
Effective Green, g (s)					25.7	25.7	10.9	30.8			16.2	16.2
Actuated g/C Ratio					0.38	0.38	0.16	0.46			0.24	0.24
Clearance Time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Vehicle Extension (s)					5.0	5.0	2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					1331	606	288	1624			854	382
v/s Ratio Prot					0.08		c0.12	c0.25			0.09	
v/s Ratio Perm						c0.27						0.02
v/c Ratio					0.22	0.70	0.74	0.53			0.36	0.09
Uniform Delay, d1					14.0	17.4	26.7	13.0			21.1	19.7
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					0.2	4.4	8.2	0.2			0.1	0.0
Delay (s)					14.1	21.8	34.9	13.2			21.2	19.8
Level of Service					B	C	C	B			C	B
Approach Delay (s)		0.0			18.9			17.4			20.8	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	14.3
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	104	118	184	335	391	0	0	597	577
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3458	1583	1770	3539			3539	1583
Flt Permitted					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)					3458	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	113	128	200	364	425	0	0	649	627
RTOR Reduction (vph)	0	0	0	0	0	155	0	0	0	0	0	389
Lane Group Flow (vph)	0	0	0	0	241	45	364	425	0	0	649	238
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)					12.3	12.3	11.5	32.3			17.1	17.1
Effective Green, g (s)					12.3	12.3	11.5	32.3			17.1	17.1
Actuated g/C Ratio					0.22	0.22	0.21	0.59			0.31	0.31
Clearance Time (s)					5.4	5.4	3.7	5.2			5.2	5.2
Vehicle Extension (s)					5.0	5.0	2.0	0.2			0.2	0.2
Lane Grp Cap (vph)					771	353	369	2071			1096	490
v/s Ratio Prot					c0.07		c0.21	0.12			c0.18	
v/s Ratio Perm						0.03						0.15
v/c Ratio					0.31	0.13	0.99	0.21			0.59	0.49
Uniform Delay, d1					17.9	17.2	21.8	5.4			16.1	15.5
Progression Factor					1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2					0.5	0.3	42.7	0.0			0.6	0.3
Delay (s)					18.4	17.5	64.5	5.4			16.7	15.8
Level of Service					B	B	E	A			B	B
Approach Delay (s)		0.0			18.0			32.7			16.2	
Approach LOS		A			B			C			B	

Intersection Summary

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	14.3
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	36	106	49	21	104	32	0	952	26	0	284	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Lane Util. Factor	1.00	0.95	1.00		0.95			0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.97			1.00			1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99			1.00			1.00	1.00
Satd. Flow (prot)	1770	3539	1583		3408			3525			3539	1583
Flt Permitted	0.70	1.00	1.00		0.90			1.00			1.00	1.00
Satd. Flow (perm)	1307	3539	1583		3078			3525			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	115	53	23	113	35	0	1035	28	0	309	26
RTOR Reduction (vph)	0	0	46	0	31	0	0	2	0	0	0	8
Lane Group Flow (vph)	39	115	7	0	140	0	0	1061	0	0	309	18
Turn Type	Perm		Perm	Perm								Perm
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4								2
Actuated Green, G (s)	5.7	5.7	5.7		5.7			31.2			31.2	31.2
Effective Green, g (s)	5.7	5.7	5.7		5.7			31.2			31.2	31.2
Actuated g/C Ratio	0.12	0.12	0.12		0.12			0.68			0.68	0.68
Clearance Time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Vehicle Extension (s)	2.0	2.0	2.0		2.0			5.0			5.0	5.0
Lane Grp Cap (vph)	163	442	198		385			2412			2421	1083
v/s Ratio Prot		0.03						c0.30			0.09	
v/s Ratio Perm	0.03		0.00		c0.05							0.01
v/c Ratio	0.24	0.26	0.03		0.36			0.44			0.13	0.02
Uniform Delay, d1	18.0	18.0	17.5		18.3			3.3			2.5	2.3
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0		0.2			0.3			0.1	0.0
Delay (s)	18.3	18.2	17.6		18.5			3.5			2.5	2.3
Level of Service	B	B	B		B			A			A	A
Approach Delay (s)		18.0			18.5			3.5			2.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	8.7
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	78	57	65	162	33	0	402	20	0	809	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Lane Util. Factor	1.00	0.95	1.00		0.95			0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.98			0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99			1.00			1.00	1.00
Satd. Flow (prot)	1770	3539	1583		3429			3514			3539	1583
Flt Permitted	0.58	1.00	1.00		0.86			1.00			1.00	1.00
Satd. Flow (perm)	1077	3539	1583		2975			3514			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	85	62	71	176	36	0	437	22	0	879	51
RTOR Reduction (vph)	0	0	50	0	23	0	0	4	0	0	0	19
Lane Group Flow (vph)	25	85	12	0	260	0	0	455	0	0	879	32
Turn Type	Perm		Perm	Perm								Perm
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4								2
Actuated Green, G (s)	9.3	9.3	9.3		9.3			30.3			30.3	30.3
Effective Green, g (s)	9.3	9.3	9.3		9.3			30.3			30.3	30.3
Actuated g/C Ratio	0.19	0.19	0.19		0.19			0.63			0.63	0.63
Clearance Time (s)	4.5	4.5	4.5		4.5			4.2			4.2	4.2
Vehicle Extension (s)	2.0	2.0	2.0		2.0			5.0			5.0	5.0
Lane Grp Cap (vph)	207	681	305		573			2204			2220	993
v/s Ratio Prot		0.02						0.13			c0.25	
v/s Ratio Perm	0.02		0.01		c0.09							0.02
v/c Ratio	0.12	0.12	0.04		0.45			0.21			0.40	0.03
Uniform Delay, d1	16.1	16.1	15.9		17.3			3.9			4.5	3.4
Progression Factor	1.00	1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0		0.2			0.1			0.2	0.0
Delay (s)	16.2	16.2	15.9		17.5			4.0			4.7	3.5
Level of Service	B	B	B		B			A			A	A
Approach Delay (s)		16.1			17.5			4.0			4.6	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	8.7
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL2	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	61	25	21	13	1	3	34	79	427	89	98	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Lane Util. Factor	1.00	1.00			1.00	1.00			0.95		1.00	1.00
Frt	1.00	0.93			1.00	0.86			0.98		1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00			0.99		0.95	1.00
Satd. Flow (prot)	1770	1734			1947	1604			3437		1770	1863
Flt Permitted	1.00	1.00			1.00	1.00			0.88		0.50	1.00
Satd. Flow (perm)	1863	1734			2049	1604			3031		931	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	27	23	14	1	3	37	86	464	97	107	224
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	26	0	0	0
Lane Group Flow (vph)	66	50	0	0	15	7	0	0	621	0	107	224
Turn Type	Perm			Perm	Perm			Perm			Perm	
Protected Phases		4				4			2			2
Permitted Phases	4			4	4			2			2	
Actuated Green, G (s)	2.3	2.3			2.3	2.3			8.0		8.0	8.0
Effective Green, g (s)	2.3	2.3			2.3	2.3			8.0		8.0	8.0
Actuated g/C Ratio	0.12	0.12			0.12	0.12			0.40		0.40	0.40
Clearance Time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Vehicle Extension (s)	0.2	0.2			0.2	0.2			0.2		0.2	0.2
Lane Grp Cap (vph)	215	200			237	185			1218		374	749
v/s Ratio Prot		0.03				0.00						0.12
v/s Ratio Perm	c0.04				0.01				c0.21		0.11	
v/c Ratio	0.31	0.25			0.06	0.04			0.51		0.29	0.30
Uniform Delay, d1	8.1	8.0			7.8	7.8			4.5		4.0	4.0
Progression Factor	1.00	1.00			1.00	1.00			1.00		1.00	1.00
Incremental Delay, d2	0.3	0.2			0.0	0.0			0.2		0.2	0.1
Delay (s)	8.4	8.3			7.9	7.9			4.6		4.2	4.1
Level of Service	A	A			A	A			A		A	A
Approach Delay (s)		8.3				7.9			4.6			4.1
Approach LOS		A				A			A			A

Intersection Summary

HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	19.9	Sum of lost time (s)	9.6
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SWR	SWR2
Lane Configurations		
Volume (vph)	5	51
Ideal Flow (vphpl)	1900	1900
Lane Width	15	12
Total Lost time (s)	4.8	
Lane Util. Factor	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	1742	
Flt Permitted	1.00	
Satd. Flow (perm)	1742	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	5	55
RTOR Reduction (vph)	33	0
Lane Group Flow (vph)	27	0
Turn Type	Perm	
Protected Phases		
Permitted Phases	2	
Actuated Green, G (s)	8.0	
Effective Green, g (s)	8.0	
Actuated g/C Ratio	0.40	
Clearance Time (s)	4.8	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	700	
v/s Ratio Prot		
v/s Ratio Perm	0.02	
v/c Ratio	0.04	
Uniform Delay, d1	3.6	
Progression Factor	1.00	
Incremental Delay, d2	0.0	
Delay (s)	3.6	
Level of Service	A	
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	SEL	SET	SER	NWL2	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	75	9	69	97	3	15	173	12	365	22	74	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12	12	12	12	12	12	12
Total Lost time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Lane Util. Factor	1.00	1.00			1.00	1.00			0.95		1.00	1.00
Frt	1.00	0.87			1.00	0.86			0.99		1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00			1.00		0.95	1.00
Satd. Flow (prot)	1770	1616			1947	1605			3505		1770	1863
Flt Permitted	0.98	1.00			0.98	1.00			0.93		0.50	1.00
Satd. Flow (perm)	1817	1616			1999	1605			3282		931	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	10	75	105	3	16	188	13	397	24	80	611
RTOR Reduction (vph)	0	0	0	0	0	162	0	0	6	0	0	0
Lane Group Flow (vph)	82	85	0	0	108	42	0	0	428	0	80	611
Turn Type	Perm			Perm	Perm			Perm			Perm	
Protected Phases		4				4			2			2
Permitted Phases	4			4	4			2			2	
Actuated Green, G (s)	4.1	4.1			4.1	4.1			16.0		16.0	16.0
Effective Green, g (s)	4.1	4.1			4.1	4.1			16.0		16.0	16.0
Actuated g/C Ratio	0.14	0.14			0.14	0.14			0.54		0.54	0.54
Clearance Time (s)	4.8	4.8			4.8	4.8			4.8		4.8	4.8
Vehicle Extension (s)	0.2	0.2			0.2	0.2			0.2		0.2	0.2
Lane Grp Cap (vph)	251	223			276	222			1768		502	1004
v/s Ratio Prot		0.05				0.03						c0.33
v/s Ratio Perm	0.05				c0.05				0.13		0.09	
v/c Ratio	0.33	0.38			0.39	0.19			0.24		0.16	0.61
Uniform Delay, d1	11.6	11.6			11.7	11.3			3.6		3.5	4.7
Progression Factor	1.00	1.00			1.00	1.00			1.00		1.00	1.00
Incremental Delay, d2	0.3	0.4			0.3	0.2			0.0		0.1	0.7
Delay (s)	11.8	12.0			12.0	11.5			3.7		3.5	5.4
Level of Service	B	B			B	B			A		A	A
Approach Delay (s)		11.9				11.7			3.7			5.0
Approach LOS		B				B			A			A

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	29.7	Sum of lost time (s)	9.6
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SWR	SWR2
Lane Configurations		
Volume (vph)	4	55
Ideal Flow (vphpl)	1900	1900
Lane Width	15	12
Total Lost time (s)	4.8	
Lane Util. Factor	1.00	
Frt	0.85	
Flt Protected	1.00	
Satd. Flow (prot)	1742	
Flt Permitted	1.00	
Satd. Flow (perm)	1742	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	4	60
RTOR Reduction (vph)	28	0
Lane Group Flow (vph)	36	0
Turn Type	Perm	
Protected Phases		
Permitted Phases	2	
Actuated Green, G (s)	16.0	
Effective Green, g (s)	16.0	
Actuated g/C Ratio	0.54	
Clearance Time (s)	4.8	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	938	
v/s Ratio Prot		
v/s Ratio Perm	0.02	
v/c Ratio	0.04	
Uniform Delay, d1	3.2	
Progression Factor	1.00	
Incremental Delay, d2	0.0	
Delay (s)	3.2	
Level of Service	A	
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	75	166	104	108	278	200	135	445	101	69	233	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.94		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1755		1770	3317		1770	3441		1770	3427	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1755		1770	3317		1770	3441		1770	3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	180	113	117	302	217	147	484	110	75	253	68
RTOR Reduction (vph)	0	23	0	0	136	0	0	19	0	0	26	0
Lane Group Flow (vph)	82	270	0	117	383	0	147	575	0	75	295	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	7.0	18.1		8.5	19.6		11.8	24.1		7.0	19.3	
Effective Green, g (s)	7.0	18.1		8.5	19.6		11.8	24.1		7.0	19.3	
Actuated g/C Ratio	0.09	0.24		0.11	0.26		0.16	0.32		0.09	0.26	
Clearance Time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	167	428		202	875		281	1116		167	890	
v/s Ratio Prot	0.05	c0.15		c0.07	0.12		c0.08	c0.17		0.04	0.09	
v/s Ratio Perm												
v/c Ratio	0.49	0.63		0.58	0.44		0.52	0.52		0.45	0.33	
Uniform Delay, d1	32.0	25.1		31.2	22.8		28.7	20.4		31.8	22.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	4.2		4.0	0.7		1.8	0.8		1.9	0.5	
Delay (s)	34.2	29.3		35.2	23.5		30.4	21.2		33.7	22.7	
Level of Service	C	C		D	C		C	C		C	C	
Approach Delay (s)		30.4			25.6			23.0			24.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	12.4
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	68	192	122	138	393	98	162	329	70	67	347	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Lane Util. Factor	1.00	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	0.97		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1754		1770	3433		1770	3446		1770	3469	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1754		1770	3433		1770	3446		1770	3469	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	209	133	150	427	107	176	358	76	73	377	57
RTOR Reduction (vph)	0	23	0	0	22	0	0	18	0	0	13	0
Lane Group Flow (vph)	74	319	0	150	512	0	176	416	0	73	421	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	7.2	20.7		11.9	25.4		12.7	24.6		7.3	19.2	
Effective Green, g (s)	7.2	20.7		11.9	25.4		12.7	24.6		7.3	19.2	
Actuated g/C Ratio	0.09	0.26		0.15	0.31		0.16	0.30		0.09	0.24	
Clearance Time (s)	4.1	4.2		4.1	4.2		4.1	4.2		4.1	4.2	
Vehicle Extension (s)	3.0	5.0		3.0	5.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	157	448		260	1075		277	1045		159	821	
v/s Ratio Prot	0.04	c0.18		c0.08	0.15		c0.10	0.12		0.04	c0.12	
v/s Ratio Perm												
v/c Ratio	0.47	0.71		0.58	0.48		0.64	0.40		0.46	0.51	
Uniform Delay, d1	35.1	27.5		32.3	22.5		32.0	22.4		35.0	26.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	6.5		3.1	0.7		4.7	0.5		2.1	1.1	
Delay (s)	37.4	34.0		35.3	23.2		36.7	22.9		37.1	28.0	
Level of Service	D	C		D	C		D	C		D	C	
Approach Delay (s)		34.6			25.8			26.9			29.3	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	16.6
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	43	270	46	0	0	0	0	407	199	124	436	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.95		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5050	1583					3365		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.37	1.00	
Satd. Flow (perm)		5050	1583					3365		686	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	293	50	0	0	0	0	442	216	135	474	0
RTOR Reduction (vph)	0	0	33	0	0	0	0	101	0	0	0	0
Lane Group Flow (vph)	0	340	17	0	0	0	0	557	0	135	474	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			2	
Permitted Phases			4							2		
Actuated Green, G (s)		20.0	20.0					31.0		31.0	31.0	
Effective Green, g (s)		20.0	20.0					31.0		31.0	31.0	
Actuated g/C Ratio		0.34	0.34					0.52		0.52	0.52	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1700	533					1756		358	1847	
v/s Ratio Prot		c0.07						0.17			0.13	
v/s Ratio Perm			0.01							c0.20		
v/c Ratio		0.20	0.03					0.32		0.38	0.26	
Uniform Delay, d1		14.0	13.2					8.1		8.5	7.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.0		0.2	0.0	
Delay (s)		14.0	13.2					8.2		8.7	7.9	
Level of Service		B	B					A		A	A	
Approach Delay (s)		13.9			0.0			8.2			8.1	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↰↑↑↑	↱					↑↑↱		↰	↑↑	
Volume (vph)	51	213	40	0	0	0	0	464	137	54	446	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2					4.2		4.2	4.2	
Lane Util. Factor		0.91	1.00					0.95		1.00	0.95	
Frt		1.00	0.85					0.97		1.00	1.00	
Flt Protected		0.99	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5037	1583					3418		1770	3539	
Flt Permitted		0.99	1.00					1.00		0.37	1.00	
Satd. Flow (perm)		5037	1583					3418		691	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	232	43	0	0	0	0	504	149	59	485	0
RTOR Reduction (vph)	0	0	29	0	0	0	0	46	0	0	0	0
Lane Group Flow (vph)	0	287	14	0	0	0	0	607	0	59	485	0
Turn Type	Split		Perm							Perm		
Protected Phases	4	4						2			2	
Permitted Phases			4							2		
Actuated Green, G (s)		20.0	20.0					31.0		31.0	31.0	
Effective Green, g (s)		20.0	20.0					31.0		31.0	31.0	
Actuated g/C Ratio		0.34	0.34					0.52		0.52	0.52	
Clearance Time (s)		4.2	4.2					4.2		4.2	4.2	
Vehicle Extension (s)		0.2	0.2					0.2		0.2	0.2	
Lane Grp Cap (vph)		1696	533					1784		361	1847	
v/s Ratio Prot		c0.06						c0.18			0.14	
v/s Ratio Perm			0.01							0.09		
v/c Ratio		0.17	0.03					0.34		0.16	0.26	
Uniform Delay, d1		13.9	13.2					8.3		7.4	7.9	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0					0.0		0.1	0.0	
Delay (s)		13.9	13.2					8.3		7.5	7.9	
Level of Service		B	B					A		A	A	
Approach Delay (s)		13.8			0.0			8.3			7.9	
Approach LOS		B			A			A			A	

Intersection Summary

HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	50	149	36	40	313	0	0	609	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	15	12	12	15	15	12	12
Total Lost time (s)					4.2		4.2	4.2			4.2	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.98		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3764		1770	3539			3461	
Flt Permitted					0.99		0.30	1.00			1.00	
Satd. Flow (perm)					3764		552	3539			3461	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	54	162	39	43	340	0	0	662	114
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	231	0	43	340	0	0	749	0
Turn Type				Split			Perm					
Protected Phases				2	2			4			4	
Permitted Phases							4					
Actuated Green, G (s)					19.8		23.8	23.8			23.8	
Effective Green, g (s)					19.8		23.8	23.8			23.8	
Actuated g/C Ratio					0.38		0.46	0.46			0.46	
Clearance Time (s)					4.2		4.2	4.2			4.2	
Vehicle Extension (s)					0.2		0.2	0.2			0.2	
Lane Grp Cap (vph)					1433		253	1620			1584	
v/s Ratio Prot					c0.06			0.10			c0.22	
v/s Ratio Perm							0.08					
v/c Ratio					0.16		0.17	0.21			0.47	
Uniform Delay, d1					10.6		8.3	8.5			9.8	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.0		0.1	0.0			0.1	
Delay (s)					10.6		8.4	8.5			9.8	
Level of Service					B		A	A			A	
Approach Delay (s)		0.0			10.6			8.5			9.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	48	334	103	58	584	0	0	389	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	15	12	12	15	15	12	12
Total Lost time (s)					4.2		4.2	4.2			4.2	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.97	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					3751		1770	3539			3448	
Flt Permitted					1.00		0.45	1.00			1.00	
Satd. Flow (perm)					3751		836	3539			3448	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	363	112	63	635	0	0	423	88
RTOR Reduction (vph)	0	0	0	0	47	0	0	0	0	0	34	0
Lane Group Flow (vph)	0	0	0	0	480	0	63	635	0	0	477	0
Turn Type				Split			Perm					
Protected Phases				2	2			4			4	
Permitted Phases							4					
Actuated Green, G (s)					19.8		23.8	23.8			23.8	
Effective Green, g (s)					19.8		23.8	23.8			23.8	
Actuated g/C Ratio					0.38		0.46	0.46			0.46	
Clearance Time (s)					4.2		4.2	4.2			4.2	
Vehicle Extension (s)					0.2		0.2	0.2			0.2	
Lane Grp Cap (vph)					1428		383	1620			1578	
v/s Ratio Prot					c0.13			c0.18			0.14	
v/s Ratio Perm							0.08					
v/c Ratio					0.34		0.16	0.39			0.30	
Uniform Delay, d1					11.4		8.3	9.3			8.9	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.1		0.1	0.1			0.0	
Delay (s)					11.5		8.3	9.4			8.9	
Level of Service					B		A	A			A	
Approach Delay (s)		0.0			11.5			9.3			8.9	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	114	200	27	91	197	58	26	206	35	74	489	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1799		1770	3539	1583	1770	3539	1583
Flt Permitted	0.55	1.00	1.00	0.62	1.00		0.42	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	1016	1863	1583	1146	1799		789	3539	1583	1140	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	217	29	99	214	63	28	224	38	80	532	176
RTOR Reduction (vph)	0	0	17	0	14	0	0	0	22	0	0	100
Lane Group Flow (vph)	124	217	12	99	263	0	28	224	16	80	532	76
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2	2	2	2			4		4	4		4
Actuated Green, G (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0	26.0	26.0	26.0	26.0
Effective Green, g (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42		0.43	0.43	0.43	0.43	0.43	0.43
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	423	776	660	478	750		342	1534	686	494	1534	686
v/s Ratio Prot		0.12			c0.15			0.06			c0.15	
v/s Ratio Perm	0.12		0.01	0.09			0.04		0.01	0.07		0.05
v/c Ratio	0.29	0.28	0.02	0.21	0.35		0.08	0.15	0.02	0.16	0.35	0.11
Uniform Delay, d1	11.6	11.6	10.3	11.2	12.0		10.0	10.3	9.7	10.4	11.3	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.1	0.1		0.0	0.0	0.0	0.1	0.0	0.0
Delay (s)	11.8	11.6	10.3	11.3	12.1		10.0	10.3	9.7	10.4	11.4	10.1
Level of Service	B	B	B	B	B		B	B	A	B	B	B
Approach Delay (s)		11.6			11.8			10.2			11.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	164	250	43	85	235	103	47	587	89	61	325	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1777		1770	3539	1583	1770	3539	1583
Flt Permitted	0.45	1.00	1.00	0.55	1.00		0.54	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	833	1863	1583	1027	1777		1007	3539	1583	664	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	272	47	92	255	112	51	638	97	66	353	123
RTOR Reduction (vph)	0	0	27	0	21	0	0	0	55	0	0	70
Lane Group Flow (vph)	178	272	20	92	346	0	51	638	42	66	353	53
Turn Type	Perm		Perm	Perm			Perm		Perm	Perm		Perm
Protected Phases		2			2			4			4	
Permitted Phases	2	2	2	2			4		4	4		4
Actuated Green, G (s)	25.3	25.3	25.3	25.3	25.3		26.0	26.0	26.0	26.0	26.0	26.0
Effective Green, g (s)	25.3	25.3	25.3	25.3	25.3		26.0	26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42		0.43	0.43	0.43	0.43	0.43	0.43
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)	350	782	664	431	746		434	1526	683	286	1526	683
v/s Ratio Prot		0.15			0.19			c0.18			0.10	
v/s Ratio Perm	c0.21		0.01	0.09			0.05		0.03	0.10		0.03
v/c Ratio	0.51	0.35	0.03	0.21	0.46		0.12	0.42	0.06	0.23	0.23	0.08
Uniform Delay, d1	12.9	11.9	10.3	11.2	12.6		10.3	11.9	10.0	10.8	10.8	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	0.1	0.2		0.0	0.1	0.0	0.2	0.0	0.0
Delay (s)	13.3	12.0	10.3	11.2	12.8		10.3	12.0	10.0	11.0	10.9	10.1
Level of Service	B	B	B	B	B		B	B	B	B	B	B
Approach Delay (s)		12.3			12.5			11.6			10.7	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (vph)	9	75	7	497	116	401	256	290	19	34	157	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	1838		1681	1715	1583	1770	2787	1583	1770	3433	1583
Flt Permitted	0.39	1.00		0.70	0.76	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	730	1838		1236	1336	1583	1770	2787	1583	1770	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	82	8	540	126	436	278	315	21	37	171	234
RTOR Reduction (vph)	0	5	0	0	0	296	0	0	12	0	0	184
Lane Group Flow (vph)	10	85	0	324	342	140	278	315	9	37	171	50
Turn Type	Perm			Perm		Perm		custom	custom	Prot		Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4		4			2			6
Actuated Green, G (s)	18.6	18.6		18.6	18.6	18.6	13.8	25.1	25.1	1.1	12.4	12.4
Effective Green, g (s)	18.6	18.6		18.6	18.6	18.6	13.8	25.1	25.1	1.1	12.4	12.4
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32	0.24	0.43	0.43	0.02	0.21	0.21
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Vehicle Extension (s)	3.0	3.0		3.5	3.5	3.5	3.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	234	589		396	428	508	421	1206	685	34	734	338
v/s Ratio Prot		0.05					c0.16	c0.11		0.02	0.05	
v/s Ratio Perm	0.01			c0.26	0.26	0.09			0.01			0.03
v/c Ratio	0.04	0.14		0.82	0.80	0.28	0.66	0.26	0.01	1.09	0.23	0.15
Uniform Delay, d1	13.6	14.0		18.1	18.0	14.7	20.0	10.5	9.4	28.4	18.9	18.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1		12.7	10.3	0.3	3.9	0.2	0.0	182.1	0.3	0.4
Delay (s)	13.6	14.1		30.8	28.3	15.0	23.8	10.7	9.4	210.5	19.2	18.9
Level of Service	B	B		C	C	B	C	B	A	F	B	B
Approach Delay (s)		14.1			23.8		16.6				35.1	
Approach LOS		B			C		B				D	

Intersection Summary

HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (vph)	4	128	11	289	25	214	353	254	9	9	337	532
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.88	1.00	1.00	0.97	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.85	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	1841		1681	1698	1583	1770	2787	1583	1770	3433	1583
Flt Permitted	0.59	1.00		0.66	0.66	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1102	1841		1170	1165	1583	1770	2787	1583	1770	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	139	12	314	27	233	384	276	10	10	366	578
RTOR Reduction (vph)	0	5	0	0	0	181	0	0	4	0	0	266
Lane Group Flow (vph)	4	146	0	166	175	52	384	276	6	10	366	312
Turn Type	Perm			Perm		Perm		custom	custom	Prot		Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4		4			2			6
Actuated Green, G (s)	14.3	14.3		14.3	14.3	14.3	17.1	36.5	36.5	0.4	19.8	19.8
Effective Green, g (s)	14.3	14.3		14.3	14.3	14.3	17.1	36.5	36.5	0.4	19.8	19.8
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.22	0.27	0.57	0.57	0.01	0.31	0.31
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Vehicle Extension (s)	3.0	3.0		3.5	3.5	3.5	3.0	4.8	4.8	2.0	4.8	4.8
Lane Grp Cap (vph)	245	409		260	259	352	470	1580	897	11	1055	487
v/s Ratio Prot		0.08					c0.22	0.10		0.01	0.11	
v/s Ratio Perm	0.00			0.14	c0.15	0.03			0.00			c0.20
v/c Ratio	0.02	0.36		0.64	0.68	0.15	0.82	0.17	0.01	0.91	0.35	0.64
Uniform Delay, d1	19.6	21.2		22.7	22.9	20.1	22.2	6.7	6.1	32.0	17.3	19.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.5		5.3	7.1	0.2	10.6	0.1	0.0	214.7	0.4	3.8
Delay (s)	19.6	21.7		28.0	30.0	20.4	32.7	6.8	6.1	246.7	17.7	23.0
Level of Service	B	C		C	C	C	C	A	A	F	B	C
Approach Delay (s)		21.7			25.5		21.7				23.3	
Approach LOS		C			C		C				C	

Intersection Summary

HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	13.2
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations											
Volume (vph)	8	4	70	0	0	91	302	32	0	88	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	12	12	15	15	12	12
Total Lost time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Lane Util. Factor		1.00	1.00			1.00	1.00			1.00	1.00
Frt		1.00	0.85			1.00	0.99			1.00	0.85
Flt Protected		0.95	1.00			0.95	1.00			1.00	1.00
Satd. Flow (prot)		1947	1583			1770	1836			1863	1583
Flt Permitted		0.69	1.00			0.69	1.00			1.00	1.00
Satd. Flow (perm)		1420	1583			1294	1836			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	4	76	0	0	99	328	35	0	96	17
RTOR Reduction (vph)	0	0	58	0	0	0	4	0	0	0	7
Lane Group Flow (vph)	0	13	18	0	0	99	359	0	0	96	10
Turn Type	custom		custom			Perm					Perm
Protected Phases			4				2			6	
Permitted Phases	4	4				2					6
Actuated Green, G (s)		13.6	13.6			33.6	33.6			33.6	33.6
Effective Green, g (s)		13.6	13.6			33.6	33.6			33.6	33.6
Actuated g/C Ratio		0.24	0.24			0.60	0.60			0.60	0.60
Clearance Time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Vehicle Extension (s)		0.2	0.2			0.2	0.2			0.2	0.2
Lane Grp Cap (vph)		344	383			774	1098			1114	946
v/s Ratio Prot			c0.01				c0.20			0.05	
v/s Ratio Perm		0.01				0.08					0.01
v/c Ratio		0.04	0.05			0.13	0.33			0.09	0.01
Uniform Delay, d1		16.3	16.3			4.9	5.6			4.8	4.6
Progression Factor		1.00	1.00			1.00	1.00			1.00	1.00
Incremental Delay, d2		0.0	0.0			0.0	0.1			0.0	0.0
Delay (s)		16.3	16.4			4.9	5.7			4.8	4.6
Level of Service		B	B			A	A			A	A
Approach Delay (s)		16.3		0.0			5.5			4.8	
Approach LOS		B		A			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBR	NBL	NBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations											
Volume (vph)	10	1	85	0	0	36	94	106	0	320	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	15	12	15	15	12	12	15	15	12	12
Total Lost time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Lane Util. Factor		1.00	1.00			1.00	1.00			1.00	1.00
Frt		1.00	0.85			1.00	0.92			1.00	0.85
Flt Protected		0.95	1.00			0.95	1.00			1.00	1.00
Satd. Flow (prot)		1947	1583			1770	1715			1863	1583
Flt Permitted		0.73	1.00			0.54	1.00			1.00	1.00
Satd. Flow (perm)		1499	1583			1001	1715			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1	92	0	0	39	102	115	0	348	26
RTOR Reduction (vph)	0	0	70	0	0	0	46	0	0	0	10
Lane Group Flow (vph)	0	12	22	0	0	39	171	0	0	348	16
Turn Type	custom		custom			Perm					Perm
Protected Phases			4				2			6	
Permitted Phases	4	4				2					6
Actuated Green, G (s)		13.6	13.6			33.6	33.6			33.6	33.6
Effective Green, g (s)		13.6	13.6			33.6	33.6			33.6	33.6
Actuated g/C Ratio		0.24	0.24			0.60	0.60			0.60	0.60
Clearance Time (s)		4.5	4.5			4.5	4.5			4.5	4.5
Vehicle Extension (s)		0.2	0.2			0.2	0.2			0.2	0.2
Lane Grp Cap (vph)		363	383			598	1025			1114	946
v/s Ratio Prot			c0.01				0.10			c0.19	
v/s Ratio Perm		0.01				0.04					0.01
v/c Ratio		0.03	0.06			0.07	0.17			0.31	0.02
Uniform Delay, d1		16.3	16.4			4.7	5.0			5.6	4.6
Progression Factor		1.00	1.00			1.00	1.00			1.00	1.00
Incremental Delay, d2		0.0	0.0			0.0	0.0			0.1	0.0
Delay (s)		16.3	16.4			4.7	5.1			5.6	4.6
Level of Service		B	B			A	A			A	A
Approach Delay (s)		16.4		0.0			5.0			5.6	
Approach LOS		B		A			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	34	109	0	0	126	62	197	645	37	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.95			0.95			0.91				
Frt		1.00			0.95			0.99				
Flt Protected		0.99			1.00			0.99				
Satd. Flow (prot)		3497			3365			4997				
Flt Permitted		0.85			1.00			0.99				
Satd. Flow (perm)		3020			3365			4997				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	118	0	0	137	67	214	701	40	0	0	0
RTOR Reduction (vph)	0	0	0	0	49	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	155	0	0	155	0	0	947	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		8			4		2	2				
Permitted Phases	8											
Actuated Green, G (s)		13.8			13.8			26.4				
Effective Green, g (s)		13.8			13.8			26.4				
Actuated g/C Ratio		0.27			0.27			0.53				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		830			925			2628				
v/s Ratio Prot					0.05			c0.19				
v/s Ratio Perm		c0.05										
v/c Ratio		0.19			0.17			0.36				
Uniform Delay, d1		13.9			13.8			7.0				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.0			0.0				
Delay (s)		14.0			13.9			7.0				
Level of Service		B			B			A				
Approach Delay (s)		14.0			13.9			7.0			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	171	0	0	125	24	108	331	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		0.95			0.95			0.91				
Frt		1.00			0.98			0.99				
Flt Protected		0.99			1.00			0.99				
Satd. Flow (prot)		3509			3454			4990				
Flt Permitted		0.89			1.00			0.99				
Satd. Flow (perm)		3149			3454			4990				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	186	0	0	136	26	117	360	24	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	224	0	0	145	0	0	491	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		8			4		2	2				
Permitted Phases	8											
Actuated Green, G (s)		19.0			19.0			25.0				
Effective Green, g (s)		19.0			19.0			25.0				
Actuated g/C Ratio		0.35			0.35			0.46				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		1108			1215			2310				
v/s Ratio Prot					0.04			c0.10				
v/s Ratio Perm		c0.07										
v/c Ratio		0.20			0.12			0.21				
Uniform Delay, d1		12.2			11.8			8.6				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.0			0.0			0.0				
Delay (s)		12.2			11.9			8.7				
Level of Service		B			B			A				
Approach Delay (s)		12.2			11.9			8.7			0.0	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	118	106	0	0	14	9	57	540	56	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Lane Util. Factor	0.95	0.95			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	0.99			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1681	1761			1863	1583		5061	1583			
Flt Permitted	0.95	0.99			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1681	1761			1863	1583		5061	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	115	0	0	15	10	62	587	61	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	0	31	0	0	0
Lane Group Flow (vph)	115	128	0	0	15	0	0	649	30	0	0	0
Turn Type	Split					Perm	Split		Perm			
Protected Phases	2	2			1		8	8				
Permitted Phases						1			8			
Actuated Green, G (s)	7.4	7.4			1.0	1.0		20.3	20.3			
Effective Green, g (s)	7.4	7.4			1.0	1.0		20.3	20.3			
Actuated g/C Ratio	0.18	0.18			0.02	0.02		0.49	0.49			
Clearance Time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Vehicle Extension (s)	3.8	3.8			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	298	313			45	38		2464	771			
v/s Ratio Prot	0.07	c0.07			c0.01			c0.13				
v/s Ratio Perm						0.00			0.02			
v/c Ratio	0.39	0.41			0.33	0.01		0.26	0.04			
Uniform Delay, d1	15.1	15.2			20.0	19.9		6.3	5.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.1	1.1			1.6	0.0		0.0	0.0			
Delay (s)	16.2	16.3			21.6	19.9		6.3	5.6			
Level of Service	B	B			C	B		A	A			
Approach Delay (s)		16.3			20.9			6.3			0.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	69	32	0	0	68	40	32	259	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Lane Util. Factor	0.95	0.95			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	0.98			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1681	1737			1863	1583		5057	1583			
Flt Permitted	0.95	0.98			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	1681	1737			1863	1583		5057	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	35	0	0	74	43	35	282	35	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	20	0	0	0
Lane Group Flow (vph)	54	56	0	0	74	4	0	317	15	0	0	0
Turn Type	Split					Perm	Split		Perm			
Protected Phases	2	2			1		8	8				
Permitted Phases						1			8			
Actuated Green, G (s)	4.0	4.0			3.5	3.5		14.6	14.6			
Effective Green, g (s)	4.0	4.0			3.5	3.5		14.6	14.6			
Actuated g/C Ratio	0.11	0.11			0.10	0.10		0.42	0.42			
Clearance Time (s)	4.6	4.6			4.2	4.2		4.2	4.2			
Vehicle Extension (s)	3.8	3.8			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	192	198			186	158		2103	658			
v/s Ratio Prot	0.03	c0.03			c0.04			c0.06				
v/s Ratio Perm						0.00			0.01			
v/c Ratio	0.28	0.28			0.40	0.03		0.15	0.02			
Uniform Delay, d1	14.2	14.2			14.8	14.3		6.4	6.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.0	1.0			0.5	0.0		0.0	0.0			
Delay (s)	15.3	15.3			15.3	14.3		6.4	6.0			
Level of Service	B	B			B	B		A	A			
Approach Delay (s)		15.3			14.9			6.4			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	35.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	20	254	0	0	301	48	46	466	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2			4.2				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frt	1.00	1.00			0.98			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1828			4932				
Flt Permitted	0.46	1.00			1.00			1.00				
Satd. Flow (perm)	855	1863			1828			4932				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	276	0	0	327	52	50	507	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	47	0	0	0	0
Lane Group Flow (vph)	22	276	0	0	370	0	0	630	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		2			6		8	8				
Permitted Phases	2											
Actuated Green, G (s)	27.0	27.0			27.0			22.0				
Effective Green, g (s)	27.0	27.0			27.0			22.0				
Actuated g/C Ratio	0.47	0.47			0.47			0.38				
Clearance Time (s)	4.2	4.2			4.2			4.2				
Vehicle Extension (s)	0.2	0.2			0.2			0.2				
Lane Grp Cap (vph)	402	876			860			1890				
v/s Ratio Prot		0.15			c0.20			c0.13				
v/s Ratio Perm	0.03											
v/c Ratio	0.05	0.32			0.43			0.33				
Uniform Delay, d1	8.3	9.5			10.1			12.5				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	0.0	0.1			0.1			0.0				
Delay (s)	8.3	9.5			10.2			12.6				
Level of Service	A	A			B			B				
Approach Delay (s)		9.4			10.2			12.6			0.0	
Approach LOS		A			B			B			A	

Intersection Summary

HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	10	114	0	0	567	47	48	288	85	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2			4.2				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frt	1.00	1.00			0.99			0.97				
Flt Protected	0.95	1.00			1.00			0.99				
Satd. Flow (prot)	1770	1863			1844			4904				
Flt Permitted	0.21	1.00			1.00			0.99				
Satd. Flow (perm)	395	1863			1844			4904				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	124	0	0	616	51	52	313	92	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	58	0	0	0	0
Lane Group Flow (vph)	11	124	0	0	662	0	0	399	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		2			6		8	8				
Permitted Phases	2											
Actuated Green, G (s)	28.3	28.3			28.3			22.0				
Effective Green, g (s)	28.3	28.3			28.3			22.0				
Actuated g/C Ratio	0.48	0.48			0.48			0.37				
Clearance Time (s)	4.2	4.2			4.2			4.2				
Vehicle Extension (s)	0.2	0.2			0.2			0.2				
Lane Grp Cap (vph)	190	898			889			1838				
v/s Ratio Prot		0.07			c0.36			c0.08				
v/s Ratio Perm	0.03											
v/c Ratio	0.06	0.14			0.75			0.22				
Uniform Delay, d1	8.1	8.4			12.3			12.5				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	0.0	0.0			3.0			0.0				
Delay (s)	8.1	8.5			15.3			12.5				
Level of Service	A	A			B			B				
Approach Delay (s)		8.4			15.3			12.5			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	8.4
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	46	269	101	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2			
Lane Util. Factor		1.00	0.91			
Frt		0.86	0.96			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1611	4877			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1611	4877			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	50	292	110	0	0
RTOR Reduction (vph)	0	42	57	0	0	0
Lane Group Flow (vph)	0	8	345	0	0	0
Turn Type		custom				
Protected Phases			8			
Permitted Phases		2				
Actuated Green, G (s)		3.9	11.6			
Effective Green, g (s)		3.9	11.6			
Actuated g/C Ratio		0.16	0.49			
Clearance Time (s)		4.2	4.2			
Vehicle Extension (s)		0.2	6.0			
Lane Grp Cap (vph)		263	2367			
v/s Ratio Prot			c0.07			
v/s Ratio Perm		c0.01				
v/c Ratio		0.03	0.15			
Uniform Delay, d1		8.4	3.4			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.0	0.1			
Delay (s)		8.4	3.5			
Level of Service		A	A			
Approach Delay (s)	8.4		3.5			0.0
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	23.9	Sum of lost time (s)	8.4
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	122	424	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)		4.2	4.2			
Lane Util. Factor		1.00	0.91			
Frt		0.86	0.98			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1611	4999			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1611	4999			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	133	461	59	0	0
RTOR Reduction (vph)	0	116	25	0	0	0
Lane Group Flow (vph)	0	17	495	0	0	0
Turn Type		custom				
Protected Phases			8			
Permitted Phases		2				
Actuated Green, G (s)		3.2	13.2			
Effective Green, g (s)		3.2	13.2			
Actuated g/C Ratio		0.13	0.53			
Clearance Time (s)		4.2	4.2			
Vehicle Extension (s)		0.2	6.0			
Lane Grp Cap (vph)		208	2661			
v/s Ratio Prot			c0.10			
v/s Ratio Perm		c0.01				
v/c Ratio		0.08	0.19			
Uniform Delay, d1		9.5	3.0			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.1	0.1			
Delay (s)		9.6	3.1			
Level of Service		A	A			
Approach Delay (s)	9.6		3.1		0.0	
Approach LOS	A		A		A	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	24.8	Sum of lost time (s)	8.4
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	128	136	20	287	0	0	0	0	27	247	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4			5.4						5.4	5.4
Lane Util. Factor		0.95			0.95						0.91	1.00
Frt		0.92			1.00						1.00	0.85
Flt Protected		1.00			1.00						1.00	1.00
Satd. Flow (prot)		3265			3528						5061	1583
Flt Permitted		1.00			0.91						1.00	1.00
Satd. Flow (perm)		3265			3217						5061	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	139	148	22	312	0	0	0	0	29	268	93
RTOR Reduction (vph)	0	108	0	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	179	0	0	334	0	0	0	0	0	297	16
Turn Type				Perm						Split		Perm
Protected Phases		2			2					8	8	
Permitted Phases				2								8
Actuated Green, G (s)		5.2			5.2						3.2	3.2
Effective Green, g (s)		5.2			5.2						3.2	3.2
Actuated g/C Ratio		0.27			0.27						0.17	0.17
Clearance Time (s)		5.4			5.4						5.4	5.4
Vehicle Extension (s)		0.2			0.2						0.2	0.2
Lane Grp Cap (vph)		884			871						844	264
v/s Ratio Prot		0.05									c0.06	
v/s Ratio Perm					c0.10							0.01
v/c Ratio		0.20			0.38						0.35	0.06
Uniform Delay, d1		5.4			5.7						7.1	6.7
Progression Factor		1.00			1.00						1.00	1.00
Incremental Delay, d2		0.0			0.1						0.1	0.0
Delay (s)		5.4			5.8						7.2	6.8
Level of Service		A			A						A	A
Approach Delay (s)		5.4			5.8			0.0			7.1	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	19.2	Sum of lost time (s)	10.8
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	154	369	46	174	0	0	0	0	43	791	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4			5.4						5.4	5.4
Lane Util. Factor		0.95			0.95						0.91	1.00
Frt		0.89			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		3164			3503						5072	1583
Flt Permitted		1.00			0.76						1.00	1.00
Satd. Flow (perm)		3164			2694						5072	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	167	401	50	189	0	0	0	0	47	860	100
RTOR Reduction (vph)	0	98	0	0	0	0	0	0	0	0	0	68
Lane Group Flow (vph)	0	470	0	0	239	0	0	0	0	0	907	32
Turn Type				Perm						Split		Perm
Protected Phases		2			2					8	8	
Permitted Phases				2								8
Actuated Green, G (s)		6.7			6.7						8.4	8.4
Effective Green, g (s)		6.7			6.7						8.4	8.4
Actuated g/C Ratio		0.26			0.26						0.32	0.32
Clearance Time (s)		5.4			5.4						5.4	5.4
Vehicle Extension (s)		0.2			0.2						0.2	0.2
Lane Grp Cap (vph)		818			697						1645	513
v/s Ratio Prot		c0.15									c0.18	
v/s Ratio Perm					0.09							0.02
v/c Ratio		0.57			0.34						0.55	0.06
Uniform Delay, d1		8.4			7.8						7.2	6.0
Progression Factor		1.00			1.00						1.00	1.00
Incremental Delay, d2		0.6			0.1						0.2	0.0
Delay (s)		9.0			7.9						7.4	6.1
Level of Service		A			A						A	A
Approach Delay (s)		9.0			7.9			0.0			7.3	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	25.9	Sum of lost time (s)	10.8
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	122	48	5	40	0	0	0	0	126	258	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	1.00					1.00	0.95	1.00
Frt		0.96		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3390		1770	1863					1770	3539	1583
Flt Permitted		1.00		0.64	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3390		1183	1863					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	133	52	5	43	0	0	0	0	137	280	3
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	150	0	5	43	0	0	0	0	137	280	2
Turn Type				Perm						Split		Perm
Protected Phases		2			2					4	4	
Permitted Phases				2								4
Actuated Green, G (s)		19.0		19.0	19.0					31.0	31.0	31.0
Effective Green, g (s)		19.0		19.0	19.0					31.0	31.0	31.0
Actuated g/C Ratio		0.33		0.33	0.33					0.53	0.53	0.53
Clearance Time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Vehicle Extension (s)		0.2		0.2	0.2					0.2	0.2	0.2
Lane Grp Cap (vph)		1103		385	606					940	1879	840
v/s Ratio Prot		c0.04			0.02					0.08	c0.08	
v/s Ratio Perm				0.00								0.00
v/c Ratio		0.14		0.01	0.07					0.15	0.15	0.00
Uniform Delay, d1		13.9		13.3	13.6					7.0	7.0	6.4
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.0		0.0	0.0					0.0	0.0	0.0
Delay (s)		13.9		13.4	13.6					7.0	7.0	6.4
Level of Service		B		B	B					A	A	A
Approach Delay (s)		13.9			13.6			0.0			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	8.4
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	48	83	82	50	0	0	0	0	33	582	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Lane Util. Factor		0.95		1.00	1.00					1.00	0.95	1.00
Frt		0.90		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3203		1770	1863					1770	3539	1583
Flt Permitted		1.00		0.66	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3203		1233	1863					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	52	90	89	54	0	0	0	0	36	633	42
RTOR Reduction (vph)	0	67	0	0	0	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	75	0	89	54	0	0	0	0	36	633	25
Turn Type				Perm						Split		Perm
Protected Phases		2			2					4	4	
Permitted Phases				2								4
Actuated Green, G (s)		14.0		14.0	14.0					32.3	32.3	32.3
Effective Green, g (s)		14.0		14.0	14.0					32.3	32.3	32.3
Actuated g/C Ratio		0.26		0.26	0.26					0.59	0.59	0.59
Clearance Time (s)		4.2		4.2	4.2					4.2	4.2	4.2
Vehicle Extension (s)		0.2		0.2	0.2					0.2	0.2	0.2
Lane Grp Cap (vph)		820		316	477					1045	2090	935
v/s Ratio Prot		0.02			0.03					0.02	c0.18	
v/s Ratio Perm				c0.07								0.02
v/c Ratio		0.09		0.28	0.11					0.03	0.30	0.03
Uniform Delay, d1		15.5		16.3	15.6					4.7	5.6	4.7
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.0		0.2	0.0					0.0	0.0	0.0
Delay (s)		15.5		16.5	15.6					4.7	5.6	4.7
Level of Service		B		B	B					A	A	A
Approach Delay (s)		15.5			16.2			0.0			5.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	8.4
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	156	5	82	262	0	0	0	0	117	212	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2						4.2	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frt		1.00		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		1856		1770	1863						4980	
Flt Permitted		1.00		0.65	1.00						0.98	
Satd. Flow (perm)		1856		1205	1863						4980	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	170	5	89	285	0	0	0	0	127	230	9
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	173	0	89	285	0	0	0	0	0	362	0
Turn Type				Perm						Split		
Protected Phases		2			6					4	4	
Permitted Phases				6								
Actuated Green, G (s)		29.6		29.6	29.6						22.0	
Effective Green, g (s)		29.6		29.6	29.6						22.0	
Actuated g/C Ratio		0.49		0.49	0.49						0.37	
Clearance Time (s)		4.2		4.2	4.2						4.2	
Vehicle Extension (s)		0.2		0.2	0.2						0.2	
Lane Grp Cap (vph)		916		594	919						1826	
v/s Ratio Prot		0.09			c0.15						c0.07	
v/s Ratio Perm				0.07								
v/c Ratio		0.19		0.15	0.31						0.20	
Uniform Delay, d1		8.5		8.3	9.1						13.0	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.5		0.0	0.1						0.0	
Delay (s)		9.0		8.4	9.2						13.0	
Level of Service		A		A	A						B	
Approach Delay (s)		9.0			9.0			0.0			13.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	68	5	131	486	0	0	0	0	57	447	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		4.2	4.2						4.2	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1847		1770	1863						5000	
Flt Permitted		1.00		0.71	1.00						0.99	
Satd. Flow (perm)		1847		1314	1863						5000	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	74	5	142	528	0	0	0	0	62	486	46
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	76	0	142	528	0	0	0	0	0	578	0
Turn Type				Perm						Split		
Protected Phases		2			6					4	4	
Permitted Phases				6								
Actuated Green, G (s)		29.6		29.6	29.6						22.0	
Effective Green, g (s)		29.6		29.6	29.6						22.0	
Actuated g/C Ratio		0.49		0.49	0.49						0.37	
Clearance Time (s)		4.2		4.2	4.2						4.2	
Vehicle Extension (s)		0.2		0.2	0.2						0.2	
Lane Grp Cap (vph)		911		648	919						1833	
v/s Ratio Prot		0.04			c0.28						c0.12	
v/s Ratio Perm				0.11								
v/c Ratio		0.08		0.22	0.57						0.32	
Uniform Delay, d1		8.0		8.6	10.7						13.6	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.2		0.1	0.5						0.0	
Delay (s)		8.2		8.7	11.3						13.6	
Level of Service		A		A	B						B	
Approach Delay (s)		8.2			10.7			0.0			13.6	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.4
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	SBR2	SER	NWL	NWT	SWL	SWT
Lane Configurations								
Volume (vph)	183	663	2	10	25	51	106	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Lane Util. Factor	1.00	0.88		1.00		1.00	1.00	0.95
Frt	1.00	0.85		0.86		1.00	1.00	1.00
Flt Protected	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (prot)	1770	2787		1611		1833	1770	3539
Flt Permitted	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (perm)	1770	2787		1611		1833	1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	199	721	2	11	27	55	115	122
RTOR Reduction (vph)	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	199	723	0	0	0	82	115	122
Turn Type		Prot		custom	Split		Split	
Protected Phases	2	2		8	1	1	4	4
Permitted Phases								
Actuated Green, G (s)	18.3	18.3		0.9		6.6	7.6	7.6
Effective Green, g (s)	18.3	18.3		0.9		6.6	7.6	7.6
Actuated g/C Ratio	0.36	0.36		0.02		0.13	0.15	0.15
Clearance Time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Vehicle Extension (s)	4.0	4.0		2.0		2.0	4.0	4.0
Lane Grp Cap (vph)	634	998		28		237	263	526
v/s Ratio Prot	0.11	c0.26		c0.00		c0.04	c0.06	0.03
v/s Ratio Perm								
v/c Ratio	0.31	0.72		0.01		0.35	0.44	0.23
Uniform Delay, d1	11.9	14.2		24.7		20.3	19.8	19.2
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	2.8		0.0		0.3	1.6	0.3
Delay (s)	12.2	17.0		24.7		20.6	21.4	19.5
Level of Service	B	B		C		C	C	B
Approach Delay (s)	16.0					20.6		20.4
Approach LOS	B					C		C

Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	17.7
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBR	SBR2	SER	NWL	NWT	SWL	SWT
Lane Configurations								
Volume (vph)	97	283	1	9	16	28	77	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Lane Util. Factor	1.00	0.88		1.00		1.00	1.00	0.95
Frt	1.00	0.85		0.86		1.00	1.00	1.00
Flt Protected	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (prot)	1770	2787		1611		1830	1770	3539
Flt Permitted	0.95	1.00		1.00		0.98	0.95	1.00
Satd. Flow (perm)	1770	2787		1611		1830	1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	308	1	10	17	30	84	140
RTOR Reduction (vph)	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	105	309	0	0	0	47	84	140
Turn Type		Prot		custom	Split		Split	
Protected Phases	2	2		8	1	1	4	4
Permitted Phases								
Actuated Green, G (s)	12.1	12.1		0.8		6.5	6.8	6.8
Effective Green, g (s)	12.1	12.1		0.8		6.5	6.8	6.8
Actuated g/C Ratio	0.28	0.28		0.02		0.15	0.15	0.15
Clearance Time (s)	4.9	4.9		4.2		4.0	4.6	4.6
Vehicle Extension (s)	4.0	4.0		2.0		2.0	4.0	4.0
Lane Grp Cap (vph)	488	768		29		271	274	548
v/s Ratio Prot	0.06	c0.11		c0.00		c0.03	c0.05	0.04
v/s Ratio Perm								
v/c Ratio	0.22	0.40		0.01		0.17	0.31	0.26
Uniform Delay, d1	12.2	13.0		21.2		16.4	16.5	16.3
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.5		0.0		0.1	0.9	0.3
Delay (s)	12.5	13.4		21.2		16.5	17.3	16.7
Level of Service	B	B		C		B	B	B
Approach Delay (s)	13.2					16.5		16.9
Approach LOS	B					B		B

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	17.7
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NWL2	NWL	NWR	NWR2
Lane Configurations										
Volume (vph)	118	327	19	79	103	55	120	39	254	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	0.76	
Frt	1.00	0.99		1.00	0.95			1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1770	3510		1770	3354			1770	3610	
Flt Permitted	0.64	1.00		0.53	1.00			0.95	1.00	
Satd. Flow (perm)	1198	3510		985	3354			1770	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	355	21	86	112	60	130	42	276	13
RTOR Reduction (vph)	0	7	0	0	36	0	0	0	7	0
Lane Group Flow (vph)	128	369	0	86	136	0	0	172	282	0
Turn Type	Perm			Perm			Split		Perm	
Protected Phases		4			4		2	2		
Permitted Phases	4			4					2	
Actuated Green, G (s)	23.0	23.0		23.0	23.0			23.0	23.0	
Effective Green, g (s)	23.0	23.0		23.0	23.0			23.0	23.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.41	0.41	
Clearance Time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	
Lane Grp Cap (vph)	489	1431		402	1368			722	1472	
v/s Ratio Prot		0.11			0.04			c0.10		
v/s Ratio Perm	c0.11			0.09					0.08	
v/c Ratio	0.26	0.26		0.21	0.10			0.24	0.19	
Uniform Delay, d1	11.1	11.1		10.8	10.3			11.0	10.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.1	0.0			0.1	0.0	
Delay (s)	11.2	11.1		10.9	10.3			11.0	10.8	
Level of Service	B	B		B	B			B	B	
Approach Delay (s)		11.1			10.5			10.8		
Approach LOS		B			B			B		

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	10.4
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR2	WBL	WBT	WBR	NWL2	NWL	NWR	NWR2
Lane Configurations										
Volume (vph)	241	272	8	74	174	120	114	128	771	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	0.76	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1770	3524		1770	3323			1770	3610	
Flt Permitted	0.56	1.00		0.57	1.00			0.95	1.00	
Satd. Flow (perm)	1040	3524		1054	3323			1770	3610	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	296	9	80	189	130	124	139	838	15
RTOR Reduction (vph)	0	4	0	0	43	0	0	54	2	0
Lane Group Flow (vph)	262	301	0	80	276	0	0	209	851	0
Turn Type	Perm			Perm			Split		Perm	
Protected Phases		4			4		2	2		
Permitted Phases	4			4					2	
Actuated Green, G (s)	23.4	23.4		23.4	23.4			23.0	23.0	
Effective Green, g (s)	23.4	23.4		23.4	23.4			23.0	23.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.40	0.40	
Clearance Time (s)	5.2	5.2		5.2	5.2			5.2	5.2	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			0.2	0.2	
Lane Grp Cap (vph)	428	1452		434	1369			717	1462	
v/s Ratio Prot		0.09			0.08			0.12		
v/s Ratio Perm	c0.25			0.08					c0.24	
v/c Ratio	0.61	0.21		0.18	0.20			0.29	0.58	
Uniform Delay, d1	13.1	10.7		10.6	10.7			11.4	13.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	
Incremental Delay, d2	1.8	0.0		0.1	0.0			0.1	0.4	
Delay (s)	15.0	10.8		10.7	10.7			11.5	13.5	
Level of Service	B	B		B	B			B	B	
Approach Delay (s)		12.7			10.7			13.1		
Approach LOS		B			B			B		

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	10.4
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↳			↑↑					↰	↑↑	↱
Volume (vph)	0	395	34	0	142	0	0	0	0	71	812	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5					4.9	4.9	4.9
Lane Util. Factor		0.95			0.95					1.00	0.95	1.00
Frt		0.99			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3497			3539					1770	3539	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3497			3539					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	429	37	0	154	0	0	0	0	77	883	132
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	72
Lane Group Flow (vph)	0	454	0	0	154	0	0	0	0	77	883	60
Turn Type										Split		Perm
Protected Phases		4			4					2	2	
Permitted Phases												2
Actuated Green, G (s)		25.5			25.5					20.1	20.1	20.1
Effective Green, g (s)		25.5			25.5					20.1	20.1	20.1
Actuated g/C Ratio		0.46			0.46					0.37	0.37	0.37
Clearance Time (s)		4.5			4.5					4.9	4.9	4.9
Vehicle Extension (s)		5.0			5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1621			1641					647	1293	579
v/s Ratio Prot		c0.13			0.04					0.04	c0.25	
v/s Ratio Perm												0.04
v/c Ratio		0.28			0.09					0.12	0.68	0.10
Uniform Delay, d1		9.1			8.3					11.6	14.8	11.5
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		0.2			0.1					0.2	1.9	0.2
Delay (s)		9.3			8.3					11.7	16.7	11.7
Level of Service		A			A					B	B	B
Approach Delay (s)		9.3			8.3			0.0			15.7	
Approach LOS		A			A			A			B	

Intersection Summary

HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	415	17	0	302	0	0	0	0	101	355	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5					4.9	4.9	4.9
Lane Util. Factor		0.95			0.95					1.00	0.95	1.00
Frt		0.99			1.00					1.00	1.00	0.85
Flt Protected		1.00			1.00					0.95	1.00	1.00
Satd. Flow (prot)		3519			3539					1770	3539	1583
Flt Permitted		1.00			1.00					0.95	1.00	1.00
Satd. Flow (perm)		3519			3539					1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	451	18	0	328	0	0	0	0	110	386	92
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	58
Lane Group Flow (vph)	0	464	0	0	328	0	0	0	0	110	386	34
Turn Type										Split		Perm
Protected Phases		4			4					2	2	
Permitted Phases												2
Actuated Green, G (s)		25.5			25.5					20.1	20.1	20.1
Effective Green, g (s)		25.5			25.5					20.1	20.1	20.1
Actuated g/C Ratio		0.46			0.46					0.37	0.37	0.37
Clearance Time (s)		4.5			4.5					4.9	4.9	4.9
Vehicle Extension (s)		5.0			5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1632			1641					647	1293	579
v/s Ratio Prot		c0.13			0.09					0.06	c0.11	
v/s Ratio Perm												0.02
v/c Ratio		0.28			0.20					0.17	0.30	0.06
Uniform Delay, d1		9.1			8.7					11.8	12.4	11.3
Progression Factor		1.00			1.00					1.00	1.00	1.00
Incremental Delay, d2		0.2			0.1					0.3	0.3	0.1
Delay (s)		9.3			8.8					12.1	12.7	11.4
Level of Service		A			A					B	B	B
Approach Delay (s)		9.3			8.8			0.0			12.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	5	483	66	3	5	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	525	72	3	5	3
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	75				609	73
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				609	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				99	100
cM capacity (veh/h)	1524				457	988

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	530	75	9
Volume Left	5	0	5
Volume Right	0	3	3
cSH	1524	1700	572
Volume to Capacity	0.00	0.04	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.1	0.0	11.4
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.4
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	3	135	388	4	2	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	147	422	4	2	2
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				577	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	426				577	424
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)	1133				477	630

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	150	426	4
Volume Left	3	0	2
Volume Right	0	4	2
cSH	1133	1700	543
Volume to Capacity	0.00	0.25	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.2	0.0	11.7
Lane LOS	A		B
Approach Delay (s)	0.2	0.0	11.7
Approach LOS			B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	322	140	8	184	16	2	12	15	14	63	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.92		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3534	1583		3492		1770	1709		1770	1812	
Flt Permitted		0.95	1.00		0.94		0.70	1.00		0.74	1.00	
Satd. Flow (perm)		3350	1583		3293		1310	1709		1375	1812	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	350	152	9	200	17	2	13	16	15	68	15
RTOR Reduction (vph)	0	0	58	0	7	0	0	13	0	0	12	0
Lane Group Flow (vph)	0	361	94	0	219	0	2	16	0	15	71	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		32.4	32.4		32.4		9.4	9.4		9.4	9.4	
Effective Green, g (s)		32.4	32.4		32.4		9.4	9.4		9.4	9.4	
Actuated g/C Ratio		0.62	0.62		0.62		0.18	0.18		0.18	0.18	
Clearance Time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		2063	975		2028		234	305		246	324	
v/s Ratio Prot								0.01			c0.04	
v/s Ratio Perm		c0.11	0.06		0.07		0.00			0.01		
v/c Ratio		0.17	0.10		0.11		0.01	0.05		0.06	0.22	
Uniform Delay, d1		4.3	4.1		4.2		17.8	17.9		17.9	18.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.0		0.0	0.0		0.0	0.1	
Delay (s)		4.4	4.1		4.2		17.8	17.9		18.0	18.6	
Level of Service		A	A		A		B	B		B	B	
Approach Delay (s)		4.3			4.2			17.9			18.5	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	10.8
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	253	36	5	371	33	20	22	24	16	22	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.92		1.00	0.94	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3529	1583		3494		1770	1717		1770	1747	
Flt Permitted		0.93	1.00		0.95		0.73	1.00		0.72	1.00	
Satd. Flow (perm)		3276	1583		3329		1360	1717		1349	1747	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	275	39	5	403	36	22	24	26	17	24	17
RTOR Reduction (vph)	0	0	15	0	8	0	0	21	0	0	14	0
Lane Group Flow (vph)	0	292	24	0	436	0	22	29	0	17	27	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		32.6	32.6		32.6		9.4	9.4		9.4	9.4	
Effective Green, g (s)		32.6	32.6		32.6		9.4	9.4		9.4	9.4	
Actuated g/C Ratio		0.62	0.62		0.62		0.18	0.18		0.18	0.18	
Clearance Time (s)		5.4	5.4		5.4		5.4	5.4		5.4	5.4	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		2023	977		2055		242	306		240	311	
v/s Ratio Prot								c0.02			0.02	
v/s Ratio Perm		0.09	0.02		c0.13		0.02			0.01		
v/c Ratio		0.14	0.02		0.21		0.09	0.09		0.07	0.09	
Uniform Delay, d1		4.2	3.9		4.4		18.1	18.1		18.1	18.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.0		0.1	0.0		0.0	0.0	
Delay (s)		4.3	3.9		4.5		18.2	18.2		18.1	18.2	
Level of Service		A	A		A		B	B		B	B	
Approach Delay (s)		4.2			4.5			18.2			18.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	10.8
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	5	458	63	3	34	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	498	68	3	37	8
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	72				579	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72				579	70
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				92	99
cM capacity (veh/h)	1528				476	993

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	503	72	45
Volume Left	5	0	37
Volume Right	0	3	8
cSH	1528	1700	522
Volume to Capacity	0.00	0.04	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.1	0.0	12.5
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	12.5
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	5	130	381	19	8	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	141	414	21	9	18
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	435				577	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	435				577	424
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				98	97
cM capacity (veh/h)	1125				476	630

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	147	435	27
Volume Left	5	0	9
Volume Right	0	21	18
cSH	1125	1700	571
Volume to Capacity	0.00	0.26	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.3	0.0	11.6
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	11.6
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	SEL	SET	SER	NWL	NWT	NWR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	9	38	32	43	117	14	4	61	147	283	57	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5		4.9	4.9		4.9	4.9	4.9	4.5	4.5	
Lane Util. Factor		0.97		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt		0.94		1.00	0.98		1.00	1.00	0.85	1.00	0.85	
Flt Protected		0.97		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3295		1770	3483		1770	1863	1583	1770	1583	
Flt Permitted		0.93		0.71	1.00		0.66	1.00	1.00	0.70	1.00	
Satd. Flow (perm)		3161		1330	3483		1233	1863	1583	1303	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	41	35	47	127	15	4	66	160	308	62	66
RTOR Reduction (vph)	0	18	0	0	10	0	0	0	118	0	34	0
Lane Group Flow (vph)	0	68	0	47	132	0	4	66	42	308	94	0
Turn Type	Perm			Perm			Perm		Perm		Over	
Protected Phases		4			2			2			4	
Permitted Phases	4			2			2		2	4		
Actuated Green, G (s)		17.7		9.7	9.7		9.7	9.7	9.7	17.7	17.7	
Effective Green, g (s)		17.7		9.7	9.7		9.7	9.7	9.7	17.7	17.7	
Actuated g/C Ratio		0.48		0.26	0.26		0.26	0.26	0.26	0.48	0.48	
Clearance Time (s)		4.5		4.9	4.9		4.9	4.9	4.9	4.5	4.5	
Vehicle Extension (s)		5.0		4.0	4.0		4.0	4.0	4.0	5.0	5.0	
Lane Grp Cap (vph)		1520		351	918		325	491	417	627	761	
v/s Ratio Prot					c0.04			0.04			0.06	
v/s Ratio Perm		0.02		0.04			0.00		0.03	c0.24		
v/c Ratio		0.04		0.13	0.14		0.01	0.13	0.10	0.49	0.12	
Uniform Delay, d1		5.1		10.3	10.4		10.0	10.3	10.3	6.5	5.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		0.2	0.1		0.0	0.2	0.1	1.3	0.2	
Delay (s)		5.1		10.6	10.5		10.0	10.5	10.4	7.8	5.4	
Level of Service		A		B	B		B	B	B	A	A	
Approach Delay (s)		5.1			10.5			10.4		7.1		
Approach LOS		A			B			B		A		

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	SEL	SET	SER	NWL	NWT	NWR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	5	62	16	44	62	10	17	73	357	229	49	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5		4.9	4.9		4.9	4.9	4.9	4.5	4.5	
Lane Util. Factor		0.97		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt		0.97		1.00	0.98		1.00	1.00	0.85	1.00	0.85	
Flt Protected		0.96		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3374		1770	3464		1770	1863	1583	1770	1583	
Flt Permitted		0.94		0.71	1.00		0.70	1.00	1.00	0.70	1.00	
Satd. Flow (perm)		3317		1314	3464		1311	1863	1583	1299	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	67	17	48	67	11	18	79	388	249	53	60
RTOR Reduction (vph)	0	9	0	0	8	0	0	0	273	0	33	0
Lane Group Flow (vph)	0	80	0	48	70	0	18	79	115	249	80	0
Turn Type	Perm			Perm			Perm		Perm		Over	
Protected Phases		4			2			2			4	
Permitted Phases	4			2			2		2	4		
Actuated Green, G (s)		17.1		11.2	11.2		11.2	11.2	11.2	17.1	17.1	
Effective Green, g (s)		17.1		11.2	11.2		11.2	11.2	11.2	17.1	17.1	
Actuated g/C Ratio		0.45		0.30	0.30		0.30	0.30	0.30	0.45	0.45	
Clearance Time (s)		4.5		4.9	4.9		4.9	4.9	4.9	4.5	4.5	
Vehicle Extension (s)		5.0		4.0	4.0		4.0	4.0	4.0	5.0	5.0	
Lane Grp Cap (vph)		1505		390	1029		389	553	470	589	718	
v/s Ratio Prot					0.02			0.04			0.05	
v/s Ratio Perm		0.02		0.04			0.01		c0.07	c0.19		
v/c Ratio		0.05		0.12	0.07		0.05	0.14	0.25	0.42	0.11	
Uniform Delay, d1		5.8		9.7	9.5		9.4	9.7	10.0	7.0	5.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		0.2	0.0		0.1	0.2	0.4	1.0	0.1	
Delay (s)		5.8		9.9	9.5		9.5	9.9	10.4	8.0	6.1	
Level of Service		A		A	A		A	A	B	A	A	
Approach Delay (s)		5.8			9.7			10.3		7.4		
Approach LOS		A			A			B		A		

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	37.7	Sum of lost time (s)	9.4
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	127	2	147	82	1	302
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	138	2	160	89	1	328
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			387			273
pX, platoon unblocked						
vC, conflicting volume	490	160			249	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	490	160			249	
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	100			100	
cM capacity (veh/h)	537	885			1317	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	140	160	89	329
Volume Left	138	0	0	1
Volume Right	2	0	89	0
cSH	540	1700	1700	1317
Volume to Capacity	0.26	0.09	0.05	0.00
Queue Length 95th (ft)	26	0	0	0
Control Delay (s)	14.0	0.0	0.0	0.0
Lane LOS	B			A
Approach Delay (s)	14.0	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	85	1	319	164	0	392
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	1	347	178	0	426
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			393			280
pX, platoon unblocked						
vC, conflicting volume	773	347			525	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	773	347			525	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	100			100	
cM capacity (veh/h)	367	696			1042	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	93	347	178	426
Volume Left	92	0	0	0
Volume Right	1	0	178	0
cSH	369	1700	1700	1042
Volume to Capacity	0.25	0.20	0.10	0.00
Queue Length 95th (ft)	25	0	0	0
Control Delay (s)	18.0	0.0	0.0	0.0
Lane LOS	C			
Approach Delay (s)	18.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL
Lane Configurations												
Volume (vph)	80	12	3	119	155	1	10	67	0	10	3	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6	4.6				4.6	4.6	4.2	4.6
Lane Util. Factor	1.00			0.95	0.95				0.95	1.00	1.00	0.97
Frt	0.98			0.97	0.85				1.00	0.85	0.86	0.93
Flt Protected	1.00			1.00	1.00				0.95	1.00	1.00	0.97
Satd. Flow (prot)	1830			1720	1504				3362	1583	1611	3273
Flt Permitted	1.00			1.00	1.00				0.95	1.00	1.00	0.96
Satd. Flow (perm)	1830			1720	1504				3362	1583	1611	3209
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	13	3	129	168	1	11	73	0	11	3	528
RTOR Reduction (vph)	6	0	0	0	1	0	0	0	0	10	3	0
Lane Group Flow (vph)	94	0	0	161	139	0	0	0	84	1	0	992
Turn Type			custom		custom		Perm	Perm		Perm	custom	
Protected Phases	6!		6!	6	2				4		8	5
Permitted Phases			6		6		4	4		4		2
Actuated Green, G (s)	20.7			20.7	27.9				6.5	6.5	6.9	25.8
Effective Green, g (s)	20.7			20.7	27.9				6.5	6.5	6.9	25.8
Actuated g/C Ratio	0.29			0.29	0.39				0.09	0.09	0.10	0.36
Clearance Time (s)	4.6			4.6	4.6				4.6	4.6	4.2	4.6
Vehicle Extension (s)	5.0			5.0	5.0				4.0	4.0	2.0	5.0
Lane Grp Cap (vph)	531			499	588				306	144	156	1176
v/s Ratio Prot	0.05			c0.09	0.02						0.00	c0.22
v/s Ratio Perm					0.07				0.02	0.00		c0.09
v/c Ratio	0.18			0.32	0.24				0.27	0.01	0.00	0.84
Uniform Delay, d1	19.0			19.9	14.6				30.3	29.5	29.1	19.6
Progression Factor	1.00			1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3			0.8	0.4				0.7	0.0	0.0	6.3
Delay (s)	19.3			20.6	15.0				30.9	29.5	29.1	25.8
Level of Service	B			C	B				C	C	C	C
Approach Delay (s)	19.3			18.0					30.8			25.8
Approach LOS	B			B					C			C

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	18.4
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SER	SER2
Lane Configurations		
Volume (vph)	426	1
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	463	1
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		
Intersection Summary		

Movement	EBT	EBR	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBR2	SEL2	SEL
Lane Configurations												
Volume (vph)	164	10	81	486	2	4	323	0	21	7	1	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6		4.6	4.6				4.6	4.6	4.2		4.6
Lane Util. Factor	1.00		0.95	0.95				0.95	1.00	1.00		0.97
Frt	0.99		0.89	0.85				1.00	0.85	0.86		0.95
Flt Protected	1.00		1.00	1.00				0.95	1.00	1.00		0.97
Satd. Flow (prot)	1848		1578	1504				3362	1583	1611		3328
Flt Permitted	1.00		1.00	1.00				0.95	1.00	1.00		0.96
Satd. Flow (perm)	1848		1578	1504				3362	1583	1611		3286
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	11	88	528	2	4	351	0	23	8	1	192
RTOR Reduction (vph)	3	0	0	0	0	0	0	0	20	7	0	0
Lane Group Flow (vph)	186	0	315	303	0	0	0	355	3	1	0	283
Turn Type				custom		Perm	Perm		Perm	custom	Perm	
Protected Phases	6		6	2				4		8		5
Permitted Phases				6		4	4		4		5	2
Actuated Green, G (s)	21.4		21.4	33.5				11.8	11.8	12.2		30.1
Effective Green, g (s)	21.4		21.4	33.5				11.8	11.8	12.2		30.1
Actuated g/C Ratio	0.26		0.26	0.41				0.14	0.14	0.15		0.37
Clearance Time (s)	4.6		4.6	4.6				4.6	4.6	4.2		4.6
Vehicle Extension (s)	5.0		5.0	5.0				4.0	4.0	2.0		5.0
Lane Grp Cap (vph)	484		413	617				486	229	241		1220
v/s Ratio Prot	0.10		c0.20	c0.07						0.00		c0.05
v/s Ratio Perm				0.13				0.11	0.00			0.03
v/c Ratio	0.38		0.76	0.49				1.39dl	0.01	0.00		0.23
Uniform Delay, d1	24.7		27.8	17.8				33.4	30.0	29.6		21.1
Progression Factor	1.00		1.00	1.00				1.00	1.00	1.00		1.00
Incremental Delay, d2	1.1		9.5	1.3				6.0	0.0	0.0		0.2
Delay (s)	25.8		37.3	19.1				39.4	30.0	29.6		21.3
Level of Service	C		D	B				D	C	C		C
Approach Delay (s)	25.8		28.4					38.8				21.3
Approach LOS	C		C					D				C

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	18.4
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Leff Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	SER	SER2
Lane Configurations		
Volume (vph)	82	1
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	89	1
RTOR Reduction (vph)	0	0
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Actuated Green, G (s)		
Effective Green, g (s)		
Actuated g/C Ratio		
Clearance Time (s)		
Vehicle Extension (s)		
Lane Grp Cap (vph)		
v/s Ratio Prot		
v/s Ratio Perm		
v/c Ratio		
Uniform Delay, d1		
Progression Factor		
Incremental Delay, d2		
Delay (s)		
Level of Service		
Approach Delay (s)		
Approach LOS		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	19	421	73	11	267	17	39	54	15	11	22	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.97		1.00	0.96	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3531	1583		3503		1770	1803		1770	1793	
Flt Permitted		0.94	1.00		0.94		0.74	1.00		0.71	1.00	
Satd. Flow (perm)		3315	1583		3290		1372	1803		1319	1793	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	458	79	12	290	18	42	59	16	12	24	8
RTOR Reduction (vph)	0	0	34	0	7	0	0	13	0	0	6	0
Lane Group Flow (vph)	0	479	45	0	313	0	42	62	0	12	26	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Actuated Green, G (s)		24.0	24.0		24.0		8.5	8.5		8.5	8.5	
Effective Green, g (s)		24.0	24.0		24.0		8.5	8.5		8.5	8.5	
Actuated g/C Ratio		0.58	0.58		0.58		0.20	0.20		0.20	0.20	
Clearance Time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1908	911		1894		280	368		269	365	
v/s Ratio Prot								c0.03			0.01	
v/s Ratio Perm		c0.14	0.03		0.10		0.03			0.01		
v/c Ratio		0.25	0.05		0.17		0.15	0.17		0.04	0.07	
Uniform Delay, d1		4.4	3.9		4.2		13.6	13.7		13.3	13.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.0		0.1	0.1		0.0	0.0	
Delay (s)		4.4	3.9		4.2		13.7	13.8		13.4	13.4	
Level of Service		A	A		A		B	B		B	B	
Approach Delay (s)		4.3			4.2			13.8			13.4	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	41.7	Sum of lost time (s)	9.2
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	24	246	32	5	439	59	28	20	21	89	93	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor		0.95	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.98		1.00	0.92		1.00	0.99	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3524	1583		3475		1770	1720		1770	1840	
Flt Permitted		0.90	1.00		0.95		0.69	1.00		0.73	1.00	
Satd. Flow (perm)		3176	1583		3312		1278	1720		1356	1840	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	267	35	5	477	64	30	22	23	97	101	9
RTOR Reduction (vph)	0	0	17	0	19	0	0	17	0	0	6	0
Lane Group Flow (vph)	0	293	18	0	527	0	30	28	0	97	104	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Actuated Green, G (s)		23.3	23.3		23.3		12.7	12.7		12.7	12.7	
Effective Green, g (s)		23.3	23.3		23.3		12.7	12.7		12.7	12.7	
Actuated g/C Ratio		0.52	0.52		0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)		4.6	4.6		4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		0.2	0.2		0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		1637	816		1707		359	483		381	517	
v/s Ratio Prot								0.02			0.06	
v/s Ratio Perm		0.09	0.01		c0.16		0.02			c0.07		
v/c Ratio		0.18	0.02		0.31		0.08	0.06		0.25	0.20	
Uniform Delay, d1		5.8	5.4		6.3		12.0	11.9		12.6	12.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0	0.0		0.0		0.0	0.0		0.1	0.1	
Delay (s)		5.9	5.4		6.3		12.0	11.9		12.7	12.5	
Level of Service		A	A		A		B	B		B	B	
Approach Delay (s)		5.8			6.3			11.9			12.6	
Approach LOS		A			A			B			B	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	9.2
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	516	20	9	147	0	10	0	17	255	552	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00		1.00	1.00	0.95	
Frt		0.99			1.00		1.00		0.85	1.00	0.97	
Flt Protected		1.00			1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3519			3529		1770		1583	1770	3420	
Flt Permitted		1.00			0.92		0.28		1.00	0.95	1.00	
Satd. Flow (perm)		3519			3268		519		1583	1770	3420	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	561	22	10	160	0	11	0	18	277	600	173
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	10	0	45	0
Lane Group Flow (vph)	0	578	0	0	170	0	11	0	8	277	728	0
Turn Type				Perm			D.Pm		custom	Perm		
Protected Phases		4			4				2		2	
Permitted Phases				4			2		2	2		
Actuated Green, G (s)		25.0			25.0		24.3		24.3	24.3	24.3	
Effective Green, g (s)		25.0			25.0		24.3		24.3	24.3	24.3	
Actuated g/C Ratio		0.43			0.43		0.42		0.42	0.42	0.42	
Clearance Time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Vehicle Extension (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lane Grp Cap (vph)		1509			1401		216		660	738	1425	
v/s Ratio Prot		c0.16							0.00		c0.21	
v/s Ratio Perm					0.05		0.02			0.16		
v/c Ratio		0.38			0.12		0.05		0.01	0.38	0.51	
Uniform Delay, d1		11.4			10.0		10.1		10.0	11.8	12.6	
Progression Factor		1.00			1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.1			0.0		0.0		0.0	0.1	0.1	
Delay (s)		11.4			10.0		10.2		10.0	11.9	12.7	
Level of Service		B			B		B		A	B	B	
Approach Delay (s)		11.4			10.0			10.0			12.5	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	259	24	8	394	0	13	0	33	119	242	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Lane Util. Factor		0.95			0.95		1.00		1.00	1.00	0.95	
Frt		0.99			1.00		1.00		0.85	1.00	0.96	
Flt Protected		1.00			1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3494			3536		1770		1583	1770	3403	
Flt Permitted		1.00			0.95		0.54		1.00	0.95	1.00	
Satd. Flow (perm)		3494			3355		1006		1583	1770	3403	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	282	26	9	428	0	14	0	36	129	263	91
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	21	0	53	0
Lane Group Flow (vph)	0	297	0	0	437	0	14	0	15	129	301	0
Turn Type				Perm			D.Pm		custom	Perm		
Protected Phases		4			4				2		2	
Permitted Phases				4			2		2	2		
Actuated Green, G (s)		25.0			25.0		24.0		24.0	24.0	24.0	
Effective Green, g (s)		25.0			25.0		24.0		24.0	24.0	24.0	
Actuated g/C Ratio		0.43			0.43		0.41		0.41	0.41	0.41	
Clearance Time (s)		4.5			4.5		4.5		4.5	4.5	4.5	
Vehicle Extension (s)		2.0			2.0		2.0		2.0	2.0	2.0	
Lane Grp Cap (vph)		1506			1446		416		655	732	1408	
v/s Ratio Prot		0.08							0.01		c0.09	
v/s Ratio Perm					c0.13		0.01			0.07		
v/c Ratio		0.20			0.30		0.03		0.02	0.18	0.21	
Uniform Delay, d1		10.3			10.8		10.1		10.1	10.7	10.9	
Progression Factor		1.00			1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.0			0.0		0.0		0.0	0.0	0.0	
Delay (s)		10.3			10.8		10.1		10.1	10.8	11.0	
Level of Service		B			B		B		B	B	B	
Approach Delay (s)		10.3			10.8			10.1			10.9	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Volume (vph)	44	509	173	7	127	47	34	137	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5			4.2				
Lane Util. Factor		0.95			0.95			0.95				
Frt		0.96			0.96			0.99				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3402			3395			3463				
Flt Permitted		0.93			0.93			0.99				
Satd. Flow (perm)		3164			3160			3463				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	553	188	8	138	51	37	149	17	0	0	0
RTOR Reduction (vph)	0	41	0	0	24	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	748	0	0	173	0	0	191	0	0	0	0
Turn Type	Perm			Perm			Split					
Protected Phases		8			4		6	6				
Permitted Phases	8			4								
Actuated Green, G (s)		27.2			27.2			16.0				
Effective Green, g (s)		27.2			27.2			16.0				
Actuated g/C Ratio		0.52			0.52			0.31				
Clearance Time (s)		4.5			4.5			4.2				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		1658			1656			1068				
v/s Ratio Prot								c0.06				
v/s Ratio Perm		c0.24			0.05							
v/c Ratio		0.45			0.10			0.18				
Uniform Delay, d1		7.7			6.2			13.1				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			0.0			0.0				
Delay (s)		7.8			6.2			13.2				
Level of Service		A			A			B				
Approach Delay (s)		7.8			6.2			13.2			0.0	
Approach LOS		A			A			B			A	

Intersection Summary

HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	8.7
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Volume (vph)	168	242	52	10	335	115	135	531	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.5			4.5			4.2				
Lane Util. Factor		0.95			0.95			0.95				
Frt		0.98			0.96			1.00				
Flt Protected		0.98			1.00			0.99				
Satd. Flow (prot)		3417			3403			3490				
Flt Permitted		0.66			0.94			0.99				
Satd. Flow (perm)		2301			3214			3490				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	263	57	11	364	125	147	577	21	0	0	0
RTOR Reduction (vph)	0	16	0	0	52	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	487	0	0	448	0	0	741	0	0	0	0
Turn Type	Perm			Perm			Split					
Protected Phases		8			4		6	6				
Permitted Phases	8			4								
Actuated Green, G (s)		25.5			25.5			22.0				
Effective Green, g (s)		25.5			25.5			22.0				
Actuated g/C Ratio		0.45			0.45			0.39				
Clearance Time (s)		4.5			4.5			4.2				
Vehicle Extension (s)		0.2			0.2			0.2				
Lane Grp Cap (vph)		1044			1458			1366				
v/s Ratio Prot								c0.21				
v/s Ratio Perm		c0.21			0.14							
v/c Ratio		0.47			0.31			0.54				
Uniform Delay, d1		10.6			9.7			13.2				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.1			0.0			0.2				
Delay (s)		10.8			9.8			13.5				
Level of Service		B			A			B				
Approach Delay (s)		10.8			9.8			13.5			0.0	
Approach LOS		B			A			B			A	

Intersection Summary

HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	8.7
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	144	0	3	1	0	0	1	914	265	26	194	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Lane Util. Factor	1.00	1.00			1.00			0.95	1.00		0.95	
Frt	1.00	0.85			1.00			1.00	0.85		1.00	
Flt Protected	0.95	1.00			0.95			1.00	1.00		0.99	
Satd. Flow (prot)	1770	1583			1770			3539	1583		3516	
Flt Permitted	0.76	1.00			0.76			0.95	1.00		0.84	
Satd. Flow (perm)	1410	1583			1408			3379	1583		2961	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	0	3	1	0	0	1	993	288	28	211	1
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	132	0	0	0
Lane Group Flow (vph)	157	1	0	0	1	0	0	994	156	0	240	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)	19.3	19.3			19.3			30.5	30.5		30.5	
Effective Green, g (s)	19.3	19.3			19.3			30.5	30.5		30.5	
Actuated g/C Ratio	0.33	0.33			0.33			0.52	0.52		0.52	
Clearance Time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0			5.0			4.0	4.0		4.0	
Lane Grp Cap (vph)	464	521			464			1759	824		1541	
v/s Ratio Prot		0.00										
v/s Ratio Perm	c0.11				0.00			c0.29	0.10		0.08	
v/c Ratio	0.34	0.00			0.00			0.57	0.19		0.16	
Uniform Delay, d1	14.8	13.2			13.2			9.5	7.5		7.3	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.9	0.0			0.0			0.5	0.2		0.1	
Delay (s)	15.7	13.2			13.2			10.1	7.6		7.4	
Level of Service	B	B			B			B	A		A	
Approach Delay (s)		15.7			13.2			9.5			7.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	8.8
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	261	0	2	0	1	0	1	295	191	17	671	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Lane Util. Factor	1.00	1.00			1.00			0.95	1.00		0.95	
Frt	1.00	0.85			1.00			1.00	0.85		1.00	
Flt Protected	0.95	1.00			1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1770	1583			1863			3539	1583		3534	
Flt Permitted	0.76	1.00			1.00			0.95	1.00		0.94	
Satd. Flow (perm)	1410	1583			1863			3375	1583		3340	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	0	2	0	1	0	1	321	208	18	729	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	121	0	0	0
Lane Group Flow (vph)	284	1	0	0	1	0	0	322	87	0	748	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)	28.2	28.2			28.2			26.6	26.6		26.6	
Effective Green, g (s)	28.2	28.2			28.2			26.6	26.6		26.6	
Actuated g/C Ratio	0.44	0.44			0.44			0.42	0.42		0.42	
Clearance Time (s)	4.6	4.6			4.6			4.2	4.2		4.2	
Vehicle Extension (s)	5.0	5.0			5.0			4.0	4.0		4.0	
Lane Grp Cap (vph)	625	702			826			1412	662		1397	
v/s Ratio Prot		0.00			0.00							
v/s Ratio Perm	c0.20							0.10	0.05		c0.22	
v/c Ratio	0.45	0.00			0.00			0.23	0.13		0.54	
Uniform Delay, d1	12.3	9.9			9.9			11.9	11.4		13.9	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.1	0.0			0.0			0.1	0.1		0.5	
Delay (s)	13.4	9.9			9.9			12.0	11.5		14.4	
Level of Service	B	A			A			B	B		B	
Approach Delay (s)		13.4			9.9			11.8			14.4	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	8.8
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	57	30	36	38	0	0	0	0	89	1046	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2						4.9	
Lane Util. Factor		1.00			1.00						0.91	
Frt		0.95			1.00						0.99	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1775			1818						5036	
Flt Permitted		1.00			0.80						1.00	
Satd. Flow (perm)		1775			1485						5036	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	62	33	39	41	0	0	0	0	97	1137	51
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	68	0	0	80	0	0	0	0	0	1278	0
Turn Type				Perm						Split		
Protected Phases		8			8					6	6	
Permitted Phases				8								
Actuated Green, G (s)		6.6			6.6						22.9	
Effective Green, g (s)		6.6			6.6						22.9	
Actuated g/C Ratio		0.17			0.17						0.59	
Clearance Time (s)		4.2			4.2						4.9	
Vehicle Extension (s)		4.0			4.0						5.0	
Lane Grp Cap (vph)		303			254						2988	
v/s Ratio Prot		0.04									c0.25	
v/s Ratio Perm					c0.05							
v/c Ratio		0.22			0.31						0.43	
Uniform Delay, d1		13.8			14.0						4.3	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.5			1.0						0.2	
Delay (s)		14.3			15.0						4.5	
Level of Service		B			B						A	
Approach Delay (s)		14.3			15.0			0.0			4.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	38.6	Sum of lost time (s)	9.1
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	70	42	43	65	0	0	0	0	52	604	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2						4.9	
Lane Util. Factor		1.00			1.00						0.91	
Frt		0.95			1.00						0.99	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1768			1826						5007	
Flt Permitted		1.00			0.82						1.00	
Satd. Flow (perm)		1768			1524						5007	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	76	46	47	71	0	0	0	0	57	657	61
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	85	0	0	118	0	0	0	0	0	759	0
Turn Type				Perm						Split		
Protected Phases		8			8					6	6	
Permitted Phases				8								
Actuated Green, G (s)		7.4			7.4						20.8	
Effective Green, g (s)		7.4			7.4						20.8	
Actuated g/C Ratio		0.20			0.20						0.56	
Clearance Time (s)		4.2			4.2						4.9	
Vehicle Extension (s)		4.0			4.0						5.0	
Lane Grp Cap (vph)		351			302						2792	
v/s Ratio Prot		0.05									c0.15	
v/s Ratio Perm					c0.08							
v/c Ratio		0.24			0.39						0.27	
Uniform Delay, d1		12.6			13.0						4.3	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.5			1.1						0.1	
Delay (s)		13.1			14.1						4.4	
Level of Service		B			B						A	
Approach Delay (s)		13.1			14.1			0.0			4.4	
Approach LOS		B			B			A			A	

Intersection Summary

HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	37.3	Sum of lost time (s)	9.1
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	98	0	0	55	54	19	438	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2			4.9				
Lane Util. Factor		1.00			1.00			0.91				
Frt		1.00			0.93			0.99				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1834			1738			5036				
Flt Permitted		0.85			1.00			1.00				
Satd. Flow (perm)		1591			1738			5036				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	107	0	0	60	59	21	476	27	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	156	0	0	74	0	0	513	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		4			8		2	2				
Permitted Phases	4											
Actuated Green, G (s)		7.1			7.1			13.0				
Effective Green, g (s)		7.1			7.1			13.0				
Actuated g/C Ratio		0.24			0.24			0.45				
Clearance Time (s)		4.2			4.2			4.9				
Vehicle Extension (s)		4.0			4.0			0.2				
Lane Grp Cap (vph)		387			423			2242				
v/s Ratio Prot					0.04			c0.10				
v/s Ratio Perm		c0.10										
v/c Ratio		0.40			0.18			0.23				
Uniform Delay, d1		9.3			8.7			5.0				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		0.9			0.3			0.0				
Delay (s)		10.2			9.0			5.0				
Level of Service		B			A			A				
Approach Delay (s)		10.2			9.0			5.0			0.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	29.2	Sum of lost time (s)	9.1
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	70	0	0	85	119	22	1108	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2			4.2			4.9				
Lane Util. Factor		1.00			1.00			0.91				
Frt		1.00			0.92			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1822			1716			5063				
Flt Permitted		0.76			1.00			1.00				
Satd. Flow (perm)		1417			1716			5063				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	76	0	0	92	129	24	1204	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	18	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	137	0	0	203	0	0	1252	0	0	0	0
Turn Type	Perm						Split					
Protected Phases		4			8		2	2				
Permitted Phases	4											
Actuated Green, G (s)		8.5			8.5			19.8				
Effective Green, g (s)		8.5			8.5			19.8				
Actuated g/C Ratio		0.23			0.23			0.53				
Clearance Time (s)		4.2			4.2			4.9				
Vehicle Extension (s)		4.0			4.0			0.2				
Lane Grp Cap (vph)		322			390			2680				
v/s Ratio Prot					c0.12			c0.25				
v/s Ratio Perm		0.10										
v/c Ratio		0.43			0.52			0.47				
Uniform Delay, d1		12.4			12.7			5.5				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		1.2			1.6			0.0				
Delay (s)		13.6			14.3			5.5				
Level of Service		B			B			A				
Approach Delay (s)		13.6			14.3			5.5			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	37.4	Sum of lost time (s)	9.1
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	213	155	0	0	0	0	0	0	375	913	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2									4.6	
Lane Util. Factor		0.95									0.95	
Frt		0.94									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3316									3488	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3316									3488	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	232	168	0	0	0	0	0	0	408	992	0
RTOR Reduction (vph)	0	46	0	0	0	0	0	0	0	0	58	0
Lane Group Flow (vph)	0	354	0	0	0	0	0	0	0	0	1342	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		15.8									30.5	
Effective Green, g (s)		15.8									30.5	
Actuated g/C Ratio		0.29									0.55	
Clearance Time (s)		4.2									4.6	
Vehicle Extension (s)		6.4									5.6	
Lane Grp Cap (vph)		951									1931	
v/s Ratio Prot		c0.11										
v/s Ratio Perm											0.38	
v/c Ratio		0.37									0.70	
Uniform Delay, d1		15.7									8.9	
Progression Factor		1.00									1.00	
Incremental Delay, d2		0.8									1.6	
Delay (s)		16.5									10.5	
Level of Service		B									B	
Approach Delay (s)		16.5			0.0			0.0			10.5	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	8.8
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	240	119	0	0	0	0	0	0	388	345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2									4.6	
Lane Util. Factor		0.95									0.95	
Frt		0.95									1.00	
Flt Protected		1.00									0.97	
Satd. Flow (prot)		3364									3448	
Flt Permitted		1.00									0.97	
Satd. Flow (perm)		3364									3448	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	261	129	0	0	0	0	0	0	422	375	0
RTOR Reduction (vph)	0	86	0	0	0	0	0	0	0	0	227	0
Lane Group Flow (vph)	0	304	0	0	0	0	0	0	0	0	570	0
Turn Type										Perm		
Protected Phases		4									6	
Permitted Phases										6		
Actuated Green, G (s)		14.0									19.5	
Effective Green, g (s)		14.0									19.5	
Actuated g/C Ratio		0.33									0.46	
Clearance Time (s)		4.2									4.6	
Vehicle Extension (s)		6.4									5.6	
Lane Grp Cap (vph)		1113									1590	
v/s Ratio Prot		c0.09										
v/s Ratio Perm											0.17	
v/c Ratio		0.27									0.36	
Uniform Delay, d1		10.4									7.4	
Progression Factor		1.00									1.00	
Incremental Delay, d2		0.4									0.4	
Delay (s)		10.8									7.7	
Level of Service		B									A	
Approach Delay (s)		10.8			0.0			0.0			7.7	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	8.8
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	217	371	0	0	167	105	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6	4.6					
Lane Util. Factor	1.00	1.00			0.95	1.00					
Frt	1.00	1.00			1.00	0.85					
Flt Protected	0.95	0.95			1.00	1.00					
Satd. Flow (prot)	1770	1770			3539	1583					
Flt Permitted	0.95	0.95			1.00	1.00					
Satd. Flow (perm)	1770	1770			3539	1583					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	403	0	0	182	114	0	0	0	0	0
RTOR Reduction (vph)	130	0	0	0	0	86	0	0	0	0	0
Lane Group Flow (vph)	106	403	0	0	182	28	0	0	0	0	0
Turn Type	Split					Perm					
Protected Phases	4	4			2						
Permitted Phases						2					
Actuated Green, G (s)	13.8	13.8			7.6	7.6					
Effective Green, g (s)	13.8	13.8			7.6	7.6					
Actuated g/C Ratio	0.45	0.45			0.25	0.25					
Clearance Time (s)	4.6	4.6			4.6	4.6					
Vehicle Extension (s)	5.0	5.0			4.5	4.5					
Lane Grp Cap (vph)	798	798			879	393					
v/s Ratio Prot	0.06	c0.23			c0.05						
v/s Ratio Perm						0.02					
v/c Ratio	0.13	0.51			0.21	0.07					
Uniform Delay, d1	4.9	6.0			9.1	8.8					
Progression Factor	1.00	1.00			1.00	1.00					
Incremental Delay, d2	0.2	1.1			0.2	0.1					
Delay (s)	5.1	7.0			9.3	8.9					
Level of Service	A	A			A	A					
Approach Delay (s)		6.3			9.2			0.0		0.0	
Approach LOS		A			A			A		A	

Intersection Summary

HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	30.6	Sum of lost time (s)	9.2
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (vph)	206	394	0	0	428	397	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.6	4.6			4.6	4.6					
Lane Util. Factor	1.00	1.00			0.95	1.00					
Frt	1.00	1.00			1.00	0.85					
Flt Protected	0.95	0.95			1.00	1.00					
Satd. Flow (prot)	1770	1770			3539	1583					
Flt Permitted	0.95	0.95			1.00	1.00					
Satd. Flow (perm)	1770	1770			3539	1583					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	428	0	0	465	432	0	0	0	0	0
RTOR Reduction (vph)	144	0	0	0	0	125	0	0	0	0	0
Lane Group Flow (vph)	80	428	0	0	465	307	0	0	0	0	0
Turn Type	Split					Perm					
Protected Phases	4	4			2						
Permitted Phases						2					
Actuated Green, G (s)	14.3	14.3			16.5	16.5					
Effective Green, g (s)	14.3	14.3			16.5	16.5					
Actuated g/C Ratio	0.36	0.36			0.41	0.41					
Clearance Time (s)	4.6	4.6			4.6	4.6					
Vehicle Extension (s)	5.0	5.0			4.5	4.5					
Lane Grp Cap (vph)	633	633			1460	653					
v/s Ratio Prot	0.05	c0.24			0.13						
v/s Ratio Perm						c0.19					
v/c Ratio	0.13	0.68			0.32	0.47					
Uniform Delay, d1	8.6	10.9			7.9	8.6					
Progression Factor	1.00	1.00			1.00	1.00					
Incremental Delay, d2	0.2	3.7			0.2	0.9					
Delay (s)	8.8	14.6			8.2	9.5					
Level of Service	A	B			A	A					
Approach Delay (s)		12.6			8.8			0.0		0.0	
Approach LOS		B			A			A		A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	303	616	4	29	0	0	0	0	0	711	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.7	3.7		3.7						4.1	
Lane Util. Factor		1.00	1.00		1.00						0.95	
Frt		1.00	0.85		1.00						0.98	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1863	1583		1852						3451	
Flt Permitted		1.00	1.00		0.97						1.00	
Satd. Flow (perm)		1863	1583		1812						3451	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	329	670	4	32	0	0	0	0	0	773	154
RTOR Reduction (vph)	0	0	72	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	329	598	0	36	0	0	0	0	0	899	0
Turn Type			Perm	Perm								
Protected Phases		4			8						6	
Permitted Phases			4	8								
Actuated Green, G (s)		25.9	25.9		25.9						25.5	
Effective Green, g (s)		25.9	25.9		25.9						25.5	
Actuated g/C Ratio		0.44	0.44		0.44						0.43	
Clearance Time (s)		3.7	3.7		3.7						4.1	
Vehicle Extension (s)		5.0	5.0		4.8						4.6	
Lane Grp Cap (vph)		815	693		793						1486	
v/s Ratio Prot		0.18									c0.26	
v/s Ratio Perm			c0.38		0.02							
v/c Ratio		0.40	0.86		0.05						0.61	
Uniform Delay, d1		11.4	15.0		9.6						13.0	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		0.7	11.7		0.0						0.9	
Delay (s)		12.1	26.8		9.6						13.9	
Level of Service		B	C		A						B	
Approach Delay (s)		21.9			9.6			0.0			13.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	7.8
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↰↑						↑↱	
Volume (vph)	0	358	191	8	62	0	0	0	0	0	546	131
Ideal Flow (vphpi)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.7	3.7		3.7						4.1	
Lane Util. Factor		1.00	1.00		1.00						0.95	
Frt		1.00	0.85		1.00						0.97	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1863	1583		1852						3437	
Flt Permitted		1.00	1.00		0.96						1.00	
Satd. Flow (perm)		1863	1583		1780						3437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	389	208	9	67	0	0	0	0	0	593	142
RTOR Reduction (vph)	0	0	124	0	0	0	0	0	0	0	35	0
Lane Group Flow (vph)	0	389	84	0	76	0	0	0	0	0	700	0
Turn Type			Perm	Perm								
Protected Phases		4			8						6	
Permitted Phases			4	8								
Actuated Green, G (s)		18.5	18.5		18.5						19.6	
Effective Green, g (s)		18.5	18.5		18.5						19.6	
Actuated g/C Ratio		0.40	0.40		0.40						0.43	
Clearance Time (s)		3.7	3.7		3.7						4.1	
Vehicle Extension (s)		5.0	5.0		4.8						4.6	
Lane Grp Cap (vph)		751	638		717						1468	
v/s Ratio Prot		c0.21									c0.20	
v/s Ratio Perm			0.05		0.04							
v/c Ratio		0.52	0.13		0.11						0.48	
Uniform Delay, d1		10.3	8.6		8.5						9.5	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.2	0.2		0.1						0.4	
Delay (s)		11.5	8.8		8.7						9.9	
Level of Service		B	A		A						A	
Approach Delay (s)		10.6			8.7			0.0			9.9	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	7.8
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	315	0	47	375	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6		
Lane Util. Factor	1.00			0.95		
Frt	1.00			1.00		
Flt Protected	0.95			0.99		
Satd. Flow (prot)	1770			3520		
Flt Permitted	0.95			0.99		
Satd. Flow (perm)	1770			3520		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	0	51	408	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	342	0	0	459	0	0
Turn Type			Split			
Protected Phases	4		2	2		
Permitted Phases						
Actuated Green, G (s)	12.4			13.5		
Effective Green, g (s)	12.4			13.5		
Actuated g/C Ratio	0.35			0.38		
Clearance Time (s)	4.6			4.6		
Vehicle Extension (s)	3.3			4.9		
Lane Grp Cap (vph)	625			1354		
v/s Ratio Prot	c0.19			c0.13		
v/s Ratio Perm						
v/c Ratio	0.55			0.34		
Uniform Delay, d1	9.1			7.6		
Progression Factor	1.00			1.00		
Incremental Delay, d2	1.0			0.3		
Delay (s)	10.1			7.9		
Level of Service	B			A		
Approach Delay (s)	10.1			7.9	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	35.1	Sum of lost time (s)	9.2
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	355	0	70	616	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.6			4.6		
Lane Util. Factor	1.00			0.95		
Frt	1.00			1.00		
Flt Protected	0.95			0.99		
Satd. Flow (prot)	1770			3521		
Flt Permitted	0.95			0.99		
Satd. Flow (perm)	1770			3521		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	0	76	670	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	386	0	0	746	0	0
Turn Type			Split			
Protected Phases	4		2	2		
Permitted Phases						
Actuated Green, G (s)	15.9			20.7		
Effective Green, g (s)	15.9			20.7		
Actuated g/C Ratio	0.35			0.45		
Clearance Time (s)	4.6			4.6		
Vehicle Extension (s)	3.3			4.9		
Lane Grp Cap (vph)	614			1591		
v/s Ratio Prot	c0.22			c0.21		
v/s Ratio Perm						
v/c Ratio	0.63			0.47		
Uniform Delay, d1	12.5			8.7		
Progression Factor	1.00			1.00		
Incremental Delay, d2	2.1			0.4		
Delay (s)	14.6			9.2		
Level of Service	B			A		
Approach Delay (s)	14.6			9.2	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	9.2
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	310	52	97	197	0	0	0	0	163	1052	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	
Lane Util. Factor		0.95		1.00	0.95						0.91	
Frt		0.98		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3462		1770	3539						4982	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3462		1770	3539						4982	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	337	57	105	214	0	0	0	0	177	1143	140
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	379	0	105	214	0	0	0	0	0	1447	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Actuated Green, G (s)		17.7		7.0	28.4						24.1	
Effective Green, g (s)		17.7		7.0	28.4						24.1	
Actuated g/C Ratio		0.29		0.11	0.46						0.39	
Clearance Time (s)		4.2		3.7	4.2						4.9	
Vehicle Extension (s)		6.8		2.0	6.8						0.2	
Lane Grp Cap (vph)		995		201	1632						1949	
v/s Ratio Prot		c0.11		c0.06	0.06						c0.29	
v/s Ratio Perm												
v/c Ratio		0.38		0.52	0.13						0.74	
Uniform Delay, d1		17.6		25.7	9.5						16.1	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.8		1.1	0.1						1.4	
Delay (s)		18.4		26.9	9.6						17.5	
Level of Service		B		C	A						B	
Approach Delay (s)		18.4			15.3			0.0			17.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	492	36	91	324	0	0	0	0	187	600	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	
Lane Util. Factor		0.95		1.00	0.95						0.91	
Frt		0.99		1.00	1.00						0.98	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3503		1770	3539						4928	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		3503		1770	3539						4928	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	535	39	99	352	0	0	0	0	203	652	140
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	569	0	99	352	0	0	0	0	0	969	0
Turn Type				Prot						Split		
Protected Phases		4		3	8					6	6	
Permitted Phases												
Actuated Green, G (s)		21.5		6.6	31.8						20.0	
Effective Green, g (s)		21.5		6.6	31.8						20.0	
Actuated g/C Ratio		0.35		0.11	0.52						0.33	
Clearance Time (s)		4.2		3.7	4.2						4.9	
Vehicle Extension (s)		6.8		2.0	6.8						0.2	
Lane Grp Cap (vph)		1237		192	1848						1618	
v/s Ratio Prot		c0.16		c0.06	0.10						c0.20	
v/s Ratio Perm												
v/c Ratio		0.46		0.52	0.19						0.60	
Uniform Delay, d1		15.2		25.6	7.7						17.1	
Progression Factor		1.00		1.00	1.00						1.00	
Incremental Delay, d2		0.9		1.0	0.2						0.4	
Delay (s)		16.1		26.6	7.9						17.5	
Level of Service		B		C	A						B	
Approach Delay (s)		16.1			12.0			0.0			17.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	338	0	0	268	109	25	467	27	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	0.95			0.95	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583		5072	1583			
Flt Permitted	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583		5072	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	367	0	0	291	118	27	508	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	89	0	0	18	0	0	0
Lane Group Flow (vph)	148	367	0	0	291	29	0	535	11	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)	7.4	24.2			13.1	13.1		19.6	19.6			
Effective Green, g (s)	7.4	24.2			13.1	13.1		19.6	19.6			
Actuated g/C Ratio	0.14	0.46			0.25	0.25		0.37	0.37			
Clearance Time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	2.0	5.1			5.1	5.1		0.2	0.2			
Lane Grp Cap (vph)	248	1619			876	392		1879	587			
v/s Ratio Prot	c0.08	0.10			c0.08			c0.11				
v/s Ratio Perm						0.02			0.01			
v/c Ratio	0.60	0.23			0.33	0.07		0.28	0.02			
Uniform Delay, d1	21.3	8.7			16.3	15.3		11.7	10.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	2.6	0.2			0.5	0.2		0.0	0.0			
Delay (s)	23.9	8.8			16.8	15.4		11.7	10.6			
Level of Service	C	A			B	B		B	B			
Approach Delay (s)		13.2			16.4			11.7			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	536	0	0	373	101	36	1265	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	0.95			0.95	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583		5078	1583			
Flt Permitted	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583		5078	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	583	0	0	405	110	39	1375	25	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	81	0	0	15	0	0	0
Lane Group Flow (vph)	155	583	0	0	405	29	0	1414	10	0	0	0
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2			
Actuated Green, G (s)	10.6	31.1			16.8	16.8		23.4	23.4			
Effective Green, g (s)	10.6	31.1			16.8	16.8		23.4	23.4			
Actuated g/C Ratio	0.17	0.49			0.26	0.26		0.37	0.37			
Clearance Time (s)	3.7	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	2.0	5.1			5.1	5.1		0.2	0.2			
Lane Grp Cap (vph)	295	1731			935	418		1868	582			
v/s Ratio Prot	c0.09	0.16			c0.11			c0.28				
v/s Ratio Perm						0.02			0.01			
v/c Ratio	0.53	0.34			0.43	0.07		0.76	0.02			
Uniform Delay, d1	24.2	9.9			19.4	17.5		17.6	12.8			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.8	0.3			0.7	0.2		1.6	0.0			
Delay (s)	25.0	10.2			20.1	17.7		19.2	12.8			
Level of Service	C	B			C	B		B	B			
Approach Delay (s)		13.3			19.6			19.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	225	37	111	323	42	34	200	25	74	386	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.98		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3465		1770	3478		1770	3480		1770	3462	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3465		1770	3478		1770	3480		1770	3462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	245	40	121	351	46	37	217	27	80	420	71
RTOR Reduction (vph)	0	15	0	0	11	0	0	10	0	0	13	0
Lane Group Flow (vph)	65	270	0	121	386	0	37	234	0	80	478	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	4.5	15.5		7.2	18.2		3.7	14.5		6.3	27.1	
Effective Green, g (s)	4.5	15.5		7.2	18.2		3.7	14.5		6.3	27.1	
Actuated g/C Ratio	0.06	0.22		0.10	0.26		0.05	0.21		0.09	0.38	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	113	760		180	895		93	714		158	1327	
v/s Ratio Prot	0.04	0.08		c0.07	c0.11		0.02	0.07		c0.05	c0.14	
v/s Ratio Perm												
v/c Ratio	0.58	0.36		0.67	0.43		0.40	0.33		0.51	0.36	
Uniform Delay, d1	32.2	23.4		30.6	21.9		32.4	23.9		30.7	15.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.3	0.6		7.5	0.7		1.0	0.6		0.9	0.4	
Delay (s)	36.5	24.0		38.1	22.6		33.4	24.5		31.6	15.9	
Level of Service	D	C		D	C		C	C		C	B	
Approach Delay (s)		26.3			26.3			25.7			18.1	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	17.2
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	485	58	91	402	90	58	433	83	112	254	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.97		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3483		1770	3442		1770	3454		1770	3406	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3483		1770	3442		1770	3454		1770	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	527	63	99	437	98	63	471	90	122	276	92
RTOR Reduction (vph)	0	10	0	0	20	0	0	16	0	0	31	0
Lane Group Flow (vph)	85	580	0	99	515	0	63	545	0	122	337	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	6.9	22.2		7.3	22.6		6.1	18.7		7.8	30.4	
Effective Green, g (s)	6.9	22.2		7.3	22.6		6.1	18.7		7.8	30.4	
Actuated g/C Ratio	0.08	0.27		0.09	0.27		0.07	0.22		0.09	0.37	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	14.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	147	929		155	935		130	776		166	1245	
v/s Ratio Prot	0.05	c0.17		c0.06	0.15		0.04	c0.16		c0.07	0.10	
v/s Ratio Perm												
v/c Ratio	0.58	0.62		0.64	0.55		0.48	0.70		0.73	0.27	
Uniform Delay, d1	36.7	26.8		36.7	25.9		37.0	29.7		36.7	18.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	1.9		6.2	1.2		1.0	3.6		13.5	0.2	
Delay (s)	40.1	28.7		42.9	27.1		38.1	33.3		50.2	18.8	
Level of Service	D	C		D	C		D	C		D	B	
Approach Delay (s)		30.1			29.6			33.8			26.6	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	27.2
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	237	81	101	314	100	126	367	43	86	424	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3411		1770	3483		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3411		1770	3483		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	258	88	110	341	109	137	399	47	93	461	90
RTOR Reduction (vph)	0	0	67	0	38	0	0	10	0	0	0	67
Lane Group Flow (vph)	73	258	21	110	412	0	137	436	0	93	461	23
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	5.8	15.3	15.3	6.7	16.2		7.3	17.5		6.3	16.5	16.5
Effective Green, g (s)	5.8	15.3	15.3	6.7	16.2		7.3	17.5		6.3	16.5	16.5
Actuated g/C Ratio	0.09	0.24	0.24	0.11	0.25		0.11	0.28		0.10	0.26	0.26
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5		2.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	161	851	381	186	869		203	958		175	918	411
v/s Ratio Prot	0.04	0.07		c0.06	c0.12		c0.08	0.13		0.05	c0.13	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.45	0.30	0.06	0.59	0.47		0.67	0.45		0.53	0.50	0.06
Uniform Delay, d1	27.4	19.8	18.6	27.1	20.1		27.0	19.1		27.2	20.1	17.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3	0.1	3.3	0.7		6.8	0.7		1.6	0.9	0.1
Delay (s)	28.1	20.1	18.7	30.5	20.8		33.8	19.8		28.8	21.0	17.8
Level of Service	C	C	B	C	C		C	B		C	C	B
Approach Delay (s)		21.2			22.7			23.1			21.7	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	22.2	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.49			
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	12.9	
Intersection Capacity Utilization	49.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	133	497	139	122	404	167	119	623	57	143	470	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3384		1770	3495		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3384		1770	3495		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	540	151	133	439	182	129	677	62	155	511	91
RTOR Reduction (vph)	0	0	96	0	55	0	0	8	0	0	0	66
Lane Group Flow (vph)	145	540	55	133	566	0	129	731	0	155	511	25
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	9.7	22.1	22.1	8.1	20.5		8.0	19.2		10.0	21.2	21.2
Effective Green, g (s)	9.7	22.1	22.1	8.1	20.5		8.0	19.2		10.0	21.2	21.2
Actuated g/C Ratio	0.13	0.29	0.29	0.10	0.27		0.10	0.25		0.13	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9		4.0	4.9		4.0	4.9	4.9
Vehicle Extension (s)	2.0	4.5	4.5	2.0	4.5		2.0	5.0		2.0	5.0	5.0
Lane Grp Cap (vph)	222	1013	453	186	899		183	869		229	972	435
v/s Ratio Prot	c0.08	0.15		0.08	c0.17		0.07	c0.21		c0.09	0.14	
v/s Ratio Perm			0.03									0.02
v/c Ratio	0.65	0.53	0.12	0.72	0.63		0.70	0.84		0.68	0.53	0.06
Uniform Delay, d1	32.1	23.2	20.4	33.4	25.0		33.5	27.5		32.1	23.7	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.2	0.8	0.2	10.3	1.8		9.6	8.1		6.1	1.0	0.1
Delay (s)	37.3	24.0	20.6	43.8	26.8		43.1	35.7		38.2	24.7	20.8
Level of Service	D	C	C	D	C		D	D		D	C	C
Approach Delay (s)		25.7			29.8			36.8			27.0	
Approach LOS		C			C			D			C	

Intersection Summary

HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	17.8
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	140	0	0	0	189	1211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.2					4.9
Lane Util. Factor	1.00					0.91
Frt	1.00					1.00
Flt Protected	0.95					0.99
Satd. Flow (prot)	1770					5051
Flt Permitted	0.95					0.99
Satd. Flow (perm)	1770					5051
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	0	0	0	205	1316
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	152	0	0	0	0	1521
Turn Type					Split	
Protected Phases	8				6	6
Permitted Phases						
Actuated Green, G (s)	8.9					30.4
Effective Green, g (s)	8.9					30.4
Actuated g/C Ratio	0.18					0.63
Clearance Time (s)	4.2					4.9
Vehicle Extension (s)	4.8					5.4
Lane Grp Cap (vph)	325					3173
v/s Ratio Prot	c0.09					c0.30
v/s Ratio Perm						
v/c Ratio	0.47					0.48
Uniform Delay, d1	17.6					4.8
Progression Factor	1.00					1.00
Incremental Delay, d2	2.1					0.3
Delay (s)	19.7					5.1
Level of Service	B					A
Approach Delay (s)	19.7		0.0			5.1
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	9.1
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	108	0	0	0	269	817
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.2					4.9
Lane Util. Factor	1.00					0.91
Frt	1.00					1.00
Flt Protected	0.95					0.99
Satd. Flow (prot)	1770					5023
Flt Permitted	0.95					0.99
Satd. Flow (perm)	1770					5023
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	0	0	0	292	888
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	117	0	0	0	0	1180
Turn Type					Split	
Protected Phases	8				6	6
Permitted Phases						
Actuated Green, G (s)	7.8					27.7
Effective Green, g (s)	7.8					27.7
Actuated g/C Ratio	0.17					0.62
Clearance Time (s)	4.2					4.9
Vehicle Extension (s)	4.8					5.4
Lane Grp Cap (vph)	310					3120
v/s Ratio Prot	c0.07					c0.23
v/s Ratio Perm						
v/c Ratio	0.38					0.38
Uniform Delay, d1	16.3					4.2
Progression Factor	1.00					1.00
Incremental Delay, d2	1.5					0.2
Delay (s)	17.8					4.4
Level of Service	B					A
Approach Delay (s)	17.8		0.0			4.4
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	9.1
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	186	0	0	140	237	2	441	271	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	1.00			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		5084	1583			
Flt Permitted	0.66	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1230	1863			1863	1583		5084	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	202	0	0	152	258	2	479	295	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	161	0	0	173	0	0	0
Lane Group Flow (vph)	9	202	0	0	152	97	0	481	122	0	0	0
Turn Type	Perm					Perm	Split		Perm			
Protected Phases		4			4		2	2				
Permitted Phases	4					4			2			
Actuated Green, G (s)	16.3	16.3			16.3	16.3		17.8	17.8			
Effective Green, g (s)	16.3	16.3			16.3	16.3		17.8	17.8			
Actuated g/C Ratio	0.38	0.38			0.38	0.38		0.41	0.41			
Clearance Time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	5.7	5.7			5.7	5.7		5.2	5.2			
Lane Grp Cap (vph)	464	703			703	597		2095	652			
v/s Ratio Prot		c0.11			0.08			c0.09				
v/s Ratio Perm	0.01					0.06			0.08			
v/c Ratio	0.02	0.29			0.22	0.16		0.23	0.19			
Uniform Delay, d1	8.4	9.4			9.1	8.9		8.2	8.1			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.0	0.6			0.4	0.3		0.1	0.3			
Delay (s)	8.5	10.0			9.5	9.3		8.4	8.4			
Level of Service	A	A			A	A		A	A			
Approach Delay (s)		9.9			9.4			8.4			0.0	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	9.1
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	255	0	0	107	210	0	905	611	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Lane Util. Factor	1.00	1.00			1.00	1.00		0.91	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		5085	1583			
Flt Permitted	0.68	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	1271	1863			1863	1583		5085	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	277	0	0	116	228	0	984	664	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	43	0	0	217	0	0	0
Lane Group Flow (vph)	21	277	0	0	116	185	0	984	447	0	0	0
Turn Type	Perm					Perm	Split		Perm			
Protected Phases		4			4		2	2				
Permitted Phases	4					4			2			
Actuated Green, G (s)	19.0	19.0			19.0	19.0		29.4	29.4			
Effective Green, g (s)	19.0	19.0			19.0	19.0		29.4	29.4			
Actuated g/C Ratio	0.33	0.33			0.33	0.33		0.51	0.51			
Clearance Time (s)	4.2	4.2			4.2	4.2		4.9	4.9			
Vehicle Extension (s)	5.7	5.7			5.7	5.7		5.2	5.2			
Lane Grp Cap (vph)	420	616			616	523		2600	809			
v/s Ratio Prot		c0.15			0.06			0.19				
v/s Ratio Perm	0.02					0.12			c0.28			
v/c Ratio	0.05	0.45			0.19	0.35		0.38	0.55			
Uniform Delay, d1	13.1	15.1			13.7	14.6		8.5	9.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.1	1.4			0.4	1.1		0.2	1.5			
Delay (s)	13.2	16.5			14.1	15.7		8.7	11.0			
Level of Service	B	B			B	B		A	B			
Approach Delay (s)		16.3			15.2			9.7			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	9.1
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	352	724	5	79	0	0	0	0	3	682	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frt		0.91		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1694		1770	1863						3539	1583
Flt Permitted		1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)		1694		1770	1863						3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	383	787	5	86	0	0	0	0	3	741	132
RTOR Reduction (vph)	0	68	0	0	0	0	0	0	0	0	0	82
Lane Group Flow (vph)	0	1102	0	5	86	0	0	0	0	0	744	50
Turn Type				Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases												6
Actuated Green, G (s)		26.2		1.0	30.9						24.6	24.6
Effective Green, g (s)		26.2		1.0	30.9						24.6	24.6
Actuated g/C Ratio		0.41		0.02	0.48						0.38	0.38
Clearance Time (s)		4.2		3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9		2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		687		27	891						1348	603
v/s Ratio Prot		c0.65		0.00	c0.05						c0.21	
v/s Ratio Perm												0.03
v/c Ratio		1.60		0.19	0.10						0.55	0.08
Uniform Delay, d1		19.2		31.4	9.2						15.7	12.8
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		278.4		1.2	0.1						0.9	0.1
Delay (s)		297.6		32.6	9.3						16.6	12.9
Level of Service		F		C	A						B	B
Approach Delay (s)		297.6			10.6			0.0			16.0	
Approach LOS		F			B			A			B	

Intersection Summary			
HCM Average Control Delay	169.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	13.3
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	212	309	14	132	0	0	0	0	3	752	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.2		3.7	4.2						4.9	4.9
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frt		0.92		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1713		1770	1863						3539	1583
Flt Permitted		1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)		1713		1770	1863						3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	230	336	15	143	0	0	0	0	3	817	190
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	516	0	15	143	0	0	0	0	0	820	76
Turn Type				Prot						Split		Perm
Protected Phases		4		3	8					6	6	
Permitted Phases												6
Actuated Green, G (s)		26.1		1.1	30.9						26.8	26.8
Effective Green, g (s)		26.1		1.1	30.9						26.8	26.8
Actuated g/C Ratio		0.39		0.02	0.46						0.40	0.40
Clearance Time (s)		4.2		3.7	4.2						4.9	4.9
Vehicle Extension (s)		4.9		2.0	4.6						5.2	5.2
Lane Grp Cap (vph)		669		29	862						1420	635
v/s Ratio Prot		c0.30		c0.01	0.08						c0.23	
v/s Ratio Perm												0.05
v/c Ratio		0.77		0.52	0.17						0.58	0.12
Uniform Delay, d1		17.7		32.6	10.4						15.6	12.6
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		6.4		6.3	0.2						1.0	0.2
Delay (s)		24.1		38.9	10.6						16.5	12.8
Level of Service		C		D	B						B	B
Approach Delay (s)		24.1			13.3			0.0			15.8	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	12.8
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	137	12	2	19	7	1	15	1	10	26	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	149	13	2	21	8	1	16	1	11	28	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1300										
pX, platoon unblocked												
vC, conflicting volume	28			162			219	205	81	130	208	24
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	28			162			219	205	81	130	208	24
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	99			100			100	98	100	99	96	100
cM capacity (veh/h)	1583			1414			690	685	963	809	683	1046

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	83	88	30	18	42
Volume Left	9	0	2	1	11
Volume Right	0	13	8	1	3
cSH	1583	1700	1414	697	732
Volume to Capacity	0.01	0.05	0.00	0.03	0.06
Queue Length 95th (ft)	0	0	0	2	5
Control Delay (s)	0.8	0.0	0.6	10.3	10.2
Lane LOS	A		A	B	B
Approach Delay (s)	0.4		0.6	10.3	10.2
Approach LOS				B	B

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	17.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	3	66	13	5	103	0	8	20	1	11	7	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	72	14	5	112	0	9	22	1	12	8	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)		1300										
pX, platoon unblocked												
vC, conflicting volume	112			86			217	208	43	177	215	112
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	112			86			217	208	43	177	215	112
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			99	97	100	98	99	99
cM capacity (veh/h)	1476			1508			707	684	1018	746	677	920

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	39	50	117	32	25
Volume Left	3	0	5	9	12
Volume Right	0	14	0	1	5
cSH	1476	1700	1508	698	754
Volume to Capacity	0.00	0.03	0.00	0.05	0.03
Queue Length 95th (ft)	0	0	0	4	3
Control Delay (s)	0.6	0.0	0.4	10.4	9.9
Lane LOS	A		A	B	A
Approach Delay (s)	0.3		0.4	10.4	9.9
Approach LOS				B	A

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	19.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	4	136	8	3	24	5	0	7	5	9	8	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	148	9	3	26	5	0	8	5	10	9	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1008							
pX, platoon unblocked												
vC, conflicting volume	32			157			203	199	78	127	201	29
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	32			157			203	199	78	127	201	29
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	99	99	99	99	100
cM capacity (veh/h)	1579			1421			726	692	967	819	691	1039

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	78	83	35	13	21
Volume Left	4	0	3	0	10
Volume Right	0	9	5	5	2
cSH	1579	1700	1421	785	776
Volume to Capacity	0.00	0.05	0.00	0.02	0.03
Queue Length 95th (ft)	0	0	0	1	2
Control Delay (s)	0.4	0.0	0.7	9.7	9.8
Lane LOS	A		A	A	A
Approach Delay (s)	0.2		0.7	9.7	9.8
Approach LOS				A	A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	10	69	4	5	98	4	1	22	2	15	10	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	75	4	5	107	4	1	24	2	16	11	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1008							
pX, platoon unblocked												
vC, conflicting volume	111			79			233	221	40	193	221	109
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	111			79			233	221	40	193	221	109
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	99			100			100	96	100	98	98	99
cM capacity (veh/h)	1477			1517			682	669	1023	721	669	924

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	48	42	116	27	36
Volume Left	11	0	5	1	16
Volume Right	0	4	4	2	9
cSH	1477	1700	1517	689	743
Volume to Capacity	0.01	0.02	0.00	0.04	0.05
Queue Length 95th (ft)	1	0	0	3	4
Control Delay (s)	1.7	0.0	0.4	10.4	10.1
Lane LOS	A		A	B	B
Approach Delay (s)	0.9		0.4	10.4	10.1
Approach LOS				B	B

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	24.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	9	10	4	16	13	1	84	893	13	23	281	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	2049	1742	1947	2049	1742	1947	3885		1947	3878	
Flt Permitted	0.75	1.00	1.00	0.75	1.00	1.00	0.56	1.00		0.29	1.00	
Satd. Flow (perm)	1533	2049	1742	1538	2049	1742	1151	3885		590	3878	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	11	4	17	14	1	91	971	14	25	305	8
RTOR Reduction (vph)	0	0	3	0	0	1	0	2	0	0	4	0
Lane Group Flow (vph)	10	11	1	17	14	0	91	983	0	25	309	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	5.9	5.9	5.9	5.9	5.9	5.9	13.9	13.9		13.9	13.9	
Effective Green, g (s)	5.9	5.9	5.9	5.9	5.9	5.9	13.9	13.9		13.9	13.9	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.50	0.50		0.50	0.50	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	325	435	370	326	435	370	576	1943		295	1939	
v/s Ratio Prot		0.01			0.01			c0.25			0.08	
v/s Ratio Perm	0.01		0.00	c0.01		0.00	0.08			0.04		
v/c Ratio	0.03	0.03	0.00	0.05	0.03	0.00	0.16	0.51		0.08	0.16	
Uniform Delay, d1	8.7	8.7	8.6	8.7	8.7	8.6	3.8	4.7		3.6	3.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2		0.1	0.0	
Delay (s)	8.7	8.7	8.6	8.8	8.7	8.6	3.9	4.9		3.8	3.8	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		8.7			8.8			4.8			3.8	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	27.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	16	31	24	46	42	5	78	413	30	35	865	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1947	2049	1742	1947	2049	1742	1947	3853		1947	3880	
Flt Permitted	0.73	1.00	1.00	0.73	1.00	1.00	0.29	1.00		0.48	1.00	
Satd. Flow (perm)	1490	2049	1742	1506	2049	1742	590	3853		977	3880	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	34	26	50	46	5	85	449	33	38	940	21
RTOR Reduction (vph)	0	0	20	0	0	4	0	11	0	0	3	0
Lane Group Flow (vph)	17	34	6	50	46	1	85	471	0	38	958	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2		2	4			8		
Actuated Green, G (s)	6.5	6.5	6.5	6.5	6.5	6.5	13.9	13.9		13.9	13.9	
Effective Green, g (s)	6.5	6.5	6.5	6.5	6.5	6.5	13.9	13.9		13.9	13.9	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.49	0.49		0.49	0.49	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	341	469	399	345	469	399	289	1886		478	1899	
v/s Ratio Prot		0.02			0.02			0.12			c0.25	
v/s Ratio Perm	0.01		0.00	c0.03		0.00	0.14			0.04		
v/c Ratio	0.05	0.07	0.01	0.14	0.10	0.00	0.29	0.25		0.08	0.50	
Uniform Delay, d1	8.5	8.6	8.5	8.7	8.6	8.4	4.3	4.2		3.9	4.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.2	0.1	0.0	0.6	0.1		0.1	0.2	
Delay (s)	8.6	8.7	8.5	8.9	8.7	8.5	4.9	4.3		3.9	5.1	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		8.6			8.8			4.4			5.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	28.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	7	101	2	2	142	10	1	3	7	8	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	110	2	2	154	11	1	3	8	9	1	4
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	165			112			295	296	111	299	291	160
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	165			112			295	296	111	299	291	160
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 %	99			100			100	99	99	99	100	100
cM capacity (veh/h)	1413			1478			650	612	942	642	615	885

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	120	167	12	14
Volume Left	8	2	1	9
Volume Right	2	11	8	4
cSH	1413	1478	793	698
Volume to Capacity	0.01	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	1	2
Control Delay (s)	0.5	0.1	9.6	10.3
Lane LOS	A	A	A	B
Approach Delay (s)	0.5	0.1	9.6	10.3
Approach LOS			A	B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	122	0	1	177	4	4	4	14	16	4	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	133	0	1	192	4	4	4	15	17	4	10
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	197			133			352	342	133	358	340	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	197			133			352	342	133	358	340	195
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			100			99	99	98	97	99	99
cM capacity (veh/h)	1376			1452			590	577	917	582	579	847

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	138	198	24	32
Volume Left	5	1	4	17
Volume Right	0	4	15	10
cSH	1376	1452	759	644
Volume to Capacity	0.00	0.00	0.03	0.05
Queue Length 95th (ft)	0	0	2	4
Control Delay (s)	0.3	0.0	9.9	10.9
Lane LOS	A	A	A	B
Approach Delay (s)	0.3	0.0	9.9	10.9
Approach LOS			A	B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	32	67	10	3	136	5	8	4	2	1	5	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	73	11	3	148	5	9	4	2	1	5	28
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	153			84			336	308	78	309	310	151
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153			84			336	308	78	309	310	151
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 %	98			100			99	99	100	100	99	97
cM capacity (veh/h)	1427			1513			582	590	982	625	588	896

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	118	157	15	35
Volume Left	35	3	9	1
Volume Right	11	5	2	28
cSH	1427	1513	621	818
Volume to Capacity	0.02	0.00	0.02	0.04
Queue Length 95th (ft)	2	0	2	3
Control Delay (s)	2.4	0.2	10.9	9.6
Lane LOS	A	A	B	A
Approach Delay (s)	2.4	0.2	10.9	9.6
Approach LOS			B	A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	78	114	9	2	50	8	4	10	2	1	15	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	85	124	10	2	54	9	4	11	2	1	16	10
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	63			134			379	366	129	369	366	59
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			134			379	366	129	369	366	59
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 %	94			100			99	98	100	100	97	99
cM capacity (veh/h)	1540			1451			535	531	921	552	530	1007

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	218	65	17	27
Volume Left	85	2	4	1
Volume Right	10	9	2	10
cSH	1540	1451	562	641
Volume to Capacity	0.06	0.00	0.03	0.04
Queue Length 95th (ft)	4	0	2	3
Control Delay (s)	3.2	0.3	11.6	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	3.2	0.3	11.6	10.9
Approach LOS			B	B

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑↑↱		↰	↑↑↱	
Volume (veh/h)	33	17	32	19	10	2	78	616	11	3	417	114
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	18	35	21	11	2	85	670	12	3	453	124
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	1034	1373	289	1122	1429	341	577			682		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1034	1373	289	1122	1429	341	577			682		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	78	86	95	84	91	100	91			100		
cM capacity (veh/h)	162	132	708	127	122	655	992			907		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	89	34	85	446	235	3	302	275
Volume Left	36	21	85	0	0	3	0	0
Volume Right	35	2	0	0	12	0	0	124
cSH	217	132	992	1700	1700	907	1700	1700
Volume to Capacity	0.41	0.25	0.09	0.26	0.14	0.00	0.18	0.16
Queue Length 95th (ft)	47	24	7	0	0	0	0	0
Control Delay (s)	32.8	41.3	9.0	0.0	0.0	9.0	0.0	0.0
Lane LOS	D	E	A			A		
Approach Delay (s)	32.8	41.3	1.0			0.1		
Approach LOS	D	E						

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	35.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	74	9	78	15	9	11	46	522	15	2	631	47
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	80	10	85	16	10	12	50	567	16	2	686	51
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	1116	1399	368	1112	1417	292	737			584		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1116	1399	368	1112	1417	292	737			584		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	44	93	87	87	92	98	94			100		
cM capacity (veh/h)	143	131	629	127	128	705	865			987		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	175	38	50	378	205	2	457	280
Volume Left	80	16	50	0	0	2	0	0
Volume Right	85	12	0	0	16	0	0	51
cSH	227	172	865	1700	1700	987	1700	1700
Volume to Capacity	0.77	0.22	0.06	0.22	0.12	0.00	0.27	0.16
Queue Length 95th (ft)	137	20	5	0	0	0	0	0
Control Delay (s)	59.6	31.9	9.4	0.0	0.0	8.7	0.0	0.0
Lane LOS	F	D	A			A		
Approach Delay (s)	59.6	31.9	0.7			0.0		
Approach LOS	F	D						

Intersection Summary				
Average Delay	7.7			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Sign Control	Stop		Stop			Stop			Stop	
Volume (vph)	23	13	0	116	0	0	0	234	109	608
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	14	0	126	0	0	0	254	118	661

Direction, Lane #	SB 1	NW 1	NE 1	SW 1	SW 2
Volume Total (vph)	39	126	0	373	661
Volume Left (vph)	0	0	0	254	0
Volume Right (vph)	14	0	0	0	661
Hadj (s)	-0.18	0.03	0.00	0.17	-0.57
Departure Headway (s)	4.8	4.9	4.8	4.5	3.2
Degree Utilization, x	0.05	0.17	0.00	0.47	0.59
Capacity (veh/h)	681	685	715	776	1118
Control Delay (s)	8.1	8.9	7.8	11.3	10.6
Approach Delay (s)	8.1	8.9	0.0	10.9	
Approach LOS	A	A	A	B	

Intersection Summary			
Delay	10.6		
HCM Level of Service	B		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBL	SBR	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Sign Control	Stop		Stop			Stop			Stop	
Volume (vph)	120	26	0	243	0	0	7	231	19	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	28	0	264	0	0	8	251	21	161

Direction, Lane #	SB 1	NW 1	NE 1	SW 1	SW 2
Volume Total (vph)	159	264	8	272	161
Volume Left (vph)	0	0	0	251	0
Volume Right (vph)	28	0	8	0	161
Hadj (s)	-0.07	0.03	-0.57	0.22	-0.57
Departure Headway (s)	5.0	4.9	4.9	5.2	3.2
Degree Utilization, x	0.22	0.36	0.01	0.39	0.14
Capacity (veh/h)	675	696	640	652	1121
Control Delay (s)	9.4	10.7	7.9	11.5	6.7
Approach Delay (s)	9.4	10.7	7.9	9.7	
Approach LOS	A	B	A	A	

Intersection Summary			
Delay	9.9		
HCM Level of Service	A		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	78	103	0	0	0	187	0	118	12	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	85	112	0	0	0	203	0	128	13	0	0	0
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	0			112			383	282	56	303	282	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			112			383	282	56	303	282	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	78	99	100	100	100
cM capacity (veh/h)	1622			1476			528	593	999	496	593	1084

Direction, Lane #	SE 1	SE 2	SE 3	NW 1	NE 1	NE 2
Volume Total	85	56	56	203	86	56
Volume Left	85	0	0	0	0	0
Volume Right	0	0	0	203	0	13
cSH	1622	1700	1700	1700	593	655
Volume to Capacity	0.05	0.03	0.03	0.12	0.14	0.09
Queue Length 95th (ft)	4	0	0	0	13	7
Control Delay (s)	7.3	0.0	0.0	0.0	12.1	11.0
Lane LOS	A				B	B
Approach Delay (s)	3.2			0.0	11.7	
Approach LOS					B	

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	29.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	605	109	0	0	0	275	0	160	34	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	658	118	0	0	0	299	0	174	37	0	0	0
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	0			118			1583	1434	59	1498	1434	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			118			1583	1434	59	1498	1434	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	59			100			100	0	96	0	100	100
cM capacity (veh/h)	1622			1467			50	79	994	0	79	1084

Direction, Lane #	SE 1	SE 2	SE 3	NW 1	NE 1	NE 2
Volume Total	658	59	59	299	116	95
Volume Left	658	0	0	0	0	0
Volume Right	0	0	0	299	0	37
cSH	1622	1700	1700	1700	79	123
Volume to Capacity	0.41	0.03	0.03	0.18	1.47	0.77
Queue Length 95th (ft)	50	0	0	0	233	112
Control Delay (s)	8.7	0.0	0.0	0.0	359.2	96.0
Lane LOS	A				F	F
Approach Delay (s)	7.4			0.0	240.7	
Approach LOS					F	

Intersection Summary				
Average Delay	43.9			
Intersection Capacity Utilization	56.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	86	265	3	4	68	38	3	5	13	40	5	19
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	288	3	4	74	41	3	5	14	43	5	21
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	115			291			603	601	146	451	582	95
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			291			603	601	146	451	582	95
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	94			100			99	99	98	90	99	98
cM capacity (veh/h)	1471			1267			352	385	875	454	395	944

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	238	147	120	23	70
Volume Left	93	0	4	3	43
Volume Right	0	3	41	14	21
cSH	1471	1700	1267	577	530
Volume to Capacity	0.06	0.09	0.00	0.04	0.13
Queue Length 95th (ft)	5	0	0	3	11
Control Delay (s)	3.3	0.0	0.3	11.5	12.8
Lane LOS	A		A	B	B
Approach Delay (s)	2.0		0.3	11.5	12.8
Approach LOS				B	B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	35	143	0	2	40	23	1	3	4	17	30	33
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	155	0	2	43	25	1	3	4	18	33	36
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	68			155			344	304	78	220	292	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	68			155			344	304	78	220	292	56
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	98			100			100	99	100	97	95	96
cM capacity (veh/h)	1531			1422			531	592	967	696	601	999

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	116	78	71	9	87
Volume Left	38	0	2	1	18
Volume Right	0	0	25	4	36
cSH	1531	1700	1422	721	745
Volume to Capacity	0.02	0.05	0.00	0.01	0.12
Queue Length 95th (ft)	2	0	0	1	10
Control Delay (s)	2.6	0.0	0.2	10.1	10.5
Lane LOS	A		A	B	B
Approach Delay (s)	1.5		0.2	10.1	10.5
Approach LOS				B	B

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	22.7%	ICU Level of Service		A
Analysis Period (min)	15			

HANFORD CONSTRUCTION CONDITIONS
SYNCHRO OUTPUT

HCM Unsignalized Intersection Capacity Analysis
1: SR 198 & 9 th Ave

11/10/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	731	28	29	955	10	0	0	42	0	0	68
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	795	30	32	1038	11	0	0	46	0	0	74
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	1049			825			1579	2035	412	1662	2045	524
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1049			825			1579	2035	412	1662	2045	524
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	91			96			100	100	92	100	100	85
cM capacity (veh/h)	659			801			57	49	589	53	49	498

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	57	530	295	32	692	357	46	74
Volume Left	57	0	0	32	0	0	0	0
Volume Right	0	0	30	0	0	11	46	74
cSH	659	1700	1700	801	1700	1700	589	498
Volume to Capacity	0.09	0.31	0.17	0.04	0.41	0.21	0.08	0.15
Queue Length 95th (ft)	7	0	0	3	0	0	6	13
Control Delay (s)	11.0	0.0	0.0	9.7	0.0	0.0	11.6	13.5
Lane LOS	B			A			B	B
Approach Delay (s)	0.7			0.3			11.6	13.5
Approach LOS							B	B

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	37.6%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
1: SR 198 & 9 th Ave

11/10/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	114	1043	30	39	753	9	0	0	44	0	0	78
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	124	1134	33	42	818	10	0	0	48	0	0	85
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	828			1166			1977	2311	583	1771	2322	414
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	828			1166			1977	2311	583	1771	2322	414
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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 %	84			93			100	100	90	100	100	86
cM capacity (veh/h)	799			595			26	29	456	39	29	587

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	124	756	411	42	546	283	48	85
Volume Left	124	0	0	42	0	0	0	0
Volume Right	0	0	33	0	0	10	48	85
cSH	799	1700	1700	595	1700	1700	456	587
Volume to Capacity	0.16	0.44	0.24	0.07	0.32	0.17	0.10	0.14
Queue Length 95th (ft)	14	0	0	6	0	0	9	13
Control Delay (s)	10.3	0.0	0.0	11.5	0.0	0.0	13.8	12.2
Lane LOS	B			B			B	B
Approach Delay (s)	1.0			0.6			13.8	12.2
Approach LOS							B	B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	43	0	149	0	287	0	0	389	83	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	0	162	0	312	0	0	423	90	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	780	825	312	513			312			861	780
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	780	825	312	513			312			861	780
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	85	100	78	100			100			100	100
cM capacity (veh/h)	313	308	728	1052			1248			214	327

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	209	312	513
Volume Left	47	0	0
Volume Right	162	0	90
cSH	938	1700	1700
Volume to Capacity	0.22	0.18	0.30
Queue Length 95th (ft)	21	0	0
Control Delay (s)	13.0	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.0	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	23	0	157	0	452	0	0	348	136	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	0	171	0	491	0	0	378	148	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	943	1017	491	526			491			1029	943
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	943	1017	491	526			491			1029	943
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	90	100	70	100			100			100	100
cM capacity (veh/h)	242	237	577	1041			1072			149	262

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	196	491	526
Volume Left	25	0	0
Volume Right	171	0	148
cSH	662	1700	1700
Volume to Capacity	0.30	0.29	0.31
Queue Length 95th (ft)	31	0	0
Control Delay (s)	14.8	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.8	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (veh/h)	63	0	99	0	293	38	0	324	0	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	68	0	108	0	318	41	0	352	0	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	691	712	352	352			360			745	691
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	691	712	352	352			360			745	691
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	81	100	84	100			100			100	100
cM capacity (veh/h)	359	358	691	1207			1199			279	368

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	176	360	352
Volume Left	68	0	0
Volume Right	108	41	0
cSH	922	1700	1700
Volume to Capacity	0.19	0.21	0.21
Queue Length 95th (ft)	18	0	0
Control Delay (s)	13.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations											
Volume (veh/h)	86	0	92	0	468	62	0	197	0	0	0
Sign Control		Stop			Free			Free		Yield	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	0	100	0	509	67	0	214	0	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)			1								
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	757	790	214	214			576			807	757
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	757	790	214	214			576			807	757
tC, single (s)	7.1	6.5	6.2	4.1			4.1			7.1	6.5
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	71	100	88	100			100			100	100
cM capacity (veh/h)	324	322	826	1356			997			264	337

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	193	576	214
Volume Left	93	0	0
Volume Right	100	67	0
cSH	572	1700	1700
Volume to Capacity	0.34	0.34	0.13
Queue Length 95th (ft)	37	0	0
Control Delay (s)	14.5	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.5	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	103	593	6	9	889	12	6	13	9	10	11	107
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	112	645	7	10	966	13	7	14	10	11	12	116
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	979			651			1980	1871	648	1878	1867	973
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	979			651			1980	1871	648	1878	1867	973
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 %	84			99			69	76	98	72	80	62
cM capacity (veh/h)	705			935			21	60	470	38	60	306

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	112	651	10	979	30	139
Volume Left	112	0	10	0	7	11
Volume Right	0	7	0	13	10	116
cSH	705	1700	935	1700	54	161
Volume to Capacity	0.16	0.38	0.01	0.58	0.56	0.86
Queue Length 95th (ft)	14	0	1	0	55	149
Control Delay (s)	11.1	0.0	8.9	0.0	136.4	94.4
Lane LOS	B		A		F	F
Approach Delay (s)	1.6		0.1		136.4	94.4
Approach LOS					F	F

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	1063	14	5	828	1	6	3	2	4	3	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	1155	15	5	900	1	7	3	2	4	3	23
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	901			1171			2181	2158	1163	2153	2165	901
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	901			1171			2181	2158	1163	2153	2165	901
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			76	93	99	86	93	93
cM capacity (veh/h)	754			597			28	45	237	31	44	337

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	41	1171	5	901	12	30
Volume Left	41	0	5	0	7	4
Volume Right	0	15	0	1	2	23
cSH	754	1700	597	1700	38	108
Volume to Capacity	0.05	0.69	0.01	0.53	0.32	0.28
Queue Length 95th (ft)	4	0	1	0	26	27
Control Delay (s)	10.0	0.0	11.1	0.0	139.9	51.0
Lane LOS	B		B		F	F
Approach Delay (s)	0.3		0.1		139.9	51.0
Approach LOS					F	F

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	580	4	4	849	4	6	5	6	4	9	67
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	630	4	4	923	4	7	5	7	4	10	73
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	927			635			1709	1636	633	1641	1636	925
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	927			635			1709	1636	633	1641	1636	925
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			100			87	94	99	94	90	78
cM capacity (veh/h)	737			948			49	96	480	73	96	326

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	34	635	4	927	18	87
Volume Left	34	0	4	0	7	4
Volume Right	0	4	0	4	7	73
cSH	737	1700	948	1700	91	226
Volume to Capacity	0.05	0.37	0.00	0.55	0.20	0.39
Queue Length 95th (ft)	4	0	0	0	18	43
Control Delay (s)	10.1	0.0	8.8	0.0	54.2	30.6
Lane LOS	B		A		F	D
Approach Delay (s)	0.5		0.0		54.2	30.6
Approach LOS					F	D

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	1003	10	3	739	11	0	11	4	2	3	54
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	1090	11	3	803	12	0	12	4	2	3	59
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	815			1101			2205	2157	1096	2155	2156	809
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	815			1101			2205	2157	1096	2155	2156	809
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 %	85			99			100	70	98	91	92	85
cM capacity (veh/h)	812			634			22	40	260	23	41	380

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	120	1101	3	815	16	64
Volume Left	120	0	3	0	0	2
Volume Right	0	11	0	12	4	59
cSH	812	1700	634	1700	52	195
Volume to Capacity	0.15	0.65	0.01	0.48	0.31	0.33
Queue Length 95th (ft)	13	0	0	0	27	34
Control Delay (s)	10.2	0.0	10.7	0.0	102.6	32.2
Lane LOS	B		B		F	D
Approach Delay (s)	1.0		0.0		102.6	32.2
Approach LOS					F	D

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	72.1%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	4	563	4	5	838	4	5	3	3	2	8	19
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	612	4	5	911	4	5	3	3	2	9	21
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	915			616			1572	1549	614	1552	1549	913
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	915			616			1572	1549	614	1552	1549	913
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 %	99			99			93	97	99	98	92	94
cM capacity (veh/h)	745			964			78	113	492	89	113	331

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	621	921	12	32
Volume Left	4	5	5	2
Volume Right	4	4	3	21
cSH	745	964	114	192
Volume to Capacity	0.01	0.01	0.11	0.16
Queue Length 95th (ft)	0	0	9	14
Control Delay (s)	0.2	0.2	40.3	27.4
Lane LOS	A	A	E	D
Approach Delay (s)	0.2	0.2	40.3	27.4
Approach LOS			E	D

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	23	955	9	2	726	9	1	8	2	3	6	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	1038	10	2	789	10	1	9	2	3	7	18
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	799			1048			1913	1896	1043	1898	1896	794
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	799			1048			1913	1896	1043	1898	1896	794
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	87	99	93	90	95
cM capacity (veh/h)	824			664			44	67	279	46	67	388

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1073	801	12	28
Volume Left	25	2	1	3
Volume Right	10	10	2	18
cSH	824	664	74	131
Volume to Capacity	0.03	0.00	0.16	0.22
Queue Length 95th (ft)	2	0	14	19
Control Delay (s)	1.0	0.1	62.9	39.9
Lane LOS	A	A	F	E
Approach Delay (s)	1.0	0.1	62.9	39.9
Approach LOS			F	E

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Volume (veh/h)	15	24	71	55	13	22	70	250	183	19	510	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	26	77	60	14	24	76	272	199	21	554	16
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	1059	1227	562	1132	1135	371	571			471		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1059	1227	562	1132	1135	371	571			471		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	90	84	85	52	92	96	92			98		
cM capacity (veh/h)	171	162	526	125	183	675	1002			1091		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	120	98	76	471	21	571
Volume Left	16	60	76	0	21	0
Volume Right	77	24	0	199	0	16
cSH	296	166	1002	1700	1091	1700
Volume to Capacity	0.40	0.59	0.08	0.28	0.02	0.34
Queue Length 95th (ft)	47	79	6	0	1	0
Control Delay (s)	25.1	53.8	8.9	0.0	8.4	0.0
Lane LOS	D	F	A		A	
Approach Delay (s)	25.1	53.8	1.2		0.3	
Approach LOS	D	F				

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	53.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Volume (veh/h)	28	13	77	168	27	42	104	508	60	14	254	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	14	84	183	29	46	113	552	65	15	276	45
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	1167	1172	298	1124	1162	585	321			617		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1167	1172	298	1124	1162	585	321			617		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	76	92	89	0	83	91	91			98		
cM capacity (veh/h)	125	172	741	140	174	511	1239			963		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	128	258	113	617	15	321
Volume Left	30	183	113	0	15	0
Volume Right	84	46	0	65	0	45
cSH	292	165	1239	1700	963	1700
Volume to Capacity	0.44	1.57	0.09	0.36	0.02	0.19
Queue Length 95th (ft)	53	431	8	0	1	0
Control Delay (s)	26.7	332.1	8.2	0.0	8.8	0.0
Lane LQS	D	F	A		A	
Approach Delay (s)	26.7	332.1	1.3		0.4	
Approach LQS	D	F				

Intersection Summary				
Average Delay	62.0			
Intersection Capacity Utilization	63.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	166	63	83	75	30	42	193	47	125	342	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1786		1770	1783		1770	1808		1770	1860	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1786		1770	1783		1770	1808		1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	180	68	90	82	33	46	210	51	136	372	4
RTOR Reduction (vph)	0	16	0	0	15	0	0	10	0	0	1	0
Lane Group Flow (vph)	5	232	0	90	100	0	46	251	0	136	375	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	1.0	15.0		6.9	20.9		4.2	17.3		8.2	21.3	
Effective Green, g (s)	1.0	15.0		6.9	20.9		4.2	17.3		8.2	21.3	
Actuated g/C Ratio	0.02	0.24		0.11	0.33		0.07	0.27		0.13	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	28	423		193	588		117	493		229	625	
v/s Ratio Prot	0.00	c0.13		c0.05	0.06		0.03	0.14		c0.08	c0.20	
v/s Ratio Perm												
v/c Ratio	0.18	0.55		0.47	0.17		0.39	0.51		0.59	0.60	
Uniform Delay, d1	30.8	21.2		26.5	15.1		28.4	19.5		26.0	17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	1.5		1.8	0.1		2.2	0.8		4.1	1.6	
Delay (s)	33.8	22.7		28.3	15.2		30.6	20.3		30.1	19.1	
Level of Service	C	C		C	B		C	C		C	B	
Approach Delay (s)		22.9			21.0			21.8			22.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	79	40	73	93	47	118	408	56	40	198	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1770		1770	1769		1770	1829		1770	1858	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1770		1770	1769		1770	1829		1770	1858	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	86	43	79	101	51	128	443	61	43	215	4
RTOR Reduction (vph)	0	24	0	0	22	0	0	5	0	0	1	0
Lane Group Flow (vph)	4	105	0	79	130	0	128	499	0	43	218	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	0.9	8.4		4.5	12.0		7.5	23.7		2.5	18.7	
Effective Green, g (s)	0.9	8.4		4.5	12.0		7.5	23.7		2.5	18.7	
Actuated g/C Ratio	0.02	0.15		0.08	0.22		0.14	0.43		0.05	0.34	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	29	270		145	385		241	787		80	631	
v/s Ratio Prot	0.00	0.06		c0.04	c0.07		c0.07	c0.27		0.02	0.12	
v/s Ratio Perm												
v/c Ratio	0.14	0.39		0.54	0.34		0.53	0.63		0.54	0.35	
Uniform Delay, d1	26.7	21.0		24.3	18.2		22.2	12.3		25.7	13.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.9		4.1	0.5		2.2	1.7		6.8	0.3	
Delay (s)	28.9	22.0		28.5	18.7		24.4	14.0		32.5	14.0	
Level of Service	C	C		C	B		C	B		C	B	
Approach Delay (s)		22.2			22.0			16.1			17.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	55.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

BAKERSFIELD CONSTRUCTION CONDITIONS SYNCHRO OUTPUT

HCM Signalized Intersection Capacity Analysis
1: SR-58 EB Off Ramp & S Union Ave

11/10/2010

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1308	381	0	2407	1461	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2		4.9	4.9	
Lane Util. Factor	1.00	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	0.97	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		5085	4926	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		5085	4926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1422	414	0	2616	1588	418
RTOR Reduction (vph)	0	22	0	0	63	0
Lane Group Flow (vph)	1422	392	0	2616	1943	0
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	20.8	20.8		45.1	45.1	
Effective Green, g (s)	20.8	20.8		45.1	45.1	
Actuated g/C Ratio	0.28	0.28		0.60	0.60	
Clearance Time (s)	4.2	4.2		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		4.0	4.0	
Lane Grp Cap (vph)	491	439		3058	2962	
v/s Ratio Prot	c0.80			c0.51	0.39	
v/s Ratio Perm		0.25				
v/c Ratio	2.90	0.89		0.86	0.66	
Uniform Delay, d1	27.1	26.0		12.3	9.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	858.8	19.8		2.6	0.6	
Delay (s)	885.9	45.8		14.9	10.4	
Level of Service	F	D		B	B	
Approach Delay (s)	696.5			14.9	10.4	
Approach LOS	F			B	B	

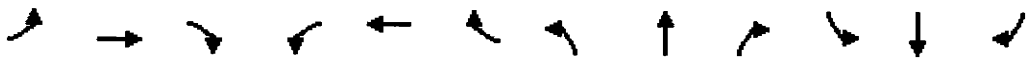
Intersection Summary			
HCM Average Control Delay	207.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	126.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: SR-58 EB Off Ramp & S Union Ave

11/10/2010

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	367	174	0	1210	1231	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2		4.9	4.9	
Lane Util. Factor	1.00	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		5085	4975	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		5085	4975	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	399	189	0	1315	1338	226
RTOR Reduction (vph)	0	40	0	0	32	0
Lane Group Flow (vph)	399	149	0	1315	1532	0
Turn Type		Perm				
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	18.3	18.3		38.6	38.6	
Effective Green, g (s)	18.3	18.3		38.6	38.6	
Actuated g/C Ratio	0.28	0.28		0.58	0.58	
Clearance Time (s)	4.2	4.2		4.9	4.9	
Vehicle Extension (s)	3.0	3.0		4.0	4.0	
Lane Grp Cap (vph)	491	439		2974	2910	
v/s Ratio Prot	c0.23			0.26	c0.31	
v/s Ratio Perm		0.09				
v/c Ratio	0.81	0.34		0.44	0.53	
Uniform Delay, d1	22.3	19.0		7.7	8.2	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.9	0.5		0.1	0.2	
Delay (s)	32.2	19.5		7.8	8.4	
Level of Service	C	B		A	A	
Approach Delay (s)	28.1			7.8	8.4	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	9.1
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	597	2	472	0	0	0	0	294	55	143	394	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.87						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.99						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1526						3539	1583	1770	3539	
Flt Permitted	0.95	0.99						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1526						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	649	2	513	0	0	0	0	320	60	155	428	0
RTOR Reduction (vph)	0	251	0	0	0	0	0	0	47	0	0	0
Lane Group Flow (vph)	584	329	0	0	0	0	0	320	13	155	428	0
Turn Type	Split								Perm	Prot		
Protected Phases	8	8						6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	25.6	25.6						13.2	13.2	9.8	26.7	
Effective Green, g (s)	25.6	25.6						13.2	13.2	9.8	26.7	
Actuated g/C Ratio	0.41	0.41						0.21	0.21	0.16	0.43	
Clearance Time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Vehicle Extension (s)	3.8	3.8						4.5	4.5	2.0	4.5	
Lane Grp Cap (vph)	692	628						751	336	279	1519	
v/s Ratio Prot	c0.35	0.22						c0.09		c0.09	0.12	
v/s Ratio Perm									0.01			
v/c Ratio	0.84	0.52						0.43	0.04	0.56	0.28	
Uniform Delay, d1	16.5	13.7						21.2	19.5	24.2	11.5	
Progression Factor	1.00	1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.5	1.0						0.7	0.1	1.4	0.2	
Delay (s)	26.0	14.7						21.9	19.5	25.6	11.7	
Level of Service	C	B						C	B	C	B	
Approach Delay (s)		20.4			0.0			21.5			15.4	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: SR-58 Off Ramp & MT Vernon Ave

11/10/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	659	3	78	0	0	0	0	306	74	167	75	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.97						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1649						3539	1583	1770	3539	
Flt Permitted	0.95	0.96						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1649						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	716	3	85	0	0	0	0	333	80	182	82	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	62	0	0	0
Lane Group Flow (vph)	408	387	0	0	0	0	0	333	18	182	82	0
Turn Type	Split								Perm	Prot		
Protected Phases	8	8						6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	22.5	22.5						13.9	13.9	10.9	28.5	
Effective Green, g (s)	22.5	22.5						13.9	13.9	10.9	28.5	
Actuated g/C Ratio	0.37	0.37						0.23	0.23	0.18	0.47	
Clearance Time (s)	4.6	4.6						5.3	5.3	3.7	5.3	
Vehicle Extension (s)	3.8	3.8						4.5	4.5	2.0	4.5	
Lane Grp Cap (vph)	621	609						808	361	317	1656	
v/s Ratio Prot	c0.24	0.23						c0.09		c0.10	0.02	
v/s Ratio Perm									0.01			
v/c Ratio	0.66	0.63						0.41	0.05	0.57	0.05	
Uniform Delay, d1	16.0	15.8						20.0	18.3	22.9	8.8	
Progression Factor	1.00	1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	2.4						0.6	0.1	1.6	0.0	
Delay (s)	18.7	18.2						20.6	18.4	24.4	8.8	
Level of Service	B	B						C	B	C	A	
Approach Delay (s)		18.4			0.0			20.2			19.6	
Approach LOS		B			A			C			B	

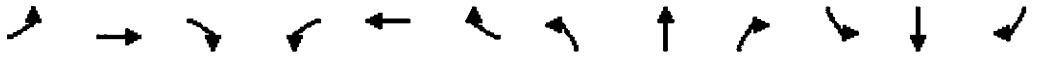
Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	13.6
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	254	185	114	202	71	136	448	188	39	232	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3402		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3402		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	276	201	124	220	77	148	487	204	42	252	127
RTOR Reduction (vph)	0	0	165	0	26	0	0	0	143	0	0	106
Lane Group Flow (vph)	114	276	36	124	271	0	148	487	61	42	252	21
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	7.2	10.5	10.5	9.6	12.9		11.6	17.8	17.8	3.4	9.6	9.6
Effective Green, g (s)	7.2	10.5	10.5	9.6	12.9		11.6	17.8	17.8	3.4	9.6	9.6
Actuated g/C Ratio	0.12	0.18	0.18	0.16	0.22		0.20	0.30	0.30	0.06	0.16	0.16
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	1.5	2.0	2.0	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	215	627	280	287	740		346	1062	475	101	573	256
v/s Ratio Prot	0.06	c0.08		c0.07	c0.08		c0.08	c0.14		0.02	0.07	
v/s Ratio Perm			0.02						0.04			0.01
v/c Ratio	0.53	0.44	0.13	0.43	0.37		0.43	0.46	0.13	0.42	0.44	0.08
Uniform Delay, d1	24.5	21.8	20.5	22.4	19.7		20.9	16.8	15.1	27.0	22.4	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	0.1	0.4	0.1		0.3	0.1	0.0	1.0	0.2	0.0
Delay (s)	25.7	22.0	20.6	22.8	19.8		21.2	17.0	15.2	28.0	22.6	21.2
Level of Service	C	C	C	C	B		C	B	B	C	C	C
Approach Delay (s)		22.2			20.7			17.3			22.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

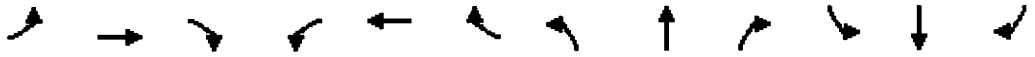
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	336	346	234	307	112	163	436	197	97	674	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3397		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3397		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	365	376	254	334	122	177	474	214	105	733	151
RTOR Reduction (vph)	0	0	311	0	28	0	0	0	171	0	0	90
Lane Group Flow (vph)	255	365	65	254	428	0	177	474	43	105	733	61
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	20.0	17.1	17.1	21.4	18.5		14.4	19.8	19.8	22.7	28.1	28.1
Effective Green, g (s)	20.0	17.1	17.1	21.4	18.5		14.4	19.8	19.8	22.7	28.1	28.1
Actuated g/C Ratio	0.20	0.17	0.17	0.22	0.19		0.15	0.20	0.20	0.23	0.28	0.28
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	1.5	2.0	2.0	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	358	611	273	383	635		257	708	317	406	1005	449
v/s Ratio Prot	c0.14	0.10		c0.14	0.13		c0.10	0.13		0.06	c0.21	
v/s Ratio Perm			0.04						0.03			0.04
v/c Ratio	0.71	0.60	0.24	0.66	0.67		0.69	0.67	0.14	0.26	0.73	0.14
Uniform Delay, d1	36.8	37.8	35.3	35.5	37.4		40.2	36.6	32.6	31.3	32.0	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	1.1	0.2	3.3	2.2		6.0	1.9	0.1	0.1	2.3	0.1
Delay (s)	42.3	38.8	35.5	38.8	39.7		46.2	38.4	32.6	31.4	34.3	26.5
Level of Service	D	D	D	D	D		D	D	C	C	C	C
Approach Delay (s)		38.5			39.4			38.6			32.8	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	340	100	57	270	28	92	573	85	31	233	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3490		1770	3471		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3490		1770	3471		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	370	109	62	293	30	100	623	92	34	253	87
RTOR Reduction (vph)	0	0	47	0	6	0	0	7	0	0	0	64
Lane Group Flow (vph)	179	370	62	62	317	0	100	708	0	34	253	23
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	11.8	19.5	19.5	5.6	13.3		6.8	20.8		3.3	17.3	17.3
Effective Green, g (s)	11.8	19.5	19.5	5.6	13.3		6.8	20.8		3.3	17.3	17.3
Actuated g/C Ratio	0.18	0.30	0.30	0.09	0.20		0.10	0.32		0.05	0.27	0.27
Clearance Time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	321	1062	475	152	714		185	1111		90	942	421
v/s Ratio Prot	c0.10	0.10		0.04	c0.09		c0.06	c0.20		0.02	0.07	
v/s Ratio Perm			0.04									0.01
v/c Ratio	0.56	0.35	0.13	0.41	0.44		0.54	0.64		0.38	0.27	0.06
Uniform Delay, d1	24.2	17.8	16.6	28.1	22.6		27.6	18.9		29.9	18.8	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.0	0.7	0.2		1.7	0.9		1.0	0.1	0.0
Delay (s)	25.4	17.9	16.6	28.8	22.8		29.3	19.8		30.8	18.9	17.8
Level of Service	C	B	B	C	C		C	B		C	B	B
Approach Delay (s)		19.7			23.7			20.9			19.7	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

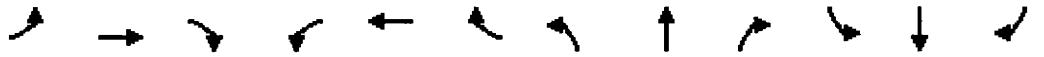


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	319	95	98	416	57	86	401	62	74	677	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3475		1770	3469		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3475		1770	3469		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	347	103	107	452	62	93	436	67	80	736	203
RTOR Reduction (vph)	0	0	49	0	7	0	0	8	0	0	0	135
Lane Group Flow (vph)	161	347	54	107	507	0	93	495	0	80	736	68
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	12.7	21.7	21.7	10.1	19.1		7.3	26.6		6.7	26.0	26.0
Effective Green, g (s)	12.7	21.7	21.7	10.1	19.1		7.3	26.6		6.7	26.0	26.0
Actuated g/C Ratio	0.16	0.27	0.27	0.12	0.24		0.09	0.33		0.08	0.32	0.32
Clearance Time (s)	3.5	4.4	4.4	3.5	4.4		3.5	4.4		3.5	4.4	4.4
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	278	949	425	221	820		160	1141		147	1137	509
v/s Ratio Prot	c0.09	c0.10		0.06	c0.15		c0.05	0.14		0.05	c0.21	
v/s Ratio Perm			0.03									0.04
v/c Ratio	0.58	0.37	0.13	0.48	0.62		0.58	0.43		0.54	0.65	0.13
Uniform Delay, d1	31.6	24.0	22.4	33.0	27.6		35.3	21.3		35.6	23.5	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	0.0	0.6	1.0		3.4	0.1		2.2	1.0	0.0
Delay (s)	33.4	24.1	22.5	33.6	28.6		38.8	21.4		37.8	24.5	19.5
Level of Service	C	C	C	C	C		D	C		D	C	B
Approach Delay (s)		26.3			29.5			24.1			24.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	20.2
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	241	33	48	256	43	43	139	61	36	78	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3475		1770	3462		1770	1863	1583	1770	1762	
Flt Permitted	0.95	1.00		0.95	1.00		0.75	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1770	3475		1770	3462		1406	1863	1583	1406	1762	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	262	36	52	278	47	47	151	66	39	85	48
RTOR Reduction (vph)	0	9	0	0	12	0	0	0	55	0	20	0
Lane Group Flow (vph)	73	289	0	52	313	0	47	151	11	39	113	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.9	11.1		1.8	10.0		5.3	5.3	5.3	5.3	5.3	
Effective Green, g (s)	2.9	11.1		1.8	10.0		5.3	5.3	5.3	5.3	5.3	
Actuated g/C Ratio	0.09	0.34		0.06	0.31		0.16	0.16	0.16	0.16	0.16	
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	159	1198		99	1075		231	307	261	231	290	
v/s Ratio Prot	c0.04	0.08		0.03	c0.09			c0.08			0.06	
v/s Ratio Perm							0.03		0.01	0.03		
v/c Ratio	0.46	0.24		0.53	0.29		0.20	0.49	0.04	0.17	0.39	
Uniform Delay, d1	13.9	7.5		14.8	8.4		11.6	12.2	11.3	11.6	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.0		2.3	0.1		0.2	0.5	0.0	0.1	0.3	
Delay (s)	14.7	7.6		17.1	8.5		11.8	12.7	11.3	11.7	12.3	
Level of Service	B	A		B	A		B	B	B	B	B	
Approach Delay (s)		9.0			9.7			12.2			12.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	32.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

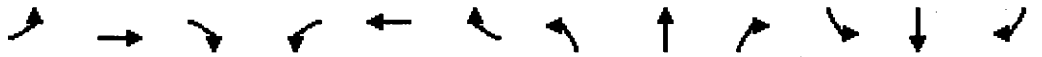


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	381	55	84	446	47	30	121	78	38	186	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3472		1770	3489		1770	1863	1583	1770	1814	
Flt Permitted	0.95	1.00		0.95	1.00		0.60	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	1770	3472		1770	3489		1124	1863	1583	1253	1814	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	414	60	91	485	51	33	132	85	41	202	43
RTOR Reduction (vph)	0	10	0	0	7	0	0	0	65	0	7	0
Lane Group Flow (vph)	33	464	0	91	529	0	33	132	20	41	238	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	1.8	13.1		5.0	16.3		10.1	10.1	10.1	10.1	10.1	
Effective Green, g (s)	1.8	13.1		5.0	16.3		10.1	10.1	10.1	10.1	10.1	
Actuated g/C Ratio	0.04	0.31		0.12	0.39		0.24	0.24	0.24	0.24	0.24	
Clearance Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	75	1078		210	1348		269	446	379	300	434	
v/s Ratio Prot	0.02	0.13		c0.05	c0.15			0.07			c0.13	
v/s Ratio Perm							0.03		0.01	0.03		
v/c Ratio	0.44	0.43		0.43	0.39		0.12	0.30	0.05	0.14	0.55	
Uniform Delay, d1	19.7	11.6		17.3	9.4		12.6	13.1	12.4	12.6	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.1		0.5	0.1		0.1	0.1	0.0	0.1	0.8	
Delay (s)	21.2	11.7		17.8	9.4		12.7	13.3	12.4	12.7	14.8	
Level of Service	C	B		B	A		B	B	B	B	B	
Approach Delay (s)		12.3			10.7			12.9			14.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

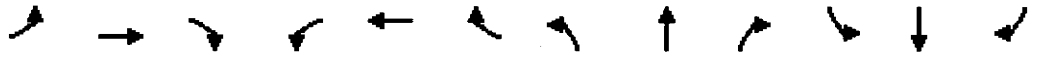
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	119	71	280	244	317	107	1348	211	103	841	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4982		1770	5030	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4982		1770	5030	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	129	77	304	265	345	116	1465	229	112	914	71
RTOR Reduction (vph)	0	0	68	0	0	266	0	13	0	0	6	0
Lane Group Flow (vph)	129	129	9	304	265	79	116	1681	0	112	979	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	11.7	11.9	11.9	22.0	22.2	22.2	11.0	35.6		10.8	35.4	
Effective Green, g (s)	11.7	11.9	11.9	22.0	22.2	22.2	11.0	35.6		10.8	35.4	
Actuated g/C Ratio	0.12	0.12	0.12	0.23	0.23	0.23	0.11	0.37		0.11	0.36	
Clearance Time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Vehicle Extension (s)	2.0	5.4	5.4	2.0	5.3	5.3	2.0	4.5		2.0	5.2	
Lane Grp Cap (vph)	212	432	193	399	806	360	200	1819		196	1826	
v/s Ratio Prot	0.07	0.04		c0.17	c0.07		c0.07	c0.34		0.06	0.19	
v/s Ratio Perm			0.01			0.05						
v/c Ratio	0.61	0.30	0.05	0.76	0.33	0.22	0.58	0.92		0.57	0.54	
Uniform Delay, d1	40.7	39.0	37.8	35.3	31.4	30.6	41.1	29.7		41.2	24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.9	0.3	7.6	0.6	0.7	2.5	8.7		2.5	0.6	
Delay (s)	44.1	39.9	38.1	42.9	32.0	31.3	43.6	38.3		43.6	25.1	
Level of Service	D	D	D	D	C	C	D	D		D	C	
Approach Delay (s)		41.1			35.3			38.7			27.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	7.4
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



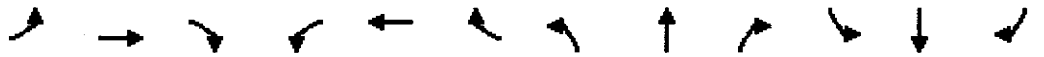
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	213	149	261	308	246	121	947	292	112	1272	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4906		1770	5040	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4906		1770	5040	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	232	162	284	335	267	132	1029	317	122	1383	87
RTOR Reduction (vph)	0	0	137	0	0	204	0	36	0	0	5	0
Lane Group Flow (vph)	137	232	25	284	335	63	132	1310	0	122	1465	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.5	15.5	15.5	20.9	23.9	23.9	12.2	36.2		11.6	35.6	
Effective Green, g (s)	12.5	15.5	15.5	20.9	23.9	23.9	12.2	36.2		11.6	35.6	
Actuated g/C Ratio	0.12	0.15	0.15	0.21	0.24	0.24	0.12	0.36		0.11	0.35	
Clearance Time (s)	3.7	4.9	4.9	3.7	4.9	4.9	3.7	4.9		3.7	4.9	
Vehicle Extension (s)	2.0	5.4	5.4	2.0	5.3	5.3	2.0	4.5		2.0	5.2	
Lane Grp Cap (vph)	218	541	242	365	834	373	213	1751		202	1769	
v/s Ratio Prot	0.08	0.07		c0.16	c0.09		c0.07	0.27		0.07	c0.29	
v/s Ratio Perm			0.02			0.04						
v/c Ratio	0.63	0.43	0.10	0.78	0.40	0.17	0.62	0.75		0.60	0.83	
Uniform Delay, d1	42.2	38.9	37.0	38.1	32.7	30.8	42.4	28.6		42.7	30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.0	1.3	0.4	9.2	0.7	0.5	3.7	2.0		3.5	3.8	
Delay (s)	46.3	40.2	37.4	47.2	33.4	31.3	46.1	30.6		46.2	33.9	
Level of Service	D	D	D	D	C	C	D	C		D	C	
Approach Delay (s)		40.9			37.2			32.0			34.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	35.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	12.3
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	373	34	70	302	4	496	24	13	2	44	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.95			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3533		1770	1765			1751	
Flt Permitted	0.55	1.00	1.00	0.51	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1027	3539	1583	945	3533		1770	1765			1751	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	405	37	76	328	4	539	26	14	2	48	39
RTOR Reduction (vph)	0	0	28	0	1	0	0	8	0	0	35	0
Lane Group Flow (vph)	23	405	9	76	331	0	539	32	0	0	54	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		2			6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)	15.5	15.5	15.5	15.5	15.5		25.6	25.6			5.5	
Effective Green, g (s)	15.5	15.5	15.5	15.5	15.5		25.6	25.6			5.5	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25		0.42	0.42			0.09	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			2.0	
Lane Grp Cap (vph)	261	901	403	241	899		744	742			158	
v/s Ratio Prot		c0.11			0.09		c0.30	0.02			c0.03	
v/s Ratio Perm	0.02		0.01	0.08								
v/c Ratio	0.09	0.45	0.02	0.32	0.37		0.72	0.04			0.34	
Uniform Delay, d1	17.3	19.1	17.0	18.4	18.7		14.7	10.4			26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.2	0.5	0.0	1.0	0.4		3.8	0.0			0.5	
Delay (s)	17.5	19.6	17.1	19.4	19.0		18.5	10.5			26.5	
Level of Service	B	B	B	B	B		B	B			C	
Approach Delay (s)		19.3			19.1			17.9			26.5	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	14.3
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	504	45	85	440	4	308	32	23	3	59	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3535		1770	1746			1734	
Flt Permitted	0.46	1.00	1.00	0.41	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	862	3539	1583	761	3535		1770	1746			1734	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	548	49	92	478	4	335	35	25	3	64	68
RTOR Reduction (vph)	0	0	33	0	1	0	0	17	0	0	47	0
Lane Group Flow (vph)	71	548	16	92	481	0	335	43	0	0	88	0
Turn Type	Perm		Perm	Perm			Split			Split		
Protected Phases		2			6		8	8		7	7	
Permitted Phases	2		2	6								
Actuated Green, G (s)	18.6	18.6	18.6	18.6	18.6		18.6	18.6			6.4	
Effective Green, g (s)	18.6	18.6	18.6	18.6	18.6		18.6	18.6			6.4	
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32		0.32	0.32			0.11	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9		4.2	4.2			4.2	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0			2.0	
Lane Grp Cap (vph)	277	1137	509	244	1136		569	561			192	
v/s Ratio Prot		c0.15			0.14		c0.19	0.02			c0.05	
v/s Ratio Perm	0.08		0.01	0.12								
v/c Ratio	0.26	0.48	0.03	0.38	0.42		0.59	0.08			0.46	
Uniform Delay, d1	14.5	15.8	13.5	15.2	15.4		16.4	13.7			24.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.7	0.4	0.0	1.3	0.3		1.8	0.1			0.6	
Delay (s)	15.2	16.2	13.5	16.5	15.8		18.3	13.8			24.8	
Level of Service	B	B	B	B	B		B	B			C	
Approach Delay (s)		15.9			15.9			17.6			24.8	
Approach LOS		B			B			B			C	

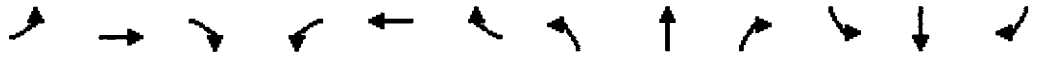
Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	14.3
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	104	75	212	150	49	65	624	160	50	645	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1745		1770	1794		1770	3431		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1745		1770	1794		1770	3431		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	113	82	230	163	53	71	678	174	54	701	104
RTOR Reduction (vph)	0	29	0	0	12	0	0	22	0	0	0	71
Lane Group Flow (vph)	86	166	0	230	204	0	71	830	0	54	701	33
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	5.9	13.1		11.7	18.9		5.5	24.2		3.8	22.5	22.5
Effective Green, g (s)	5.9	13.1		11.7	18.9		5.5	24.2		3.8	22.5	22.5
Actuated g/C Ratio	0.08	0.18		0.16	0.26		0.08	0.34		0.05	0.32	0.32
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	1.0	2.0		1.5	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	146	320		290	475		136	1163		94	1115	499
v/s Ratio Prot	0.05	c0.10		c0.13	0.11		c0.04	c0.24		0.03	0.20	
v/s Ratio Perm												0.02
v/c Ratio	0.59	0.52		0.79	0.43		0.52	0.71		0.57	0.63	0.07
Uniform Delay, d1	31.6	26.3		28.7	21.8		31.7	20.6		33.0	20.9	17.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	0.7		13.0	0.2		1.7	1.8		5.2	0.8	0.0
Delay (s)	35.5	27.0		41.6	22.0		33.4	22.3		38.2	21.7	17.1
Level of Service	D	C		D	C		C	C		D	C	B
Approach Delay (s)		29.6			32.1			23.2			22.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	13.3
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	151	226	75	115	191	43	84	704	138	61	654	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1793		1770	1811		1770	3452		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1793		1770	1811		1770	3452		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	164	246	82	125	208	47	91	765	150	66	711	207
RTOR Reduction (vph)	0	12	0	0	9	0	0	15	0	0	0	140
Lane Group Flow (vph)	164	316	0	125	246	0	91	900	0	66	711	67
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	10.9	19.5		9.4	18.0		6.3	26.5		5.6	25.8	25.8
Effective Green, g (s)	10.9	19.5		9.4	18.0		6.3	26.5		5.6	25.8	25.8
Actuated g/C Ratio	0.14	0.24		0.12	0.23		0.08	0.33		0.07	0.32	0.32
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	1.0	2.0		1.5	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	242	439		209	410		140	1149		125	1147	513
v/s Ratio Prot	c0.09	c0.18		0.07	0.14		c0.05	c0.26		0.04	0.20	
v/s Ratio Perm												0.04
v/c Ratio	0.68	0.72		0.60	0.60		0.65	0.78		0.53	0.62	0.13
Uniform Delay, d1	32.7	27.5		33.3	27.6		35.6	24.0		35.7	22.8	19.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.8	4.7		3.1	1.7		8.0	3.3		1.9	0.7	0.0
Delay (s)	38.5	32.2		36.4	29.3		43.5	27.2		37.6	23.5	19.0
Level of Service	D	C		D	C		D	C		D	C	B
Approach Delay (s)		34.3			31.6			28.7			23.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	120	17	58	92	38	23	666	48	30	271	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1829		1770	1781		1770	3504		1770	3495	
Flt Permitted	0.67	1.00		0.66	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1243	1829		1235	1781		1770	3504		1770	3495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	130	18	63	100	41	25	724	52	33	295	27
RTOR Reduction (vph)	0	5	0	0	14	0	0	4	0	0	5	0
Lane Group Flow (vph)	65	143	0	63	127	0	25	772	0	33	317	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	6.8	6.8		6.8	6.8		0.8	17.1		1.6	17.9	
Effective Green, g (s)	6.8	6.8		6.8	6.8		0.8	17.1		1.6	17.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.02	0.44		0.04	0.46	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	216	318		215	310		36	1532		72	1600	
v/s Ratio Prot		c0.08			0.07		0.01	c0.22		c0.02	0.09	
v/s Ratio Perm	0.05			0.05								
v/c Ratio	0.30	0.45		0.29	0.41		0.69	0.50		0.46	0.20	
Uniform Delay, d1	14.1	14.5		14.1	14.4		19.0	7.9		18.3	6.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.4		0.3	0.3		37.6	0.1		1.7	0.0	
Delay (s)	14.4	14.8		14.3	14.7		56.7	8.0		20.0	6.3	
Level of Service	B	B		B	B		E	A		C	A	
Approach Delay (s)		14.7			14.6			9.6			7.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	13.6
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	82	32	64	107	37	34	550	25	33	862	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1784		1770	1791		1770	3516		1770	3512	
Flt Permitted	0.66	1.00		0.68	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1226	1784		1262	1791		1770	3516		1770	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	89	35	70	116	40	37	598	27	36	937	50
RTOR Reduction (vph)	0	13	0	0	12	0	0	2	0	0	3	0
Lane Group Flow (vph)	36	111	0	70	144	0	37	623	0	36	984	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	9.9	9.9		9.9	9.9		1.9	19.8		1.8	19.7	
Effective Green, g (s)	9.9	9.9		9.9	9.9		1.9	19.8		1.8	19.7	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.04	0.44		0.04	0.44	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	269	392		277	393		75	1544		71	1534	
v/s Ratio Prot		0.06			c0.08		c0.02	0.18		0.02	c0.28	
v/s Ratio Perm	0.03			0.06								
v/c Ratio	0.13	0.28		0.25	0.37		0.49	0.40		0.51	0.64	
Uniform Delay, d1	14.2	14.6		14.5	14.9		21.1	8.6		21.2	9.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		0.2	0.2		1.9	0.1		2.1	0.7	
Delay (s)	14.2	14.8		14.7	15.2		23.0	8.7		23.3	10.6	
Level of Service	B	B		B	B		C	A		C	B	
Approach Delay (s)		14.7			15.0			9.5			11.1	
Approach LOS		B			B			A			B	

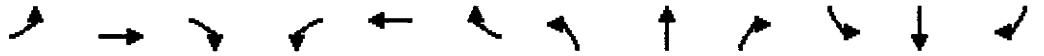
Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	13.6
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	63	23	35	71	31	19	231	24	27	253	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1837		1770	1839	
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	0.60	1.00		0.60	1.00	
Satd. Flow (perm)	1863	1863	1583	1863	1863	1583	1112	1837		1112	1839	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	68	25	38	77	34	21	251	26	29	275	26
RTOR Reduction (vph)	0	0	21	0	0	29	0	5	0	0	5	0
Lane Group Flow (vph)	25	68	4	38	77	5	21	272	0	29	296	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	2.9	2.9	2.9	2.9	2.9	2.9	6.7	6.7		6.7	6.7	
Effective Green, g (s)	2.9	2.9	2.9	2.9	2.9	2.9	6.7	6.7		6.7	6.7	
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.35	0.35		0.35	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	284	284	242	284	284	242	392	648		392	648	
v/s Ratio Prot		0.04			c0.04			0.15			c0.16	
v/s Ratio Perm	0.01		0.00	0.02		0.00	0.02			0.03		
v/c Ratio	0.09	0.24	0.02	0.13	0.27	0.02	0.05	0.42		0.07	0.46	
Uniform Delay, d1	6.9	7.1	6.8	7.0	7.1	6.8	4.1	4.7		4.1	4.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2	0.0	0.1	0.2	0.0	0.0	0.2		0.0	0.2	
Delay (s)	7.0	7.2	6.8	7.0	7.3	6.9	4.1	4.8		4.1	4.9	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		7.1			7.1			4.8			4.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	19.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	114	20	37	137	22	21	95	44	35	164	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1774		1770	1811	
Flt Permitted	0.82	1.00	1.00	0.82	1.00	1.00	0.71	1.00		0.71	1.00	
Satd. Flow (perm)	1521	1863	1583	1521	1863	1583	1331	1774		1331	1811	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	124	22	40	149	24	23	103	48	38	178	40
RTOR Reduction (vph)	0	0	17	0	0	18	0	27	0	0	13	0
Lane Group Flow (vph)	26	124	5	40	149	6	23	124	0	38	205	0
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	4.9	4.9	4.9	4.9	4.9	4.9	5.6	5.6		5.6	5.6	
Effective Green, g (s)	4.9	4.9	4.9	4.9	4.9	4.9	5.6	5.6		5.6	5.6	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.28	0.28		0.28	0.28	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.9	4.9		4.9	4.9	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	375	459	390	375	459	390	375	499		375	510	
v/s Ratio Prot		0.07			c0.08			0.07			c0.11	
v/s Ratio Perm	0.02		0.00	0.03		0.00	0.02			0.03		
v/c Ratio	0.07	0.27	0.01	0.11	0.32	0.02	0.06	0.25		0.10	0.40	
Uniform Delay, d1	5.8	6.1	5.7	5.8	6.1	5.7	5.2	5.5		5.3	5.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1		0.0	0.2	
Delay (s)	5.8	6.2	5.7	5.9	6.3	5.7	5.3	5.6		5.3	6.0	
Level of Service	A	A	A	A	A	A	A	A		A	A	
Approach Delay (s)		6.0			6.1			5.6			5.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	19.9	Sum of lost time (s)	9.4
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

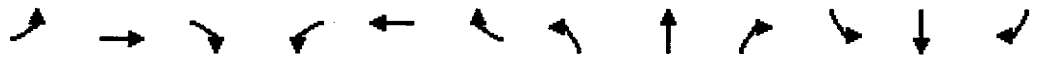


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	75	59	36	62	23	72	1709	42	43	1121	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.93			0.97		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1740			1788		1770	5067		1770	5018	
Flt Permitted	0.73	1.00			0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1356	1740			1538		1770	5067		1770	5018	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	82	64	39	67	25	78	1858	46	47	1218	117
RTOR Reduction (vph)	0	46	0	0	14	0	0	3	0	0	12	0
Lane Group Flow (vph)	65	100	0	0	117	0	78	1901	0	47	1323	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	6.3	6.3			6.6		4.1	28.9		2.5	27.3	
Effective Green, g (s)	6.3	6.3			6.6		4.1	28.9		2.5	27.3	
Actuated g/C Ratio	0.12	0.12			0.13		0.08	0.57		0.05	0.54	
Clearance Time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Vehicle Extension (s)	0.2	0.2			0.2		2.0	5.7		2.0	5.7	
Lane Grp Cap (vph)	168	216			200		143	2883		87	2697	
v/s Ratio Prot		0.06					c0.04	c0.38		0.03	0.26	
v/s Ratio Perm	0.05				c0.08							
v/c Ratio	0.39	0.47			0.59		0.55	0.66		0.54	0.49	
Uniform Delay, d1	20.5	20.7			20.8		22.5	7.6		23.6	7.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.6			2.8		2.3	0.8		3.6	0.4	
Delay (s)	21.0	21.3			23.6		24.7	8.4		27.2	7.7	
Level of Service	C	C			C		C	A		C	A	
Approach Delay (s)		21.2			23.6			9.0			8.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	7.9
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

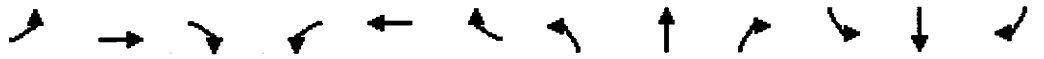
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	100	39	67	59	36	81	1212	40	94	1696	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91		1.00	0.91	
Frt	1.00	0.96			0.97		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1785			1770		1770	5061		1770	5052	
Flt Permitted	0.61	1.00			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1139	1785			1440		1770	5061		1770	5052	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	109	42	73	64	39	88	1317	43	102	1843	84
RTOR Reduction (vph)	0	22	0	0	16	0	0	4	0	0	5	0
Lane Group Flow (vph)	91	129	0	0	160	0	88	1356	0	102	1922	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	7.4	7.4			7.7		5.8	27.0		6.1	27.3	
Effective Green, g (s)	7.4	7.4			7.7		5.8	27.0		6.1	27.3	
Actuated g/C Ratio	0.14	0.14			0.14		0.11	0.50		0.11	0.51	
Clearance Time (s)	4.5	4.5			4.2		3.7	4.9		3.7	4.9	
Vehicle Extension (s)	0.2	0.2			0.2		2.0	5.7		2.0	5.7	
Lane Grp Cap (vph)	157	246			207		192	2549		201	2573	
v/s Ratio Prot		0.07					0.05	0.27		c0.06	c0.38	
v/s Ratio Perm	0.08				c0.11							
v/c Ratio	0.58	0.53			0.77		0.46	0.53		0.51	0.75	
Uniform Delay, d1	21.6	21.5			22.1		22.4	9.0		22.3	10.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	0.9			14.9		0.6	0.5		0.7	1.6	
Delay (s)	24.8	22.4			37.0		23.1	9.5		23.1	12.0	
Level of Service	C	C			D		C	A		C	B	
Approach Delay (s)		23.3			37.0			10.3			12.6	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	7.9
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



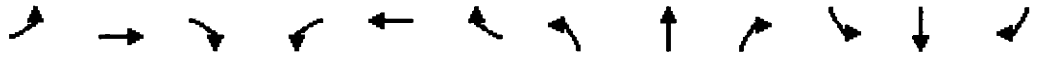
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	28	5	23	28	31	2	773	30	20	314	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.92		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1823		1770	1714		1770	3519		1770	3524	
Flt Permitted	1.00	1.00		1.00	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1863	1823		1863	1714		1770	3519		1770	3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	30	5	25	30	34	2	840	33	22	341	10
RTOR Reduction (vph)	0	5	0	0	31	0	0	2	0	0	2	0
Lane Group Flow (vph)	8	30	0	25	33	0	2	871	0	22	349	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	3.1	3.1		3.1	3.1		1.6	15.4		0.7	14.5	
Effective Green, g (s)	3.1	3.1		3.1	3.1		1.6	15.4		0.7	14.5	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.05	0.47		0.02	0.44	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	176	172		176	162		86	1652		38	1558	
v/s Ratio Prot		0.02			c0.02		0.00	c0.25		0.01	c0.10	
v/s Ratio Perm	0.00			0.01								
v/c Ratio	0.05	0.18		0.14	0.21		0.02	0.53		0.58	0.22	
Uniform Delay, d1	13.5	13.7		13.6	13.7		14.9	6.1		15.9	5.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.2		0.1	0.2		0.0	0.1		12.6	0.0	
Delay (s)	13.5	13.9		13.8	13.9		14.9	6.3		28.5	5.7	
Level of Service	B	B		B	B		B	A		C	A	
Approach Delay (s)		13.8			13.9			6.3			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	32.8	Sum of lost time (s)	14.6
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	42	20	63	30	31	16	665	30	22	782	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.92		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1772		1770	1721		1770	3516		1770	3532	
Flt Permitted	0.71	1.00		0.71	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1331	1772		1331	1721		1770	3516		1770	3532	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	46	22	68	33	34	17	723	33	24	850	12
RTOR Reduction (vph)	0	17	0	0	29	0	0	2	0	0	1	0
Lane Group Flow (vph)	13	51	0	68	38	0	17	754	0	24	861	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	5.6	5.6		5.6	5.6		0.7	15.7		0.7	15.7	
Effective Green, g (s)	5.6	5.6		5.6	5.6		0.7	15.7		0.7	15.7	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.02	0.44		0.02	0.44	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	209	279		209	271		35	1551		35	1558	
v/s Ratio Prot		0.03			0.02		c0.01	0.21		0.01	c0.24	
v/s Ratio Perm	0.01			c0.05								
v/c Ratio	0.06	0.18		0.33	0.14		0.49	0.49		0.69	0.55	
Uniform Delay, d1	12.8	13.0		13.3	12.9		17.3	7.1		17.3	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.3	0.1		3.8	0.1		36.1	0.2	
Delay (s)	12.8	13.1		13.7	13.0		21.1	7.2		53.5	7.6	
Level of Service	B	B		B	B		C	A		D	A	
Approach Delay (s)		13.1			13.3			7.5			8.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	35.6	Sum of lost time (s)	13.6
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	38	3	10	50	15	14	193	12	14	190	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	41	3	11	54	16	15	210	13	15	207	2

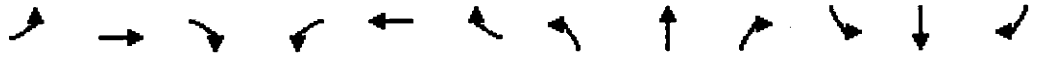
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	63	82	15	223	15	209
Volume Left (vph)	18	11	15	0	15	0
Volume Right (vph)	3	16	0	13	0	2
Hadj (s)	0.06	-0.06	0.53	-0.01	0.53	0.03
Departure Headway (s)	5.2	5.1	5.6	5.1	5.7	5.1
Degree Utilization, x	0.09	0.11	0.02	0.32	0.02	0.30
Capacity (veh/h)	625	644	614	682	610	675
Control Delay (s)	8.7	8.7	7.6	9.2	7.6	9.1
Approach Delay (s)	8.7	8.7	9.1		9.0	
Approach LOS	A	A	A		A	

Intersection Summary				
Delay	9.0			
HCM Level of Service	A			
Intersection Capacity Utilization	24.2%	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			Stop			Stop	
Volume (vph)	22	63	23	35	71	31	19	230	24	27	255	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	68	25	38	77	34	21	250	26	29	277	26

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	117	149	21	276	29	303
Volume Left (vph)	24	38	21	0	29	0
Volume Right (vph)	25	34	0	26	0	26
Hadj (s)	-0.05	-0.05	0.53	-0.03	0.53	-0.03
Departure Headway (s)	5.8	5.7	6.3	5.7	6.2	5.7
Degree Utilization, x	0.19	0.24	0.04	0.44	0.05	0.48
Capacity (veh/h)	548	561	545	603	549	610
Control Delay (s)	10.2	10.5	8.3	11.9	8.4	12.5
Approach Delay (s)	10.2	10.5	11.6		12.2	
Approach LOS	B	B	B		B	

Delay	11.5			
HCM Level of Service	B			
Intersection Capacity Utilization	39.2%	ICU Level of Service		A
Analysis Period (min)	15			

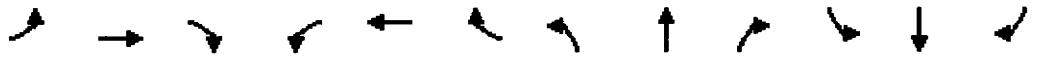


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	1238	63	127	1005	214	85	67	299	318	155	829
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	5.3		3.7	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	0.88	1.00	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5049		1770	5085	1583	1770	1863	2787	1770	1586	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5049		1770	5085	1583	1770	1863	2787	1770	1586	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1346	68	138	1092	233	92	73	325	346	168	901
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	275	0	85	378
Lane Group Flow (vph)	136	1408	0	138	1092	233	92	73	50	346	461	145
Turn Type	Prot			Prot		Free	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						Free			3			4
Actuated Green, G (s)	10.0	25.8		10.1	25.9	85.0	13.0	13.0	13.0	19.1	19.1	19.1
Effective Green, g (s)	10.0	25.8		10.1	25.9	85.0	13.0	13.0	13.0	19.1	19.1	19.1
Actuated g/C Ratio	0.12	0.30		0.12	0.30	1.00	0.15	0.15	0.15	0.22	0.22	0.22
Clearance Time (s)	3.7	5.3		3.7	5.3		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1		2.0	4.5		4.5	4.5	4.5	7.1	7.1	7.1
Lane Grp Cap (vph)	208	1533		210	1549	1583	271	285	426	398	356	338
v/s Ratio Prot	0.08	c0.28		0.08	c0.21		c0.05	0.04		0.20	c0.29	
v/s Ratio Perm						0.15			0.02			0.10
v/c Ratio	0.65	0.92		0.66	0.70	0.15	0.34	0.26	0.12	0.87	1.30	0.43
Uniform Delay, d1	35.8	28.6		35.8	26.2	0.0	32.2	31.7	31.0	31.7	32.9	28.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	9.3		5.6	1.7	0.2	1.3	0.8	0.2	20.8	152.7	3.2
Delay (s)	41.4	37.9		41.3	27.9	0.2	33.5	32.6	31.3	52.6	185.6	31.4
Level of Service	D	D		D	C	A	C	C	C	D	F	C
Approach Delay (s)		38.2			24.7			31.9			96.1	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM Average Control Delay	50.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	1568	118	206	1254	666	81	56	236	266	226	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	5.3		3.7	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	1.00	0.88	1.00	0.95	0.95
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5032		1770	5085	1583	1770	1863	2787	1770	1624	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5032		1770	5085	1583	1770	1863	2787	1770	1624	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	1704	128	224	1363	724	88	61	257	289	246	802
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	221	0	46	383
Lane Group Flow (vph)	316	1823	0	224	1363	724	88	61	36	289	497	122
Turn Type	Prot			Prot		Free	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						Free			3			4
Actuated Green, G (s)	12.3	25.7		12.3	25.7	86.1	12.1	12.1	12.1	19.0	19.0	19.0
Effective Green, g (s)	12.3	25.7		12.3	25.7	86.1	12.1	12.1	12.1	19.0	19.0	19.0
Actuated g/C Ratio	0.14	0.30		0.14	0.30	1.00	0.14	0.14	0.14	0.22	0.22	0.22
Clearance Time (s)	3.7	5.3		3.7	5.3		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.0	4.1		2.0	4.5		4.5	4.5	4.5	7.1	7.1	7.1
Lane Grp Cap (vph)	253	1502		253	1518	1583	249	262	392	391	358	332
v/s Ratio Prot	0.18	c0.36		0.13	c0.27		0.05	0.03		0.16	c0.31	
v/s Ratio Perm						c0.46			0.01			0.08
v/c Ratio	1.25	1.21		0.89	0.90	0.46	0.35	0.23	0.09	0.74	1.39	0.37
Uniform Delay, d1	36.9	30.2		36.2	28.9	0.0	33.5	32.9	32.2	31.2	33.6	28.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	140.5	102.5		27.9	7.7	1.0	1.5	0.8	0.2	10.9	191.2	2.5
Delay (s)	177.4	132.7		64.2	36.7	1.0	35.0	33.7	32.4	42.1	224.7	31.0
Level of Service	F	F		E	D	A	C	C	C	D	F	C
Approach Delay (s)		139.3			28.2			33.1			112.1	
Approach LOS		F			C			C			F	

Intersection Summary			
HCM Average Control Delay	85.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	9.3
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

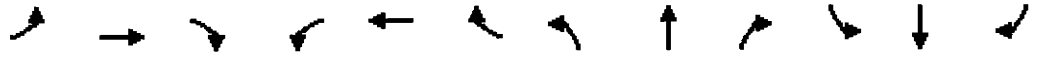


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1361	494	0	1100	13	524	17	732	19	0	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91			0.91	1.00	0.95	0.95	1.00	1.00		1.00
Frt	1.00	0.96			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	4882			5085	1583	1681	1690	1583	1770		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.83		1.00
Satd. Flow (perm)	1770	4882			5085	1583	1681	1690	1583	1552		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1479	537	0	1196	14	570	18	796	21	0	34
RTOR Reduction (vph)	0	43	0	0	0	4	0	0	253	0	0	32
Lane Group Flow (vph)	12	1973	0	0	1196	10	296	292	543	21	0	2
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases									3	4		4
Actuated Green, G (s)	1.2	58.3			53.0	53.0	25.5	25.5	25.5	4.8		4.8
Effective Green, g (s)	1.2	58.3			53.0	53.0	25.5	25.5	25.5	4.8		4.8
Actuated g/C Ratio	0.01	0.57			0.52	0.52	0.25	0.25	0.25	0.05		0.05
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	21	2796			2647	824	421	423	397	73		75
v/s Ratio Prot	0.01	c0.40			0.24	0.01	0.18	0.17				
v/s Ratio Perm									c0.34	c0.01		0.00
v/c Ratio	0.57	0.71			0.45	0.01	0.70	0.69	1.37	0.29		0.02
Uniform Delay, d1	50.0	15.6			15.3	11.8	34.7	34.6	38.2	46.8		46.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	21.2	1.1			0.2	0.0	6.6	6.1	181.4	0.8		0.0
Delay (s)	71.3	16.7			15.5	11.8	41.3	40.6	219.5	47.6		46.3
Level of Service	E	B			B	B	D	D	F	D		D
Approach Delay (s)		17.0			15.4			143.7			46.8	
Approach LOS		B			B			F			D	

Intersection Summary			
HCM Average Control Delay	54.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	101.8	Sum of lost time (s)	13.2
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

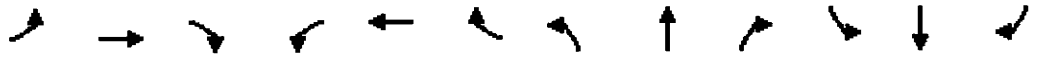
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1235	750	0	2017	34	329	10	366	20	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Lane Util. Factor	1.00	0.91			0.91	1.00	0.95	0.95	1.00	1.00		1.00
Frt	1.00	0.94			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	4797			5085	1583	1681	1690	1583	1770		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.65		1.00
Satd. Flow (perm)	1770	4797			5085	1583	1681	1690	1583	1202		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1342	815	0	2192	37	358	11	398	22	0	72
RTOR Reduction (vph)	0	70	0	0	0	6	0	0	268	0	0	67
Lane Group Flow (vph)	82	2087	0	0	2192	31	183	186	130	22	0	5
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	5	2			6	6	3	3				
Permitted Phases									3	4		4
Actuated Green, G (s)	7.5	56.6			45.0	45.0	20.3	20.3	20.3	6.2		6.2
Effective Green, g (s)	7.5	56.6			45.0	45.0	20.3	20.3	20.3	6.2		6.2
Actuated g/C Ratio	0.08	0.59			0.47	0.47	0.21	0.21	0.21	0.06		0.06
Clearance Time (s)	3.7	4.9			5.3	5.3	4.6	4.6	4.6	3.7		3.7
Vehicle Extension (s)	2.0	5.1			4.2	4.2	5.0	5.0	5.0	1.5		1.5
Lane Grp Cap (vph)	138	2819			2376	740	354	356	334	77		102
v/s Ratio Prot	0.05	c0.44			c0.43	0.02	0.11	c0.11				
v/s Ratio Perm									0.08	c0.02		0.00
v/c Ratio	0.59	0.74			0.92	0.04	0.52	0.52	0.39	0.29		0.05
Uniform Delay, d1	42.9	14.5			24.0	13.9	33.7	33.7	32.7	42.9		42.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	4.5	1.3			6.8	0.0	2.5	2.6	1.6	0.7		0.1
Delay (s)	47.4	15.8			30.8	14.0	36.2	36.3	34.2	43.7		42.3
Level of Service	D	B			C	B	D	D	C	D		D
Approach Delay (s)		17.0			30.5			35.2			42.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	18.5
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



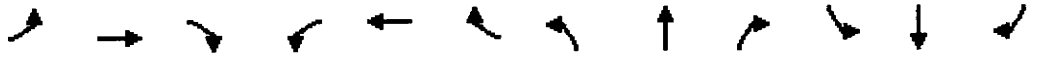
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	837	1121	127	54	574	129	250	530	84	98	230	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.94	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	4981		1770	3204	1441
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	4981		1770	3204	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	910	1218	138	59	624	140	272	576	91	107	250	323
RTOR Reduction (vph)	0	0	50	0	0	83	0	16	0	0	58	149
Lane Group Flow (vph)	910	1218	88	59	624	57	272	651	0	107	337	29
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	3	8		7	4		6	6		2	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	15.7	35.8	35.8	4.7	24.8	24.8	18.9	18.9		15.3	15.3	15.3
Effective Green, g (s)	15.7	35.8	35.8	4.7	24.8	24.8	18.9	18.9		15.3	15.3	15.3
Actuated g/C Ratio	0.17	0.38	0.38	0.05	0.26	0.26	0.20	0.20		0.16	0.16	0.16
Clearance Time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Vehicle Extension (s)	1.0	2.0	2.0	0.5	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	569	1336	598	170	1330	414	684	993		286	517	233
v/s Ratio Prot	c0.27	c0.34		0.02	c0.12		0.08	c0.13		0.06	c0.11	
v/s Ratio Perm			0.06			0.04						0.02
v/c Ratio	1.60	0.91	0.15	0.35	0.47	0.14	0.40	0.66		0.37	0.65	0.12
Uniform Delay, d1	39.6	28.0	19.4	43.6	29.5	26.8	33.0	35.0		35.5	37.3	34.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	277.9	9.4	0.0	0.4	0.1	0.1	0.1	1.2		0.3	2.3	0.1
Delay (s)	317.4	37.4	19.5	44.0	29.6	26.9	33.1	36.2		35.8	39.5	34.1
Level of Service	F	D	B	D	C	C	C	D		D	D	C
Approach Delay (s)		148.8			30.1			35.3			37.5	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	89.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	15.2
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	540	834	225	188	1061	114	293	417	61	147	647	676
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	4988		1770	3240	1441
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	4988		1770	3240	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	587	907	245	204	1153	124	318	453	66	160	703	735
RTOR Reduction (vph)	0	0	138	0	0	39	0	15	0	0	29	213
Lane Group Flow (vph)	587	907	107	204	1153	85	318	504	0	160	968	228
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	3	8		7	4		6	6		2	2	
Permitted Phases			8			4						2
Actuated Green, G (s)	15.4	35.2	35.2	13.3	33.1	33.1	18.0	18.0		34.8	34.8	34.8
Effective Green, g (s)	15.4	35.2	35.2	13.3	33.1	33.1	18.0	18.0		34.8	34.8	34.8
Actuated g/C Ratio	0.13	0.29	0.29	0.11	0.27	0.27	0.15	0.15		0.29	0.29	0.29
Clearance Time (s)	4.6	4.9	4.9	4.6	4.9	4.9	5.3	5.3		5.3	5.3	5.3
Vehicle Extension (s)	1.0	2.0	2.0	0.5	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	435	1026	459	376	1386	432	509	740		507	929	413
v/s Ratio Prot	c0.17	c0.26		0.06	c0.23		0.09	c0.10		0.09	c0.30	
v/s Ratio Perm			0.07			0.05						0.16
v/c Ratio	1.35	0.88	0.23	0.54	0.83	0.20	0.62	0.68		0.32	1.04	0.55
Uniform Delay, d1	53.0	41.2	32.8	51.2	41.5	33.9	48.5	49.0		34.0	43.3	36.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	171.9	8.9	0.1	0.9	4.2	0.1	1.7	2.1		0.1	41.2	0.9
Delay (s)	224.9	50.1	32.9	52.0	45.8	34.0	50.3	51.0		34.1	84.5	37.6
Level of Service	F	D	C	D	D	C	D	D		C	F	D
Approach Delay (s)		106.7			45.6			50.7			66.5	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM Average Control Delay	71.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	121.4	Sum of lost time (s)	15.2
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

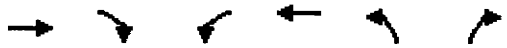


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	988	54	55	530	49	60	72	104	14	44	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3512		1770	5021		1770	1697		1770	1641	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3512		1770	5021		1770	1697		1770	1641	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	1074	59	60	576	53	65	78	113	15	48	185
RTOR Reduction (vph)	0	3	0	0	12	0	0	52	0	0	155	0
Lane Group Flow (vph)	338	1130	0	60	617	0	65	139	0	15	78	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	16.8	33.3		3.8	20.3		8.5	15.4		0.9	8.3	
Effective Green, g (s)	16.8	33.3		3.8	20.3		8.5	15.4		0.9	8.3	
Actuated g/C Ratio	0.23	0.46		0.05	0.28		0.12	0.21		0.01	0.12	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Vehicle Extension (s)	1.5	2.0		1.0	2.0		1.5	1.5		1.0	1.5	
Lane Grp Cap (vph)	415	1631		94	1422		210	364		22	190	
v/s Ratio Prot	c0.19	c0.32		0.03	0.12		0.04	c0.08		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.81	0.69		0.64	0.43		0.31	0.38		0.68	0.41	
Uniform Delay, d1	26.0	15.2		33.3	21.0		28.9	24.1		35.3	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.1	1.0		10.0	0.1		0.3	0.2		52.0	0.5	
Delay (s)	37.0	16.2		43.3	21.1		29.2	24.3		87.2	30.0	
Level of Service	D	B		D	C		C	C		F	C	
Approach Delay (s)		21.0			23.0			25.6			33.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	8.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

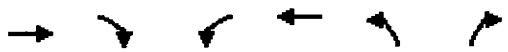
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	827	37	93	1259	11	20	12	62	3	27	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.87		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3517		1770	5079		1770	1629		1770	1670	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3517		1770	5079		1770	1629		1770	1670	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	899	40	101	1368	12	22	13	67	3	29	64
RTOR Reduction (vph)	0	3	0	0	1	0	0	59	0	0	58	0
Lane Group Flow (vph)	85	936	0	101	1379	0	22	21	0	3	35	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	5.5	24.5		5.7	24.7		2.8	6.3		0.8	4.8	
Effective Green, g (s)	5.5	24.5		5.7	24.7		2.8	6.3		0.8	4.8	
Actuated g/C Ratio	0.10	0.44		0.10	0.44		0.05	0.11		0.01	0.09	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	4.5		4.5	4.5	
Vehicle Extension (s)	1.5	2.0		1.0	2.0		1.5	1.5		1.0	1.5	
Lane Grp Cap (vph)	175	1550		181	2256		89	185		25	144	
v/s Ratio Prot	0.05	0.27		c0.06	c0.27		c0.01	c0.01		0.00	c0.02	
v/s Ratio Perm												
v/c Ratio	0.49	0.60		0.56	0.61		0.25	0.11		0.12	0.24	
Uniform Delay, d1	23.7	11.9		23.8	11.8		25.4	22.1		27.1	23.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.5		2.1	0.3		0.5	0.1		0.8	0.3	
Delay (s)	24.5	12.3		25.9	12.1		25.9	22.2		27.8	24.0	
Level of Service	C	B		C	B		C	C		C	C	
Approach Delay (s)		13.3			13.1			23.0			24.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1165	21	107	537	49	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		4.0	5.0	4.0	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	1.00		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	5072		1770	5085	1682	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	5072		1770	5085	1682	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1266	23	116	584	53	72
RTOR Reduction (vph)	1	0	0	0	52	0
Lane Group Flow (vph)	1288	0	116	584	73	0
Turn Type			Prot			
Protected Phases	2		1	6	4	
Permitted Phases						
Actuated Green, G (s)	33.6		6.4	44.0	5.8	
Effective Green, g (s)	33.6		6.4	44.0	5.8	
Actuated g/C Ratio	0.57		0.11	0.75	0.10	
Clearance Time (s)	5.0		4.0	5.0	4.0	
Vehicle Extension (s)	4.0		1.0	4.0	1.5	
Lane Grp Cap (vph)	2898		193	3805	166	
v/s Ratio Prot	c0.25		c0.07	0.11	c0.04	
v/s Ratio Perm						
v/c Ratio	0.44		0.60	0.15	0.44	
Uniform Delay, d1	7.2		25.0	2.1	25.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		3.6	0.0	0.7	
Delay (s)	7.4		28.6	2.1	25.6	
Level of Service	A		C	A	C	
Approach Delay (s)	7.4			6.5	25.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	828	74	75	1262	38	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		4.0	5.0	4.0	
Lane Util. Factor	0.91		1.00	0.91	1.00	
Frt	0.99		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	5023		1770	5085	1676	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	5023		1770	5085	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	900	80	82	1372	41	65
RTOR Reduction (vph)	7	0	0	0	58	0
Lane Group Flow (vph)	973	0	82	1372	48	0
Turn Type			Prot			
Protected Phases	2		1	6	4	
Permitted Phases						
Actuated Green, G (s)	23.4		5.0	32.4	5.0	
Effective Green, g (s)	23.4		5.0	32.4	5.0	
Actuated g/C Ratio	0.50		0.11	0.70	0.11	
Clearance Time (s)	5.0		4.0	5.0	4.0	
Vehicle Extension (s)	4.0		1.0	4.0	1.5	
Lane Grp Cap (vph)	2533		191	3551	181	
v/s Ratio Prot	0.19		0.05	c0.27	c0.03	
v/s Ratio Perm						
v/c Ratio	0.38		0.43	0.39	0.27	
Uniform Delay, d1	7.1		19.4	2.9	19.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1		0.6	0.1	0.3	
Delay (s)	7.2		19.9	3.0	19.3	
Level of Service	A		B	A	B	
Approach Delay (s)	7.2			3.9	19.3	
Approach LOS	A			A	B	

Intersection Summary				
HCM Average Control Delay	5.8	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.37			
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	38.4%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	981	66	48	508	34	98	512	125	88	241	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5037		1770	5037		1770	3435		1770	3366	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5037		1770	5037		1770	3435		1770	3366	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1066	72	52	552	37	107	557	136	96	262	127
RTOR Reduction (vph)	0	7	0	0	7	0	0	24	0	0	69	0
Lane Group Flow (vph)	129	1131	0	52	582	0	107	669	0	96	320	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	10.0	23.9		4.4	18.3		11.6	20.9		6.8	16.1	
Effective Green, g (s)	10.0	23.9		4.4	18.3		11.6	20.9		6.8	16.1	
Actuated g/C Ratio	0.14	0.32		0.06	0.25		0.16	0.28		0.09	0.22	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	240	1631		106	1249		278	973		163	734	
v/s Ratio Prot	0.07	c0.22		0.03	c0.12		0.06	c0.19		c0.05	0.10	
v/s Ratio Perm												
v/c Ratio	0.54	0.69		0.49	0.47		0.38	0.69		0.59	0.44	
Uniform Delay, d1	29.7	21.8		33.6	23.6		27.9	23.5		32.2	24.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	1.0		1.3	0.1		0.3	1.6		3.5	0.2	
Delay (s)	30.9	22.8		34.9	23.7		28.2	25.2		35.6	25.1	
Level of Service	C	C		C	C		C	C		D	C	
Approach Delay (s)		23.6			24.6			25.6			27.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	18.7
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	950	89	156	1032	73	84	537	125	95	632	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5020		1770	5035		1770	3439		1770	3453	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5020		1770	5035		1770	3439		1770	3453	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	1033	97	170	1122	79	91	584	136	103	687	133
RTOR Reduction (vph)	0	10	0	0	7	0	0	22	0	0	17	0
Lane Group Flow (vph)	183	1120	0	170	1194	0	91	698	0	103	803	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	11.8	22.5		11.0	21.7		9.1	26.6		7.3	24.8	
Effective Green, g (s)	11.8	22.5		11.0	21.7		9.1	26.6		7.3	24.8	
Actuated g/C Ratio	0.14	0.26		0.13	0.25		0.11	0.31		0.09	0.29	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.9		4.0	4.9	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	245	1326		229	1282		189	1074		152	1005	
v/s Ratio Prot	0.10	c0.22		0.10	c0.24		0.05	c0.20		0.06	c0.23	
v/s Ratio Perm												
v/c Ratio	0.75	0.84		0.74	0.93		0.48	0.65		0.68	0.80	
Uniform Delay, d1	35.3	29.7		35.7	31.0		35.8	25.3		37.8	27.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.3	4.9		10.8	12.0		0.7	1.0		9.0	4.2	
Delay (s)	45.6	34.6		46.5	43.0		36.5	26.3		46.9	32.1	
Level of Service	D	C		D	D		D	C		D	C	
Approach Delay (s)		36.1			43.4			27.5			33.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	9.8
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	387	730	49	69	395	63	86	536	163	81	212	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95		0.97	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3506		3433	4981		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3506		3433	4981		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	793	53	75	429	68	93	583	177	88	230	87
RTOR Reduction (vph)	0	3	0	0	17	0	0	0	66	0	0	73
Lane Group Flow (vph)	421	843	0	75	480	0	93	583	111	88	230	14
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases									4			8
Actuated Green, G (s)	19.5	29.5		4.5	14.5		15.1	21.3	21.3	7.0	13.2	13.2
Effective Green, g (s)	19.5	29.5		4.5	14.5		15.1	21.3	21.3	7.0	13.2	13.2
Actuated g/C Ratio	0.24	0.37		0.06	0.18		0.19	0.27	0.27	0.09	0.17	0.17
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	839	1296		194	905		335	945	423	155	585	262
v/s Ratio Prot	0.12	c0.24		0.02	c0.10		0.05	c0.16		c0.05	0.06	
v/s Ratio Perm									0.07			0.01
v/c Ratio	0.50	0.65		0.39	0.53		0.28	0.62	0.26	0.57	0.39	0.05
Uniform Delay, d1	26.0	20.9		36.3	29.6		27.7	25.7	23.1	34.9	29.7	28.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.9		0.5	0.3		0.2	0.8	0.1	2.8	0.2	0.0
Delay (s)	26.1	21.8		36.8	29.9		27.8	26.5	23.2	37.8	29.9	28.1
Level of Service	C	C		D	C		C	C	C	D	C	C
Approach Delay (s)		23.2			30.8			26.0			31.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	18.1
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	749	84	231	1012	97	81	491	149	71	422	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Lane Util. Factor	0.97	0.95		0.97	0.91		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3486		3433	5019		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3486		3433	5019		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	814	91	251	1100	105	88	534	162	77	459	123
RTOR Reduction (vph)	0	5	0	0	7	0	0	0	69	0	0	97
Lane Group Flow (vph)	337	900	0	251	1198	0	88	534	93	77	459	26
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases									4			8
Actuated Green, G (s)	14.3	34.9		11.6	32.2		8.9	21.5	21.5	6.9	19.5	19.5
Effective Green, g (s)	14.3	34.9		11.6	32.2		8.9	21.5	21.5	6.9	19.5	19.5
Actuated g/C Ratio	0.15	0.38		0.13	0.35		0.10	0.23	0.23	0.07	0.21	0.21
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.9	4.9	4.0	4.9	4.9
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	531	1317		431	1749		170	823	368	132	747	334
v/s Ratio Prot	0.10	c0.26		0.07	c0.24		c0.05	c0.15		0.04	0.13	
v/s Ratio Perm									0.06			0.02
v/c Ratio	0.63	0.68		0.58	0.68		0.52	0.65	0.25	0.58	0.61	0.08
Uniform Delay, d1	36.6	24.1		38.1	25.8		39.7	32.0	28.9	41.4	33.0	29.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.2		1.3	0.9		1.1	1.3	0.1	4.2	1.1	0.0
Delay (s)	38.4	25.3		39.4	26.7		40.8	33.4	29.0	45.5	34.1	29.3
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		28.9			28.9			33.3			34.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	92.4	Sum of lost time (s)	9.5
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	755	5	19	505	12	4	2	1	7	7	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	0.95
Frt	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.94	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5081		1770	5068		1770	1770		1770	1668	1504
Flt Permitted	0.95	1.00		0.95	1.00		1.00	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	5081		1770	5068		1863	1770		1863	1668	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	821	5	21	549	13	4	2	1	8	8	16
RTOR Reduction (vph)	0	1	0	0	2	0	0	1	0	0	5	10
Lane Group Flow (vph)	41	825	0	21	560	0	4	2	0	8	8	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	0.7	12.3		0.6	12.2		1.3	1.3		1.3	1.3	1.3
Effective Green, g (s)	0.7	12.3		0.6	12.2		1.3	1.3		1.3	1.3	1.3
Actuated g/C Ratio	0.03	0.45		0.02	0.45		0.05	0.05		0.05	0.05	0.05
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5		1.5	1.5	1.5
Lane Grp Cap (vph)	46	2306		39	2282		89	85		89	80	72
v/s Ratio Prot	c0.02	c0.16		0.01	0.11			0.00			c0.00	
v/s Ratio Perm							0.00			0.00		0.00
v/c Ratio	0.89	0.36		0.54	0.25		0.04	0.02		0.09	0.10	0.01
Uniform Delay, d1	13.2	4.8		13.1	4.6		12.3	12.3		12.3	12.3	12.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	90.4	0.0		7.0	0.0		0.1	0.0		0.2	0.2	0.0
Delay (s)	103.5	4.9		20.1	4.6		12.4	12.3		12.5	12.5	12.3
Level of Service	F	A		C	A		B	B		B	B	B
Approach Delay (s)		9.5			5.2			12.4			12.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	27.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	867	11	13	963	14	1	37	12	8	26	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	0.95	0.95
Frt	1.00	1.00		1.00	1.00		1.00	0.96		1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5076		1770	5075		1770	1794		1770	1744	1504
Flt Permitted	0.95	1.00		0.95	1.00		1.00	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	5076		1770	5075		1863	1794		1863	1744	1504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	942	12	14	1047	15	1	40	13	9	28	27
RTOR Reduction (vph)	0	1	0	0	1	0	0	12	0	0	3	22
Lane Group Flow (vph)	61	953	0	14	1061	0	1	41	0	9	28	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		4
Actuated Green, G (s)	2.8	20.4		0.6	18.2		2.7	2.7		2.7	2.7	2.7
Effective Green, g (s)	2.8	20.4		0.6	18.2		2.7	2.7		2.7	2.7	2.7
Actuated g/C Ratio	0.08	0.56		0.02	0.50		0.07	0.07		0.07	0.07	0.07
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5		1.5	1.5	1.5
Lane Grp Cap (vph)	135	2829		29	2524		137	132		137	129	111
v/s Ratio Prot	c0.03	0.19		0.01	c0.21			c0.02			0.02	
v/s Ratio Perm							0.00			0.00		0.00
v/c Ratio	0.45	0.34		0.48	0.42		0.01	0.31		0.07	0.22	0.02
Uniform Delay, d1	16.2	4.4		17.8	5.8		15.7	16.1		15.8	16.0	15.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0		4.5	0.0		0.0	0.5		0.1	0.3	0.0
Delay (s)	17.0	4.4		22.4	5.9		15.7	16.6		15.8	16.3	15.7
Level of Service	B	A		C	A		B	B		B	B	B
Approach Delay (s)		5.2			6.1			16.5			16.0	
Approach LOS		A			A			B			B	

Intersection Summary					
HCM Average Control Delay	6.2	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.40				
Actuated Cycle Length (s)	36.6	Sum of lost time (s)		12.9	
Intersection Capacity Utilization	39.6%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	538	27	37	448	45	34	161	47	22	98	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5049		1770	5016		1770	1800		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5049		1770	5016		1770	1800		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	209	585	29	40	487	49	37	175	51	24	107	65
RTOR Reduction (vph)	0	3	0	0	8	0	0	7	0	0	0	51
Lane Group Flow (vph)	209	611	0	40	528	0	37	219	0	24	107	14
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	7.7	19.2		3.2	14.7		2.0	12.0		1.7	11.7	11.7
Effective Green, g (s)	7.7	19.2		3.2	14.7		2.0	12.0		1.7	11.7	11.7
Actuated g/C Ratio	0.14	0.36		0.06	0.27		0.04	0.22		0.03	0.22	0.22
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	492	1805		105	1373		66	402		56	406	345
v/s Ratio Prot	c0.06	c0.12		0.02	0.11		c0.02	c0.12		0.01	0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.42	0.34		0.38	0.38		0.56	0.54		0.43	0.26	0.04
Uniform Delay, d1	21.0	12.6		24.3	15.8		25.4	18.4		25.5	17.4	16.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0		0.8	0.1		6.3	0.8		1.9	0.1	0.0
Delay (s)	21.2	12.6		25.1	15.9		31.8	19.2		27.4	17.6	16.6
Level of Service	C	B		C	B		C	B		C	B	B
Approach Delay (s)		14.8			16.5			21.0			18.4	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	259	578	31	54	763	92	30	184	36	44	164	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5046		1770	5003		1770	1817		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5046		1770	5003		1770	1817		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	628	34	59	829	100	33	200	39	48	178	232
RTOR Reduction (vph)	0	4	0	0	10	0	0	5	0	0	0	179
Lane Group Flow (vph)	282	658	0	59	919	0	33	234	0	48	178	53
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	10.9	28.1		5.4	22.6		3.2	15.6		3.7	16.1	16.1
Effective Green, g (s)	10.9	28.1		5.4	22.6		3.2	15.6		3.7	16.1	16.1
Actuated g/C Ratio	0.15	0.40		0.08	0.32		0.05	0.22		0.05	0.23	0.23
Clearance Time (s)	4.0	5.0		4.0	5.0		4.0	4.6		4.0	4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	532	2014		136	1606		80	403		93	426	362
v/s Ratio Prot	c0.08	0.13		0.03	c0.18		0.02	c0.13		c0.03	0.10	
v/s Ratio Perm												0.03
v/c Ratio	0.53	0.33		0.43	0.57		0.41	0.58		0.52	0.42	0.15
Uniform Delay, d1	27.4	14.6		31.0	19.9		32.7	24.5		32.5	23.2	21.7
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	0.0		0.8	0.3		1.3	1.4		2.0	0.2	0.1
Delay (s)	27.9	14.6		31.8	20.2		33.9	25.9		34.5	23.4	21.7
Level of Service	C	B		C	C		C	C		C	C	C
Approach Delay (s)		18.6			20.9			26.8			23.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	17.6
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	302	69	175	307	146	127	1247	156	173	760	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Lane Util. Factor	0.97	0.91		0.97	0.91		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.97		1.00	0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4943		3433	4839		1770	5000		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4943		3433	4839		1770	5000		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	328	75	190	334	159	138	1355	170	188	826	228
RTOR Reduction (vph)	0	28	0	0	68	0	0	10	0	0	0	115
Lane Group Flow (vph)	232	375	0	190	425	0	138	1515	0	188	826	113
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	11.3	19.2		10.1	18.0		12.3	36.1		15.1	38.9	38.9
Effective Green, g (s)	11.3	19.2		10.1	18.0		12.3	36.1		15.1	38.9	38.9
Actuated g/C Ratio	0.12	0.20		0.10	0.18		0.13	0.37		0.15	0.40	0.40
Clearance Time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Vehicle Extension (s)	2.0	5.2		2.0	5.2		2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	395	966		353	887		222	1838		272	2014	627
v/s Ratio Prot	c0.07	0.08		0.06	c0.09		0.08	c0.30		c0.11	0.16	
v/s Ratio Perm												0.07
v/c Ratio	0.59	0.39		0.54	0.48		0.62	0.82		0.69	0.41	0.18
Uniform Delay, d1	41.2	34.4		41.8	35.9		40.7	28.2		39.3	21.4	19.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.6		0.8	0.9		3.9	3.6		6.0	0.3	0.3
Delay (s)	42.7	35.0		42.6	36.8		44.6	31.7		45.3	21.7	19.6
Level of Service	D	C		D	D		D	C		D	C	B
Approach Delay (s)		37.8			38.4			32.8			24.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	98.2	Sum of lost time (s)	17.7
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	261	371	159	340	456	141	126	962	126	200	1251	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Lane Util. Factor	0.97	0.91		0.97	0.91		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.95		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	4856		3433	4905		1770	4997		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	4856		3433	4905		1770	4997		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	403	173	370	496	153	137	1046	137	217	1360	363
RTOR Reduction (vph)	0	60	0	0	41	0	0	11	0	0	0	117
Lane Group Flow (vph)	284	516	0	370	608	0	137	1172	0	217	1360	246
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	13.8	21.8		16.5	24.5		13.2	35.7		17.9	40.4	40.4
Effective Green, g (s)	13.8	21.8		16.5	24.5		13.2	35.7		17.9	40.4	40.4
Actuated g/C Ratio	0.13	0.20		0.15	0.22		0.12	0.33		0.16	0.37	0.37
Clearance Time (s)	5.2	4.4		5.2	4.4		3.7	4.4		3.7	4.4	4.4
Vehicle Extension (s)	2.0	5.2		2.0	5.2		2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	432	966		517	1096		213	1628		289	1874	584
v/s Ratio Prot	0.08	0.11		c0.11	c0.12		0.08	c0.23		0.12	c0.27	
v/s Ratio Perm												0.16
v/c Ratio	0.66	0.53		0.72	0.55		0.64	0.72		0.75	0.73	0.42
Uniform Delay, d1	45.6	39.3		44.3	37.7		46.0	32.5		43.7	29.8	25.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	1.1		3.9	1.1		4.9	2.0		9.4	1.8	1.1
Delay (s)	48.4	40.5		48.2	38.8		50.9	34.5		53.1	31.6	27.0
Level of Service	D	D		D	D		D	C		D	C	C
Approach Delay (s)		43.1			42.2			36.2			33.2	
Approach LOS		D			D			D			C	

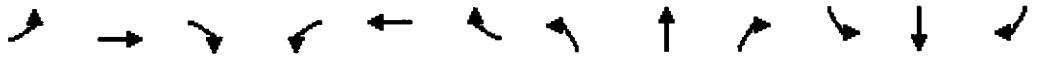
Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	358	43	74	492	10	115	42	67	26	20	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	5003		1770	5070			1797	1583		1812	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	5003		1770	5070			1797	1583		1812	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	389	47	80	535	11	125	46	73	28	22	35
RTOR Reduction (vph)	0	10	0	0	1	0	0	0	59	0	0	32
Lane Group Flow (vph)	38	426	0	80	545	0	0	171	14	0	50	3
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases									4			3
Actuated Green, G (s)	2.0	13.1		5.0	16.7			9.9	9.9		4.5	4.5
Effective Green, g (s)	2.0	13.1		5.0	16.7			9.9	9.9		4.5	4.5
Actuated g/C Ratio	0.04	0.26		0.10	0.33			0.19	0.19		0.09	0.09
Clearance Time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0			1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	69	1280		173	1654			347	306		159	139
v/s Ratio Prot	0.02	0.09		c0.05	c0.11			c0.10			c0.03	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.55	0.33		0.46	0.33			0.49	0.05		0.31	0.02
Uniform Delay, d1	24.2	15.5		21.8	13.0			18.4	16.8		21.9	21.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.3	0.1		0.7	0.0			0.4	0.0		0.4	0.0
Delay (s)	29.5	15.5		22.5	13.1			18.8	16.8		22.3	21.4
Level of Service	C	B		C	B			B	B		C	C
Approach Delay (s)		16.7			14.3			18.2			21.9	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	18.7
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

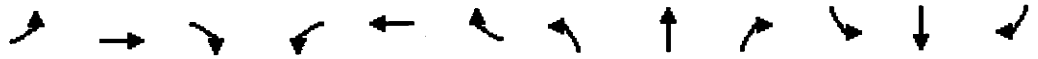
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	598	44	60	527	7	75	14	81	5	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	5033		1770	5075			1787	1583		1806	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.96	1.00		0.97	1.00
Satd. Flow (perm)	1770	5033		1770	5075			1787	1583		1806	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	650	48	65	573	8	82	15	88	5	3	28
RTOR Reduction (vph)	0	5	0	0	1	0	0	0	77	0	0	27
Lane Group Flow (vph)	38	693	0	65	580	0	0	97	11	0	8	1
Turn Type	Prot			Prot			Split		Perm	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases									4			3
Actuated Green, G (s)	1.7	15.5		3.2	17.6			5.8	5.8		1.4	1.4
Effective Green, g (s)	1.7	15.5		3.2	17.6			5.8	5.8		1.4	1.4
Actuated g/C Ratio	0.04	0.35		0.07	0.39			0.13	0.13		0.03	0.03
Clearance Time (s)	4.0	4.9		4.6	4.9			4.6	4.6		4.6	4.6
Vehicle Extension (s)	1.0	2.0		1.0	2.0			1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	67	1749		127	2003			232	206		57	50
v/s Ratio Prot	0.02	c0.14		c0.04	0.11			c0.05			c0.00	
v/s Ratio Perm									0.01			0.00
v/c Ratio	0.57	0.40		0.51	0.29			0.42	0.06		0.14	0.02
Uniform Delay, d1	21.1	11.0		19.9	9.2			17.8	17.0		21.0	20.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	6.4	0.1		1.4	0.0			0.4	0.0		0.4	0.1
Delay (s)	27.5	11.1		21.4	9.3			18.3	17.0		21.4	21.0
Level of Service	C	B		C	A			B	B		C	C
Approach Delay (s)		11.9			10.5			17.7			21.1	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	18.7
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	304	33	13	487	0	34	28	2	3	45	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			1.00	1.00
Satd. Flow (prot)	1770	5010		1770	5085			1807			1857	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97			1.00	1.00
Satd. Flow (perm)	1770	5010		1770	5085			1807			1857	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	330	36	14	529	0	37	30	2	3	49	9
RTOR Reduction (vph)	0	14	0	0	0	0	0	1	0	0	0	9
Lane Group Flow (vph)	10	352	0	14	529	0	0	68	0	0	52	0
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	0.4	12.8		0.6	13.0			1.6			1.6	1.6
Effective Green, g (s)	0.4	12.8		0.6	13.0			1.6			1.6	1.6
Actuated g/C Ratio	0.01	0.38		0.02	0.39			0.05			0.05	0.05
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Vehicle Extension (s)	1.5	2.0		1.0	2.0			1.0			1.5	1.5
Lane Grp Cap (vph)	21	1909		32	1967			86			88	75
v/s Ratio Prot	0.01	0.07		c0.01	c0.10			c0.04			c0.03	
v/s Ratio Perm												0.00
v/c Ratio	0.48	0.18		0.44	0.27			0.79			0.59	0.01
Uniform Delay, d1	16.5	6.9		16.3	7.0			15.8			15.7	15.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	6.1	0.0		3.5	0.0			35.7			6.9	0.0
Delay (s)	22.6	6.9		19.8	7.1			51.5			22.6	15.3
Level of Service	C	A		B	A			D			C	B
Approach Delay (s)		7.4			7.4			51.5			21.5	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

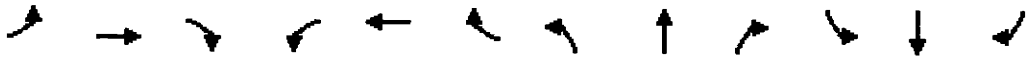


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	526	98	27	451	10	75	32	33	7	31	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (prot)	1770	4965		1770	5069			1757			1845	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.97			0.99	1.00
Satd. Flow (perm)	1770	4965		1770	5069			1757			1845	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	572	107	29	490	11	82	35	36	8	34	50
RTOR Reduction (vph)	0	29	0	0	3	0	0	12	0	0	0	46
Lane Group Flow (vph)	33	650	0	29	498	0	0	141	0	0	42	4
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)	1.1	14.7		0.7	14.3			6.0			3.0	3.0
Effective Green, g (s)	1.1	14.7		0.7	14.3			6.0			3.0	3.0
Actuated g/C Ratio	0.03	0.36		0.02	0.35			0.14			0.07	0.07
Clearance Time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Vehicle Extension (s)	1.5	2.0		1.0	2.0			1.0			1.5	1.5
Lane Grp Cap (vph)	47	1763		30	1751			255			134	115
v/s Ratio Prot	c0.02	c0.13		0.02	0.10			c0.08			c0.02	
v/s Ratio Perm												0.00
v/c Ratio	0.70	0.37		0.97	0.28			0.55			0.31	0.03
Uniform Delay, d1	20.0	9.9		20.3	9.8			16.5			18.2	17.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	32.1	0.0		148.3	0.0			1.5			0.5	0.0
Delay (s)	52.0	10.0		168.6	9.9			17.9			18.7	17.9
Level of Service	D	A		F	A			B			B	B
Approach Delay (s)		11.9			18.6			17.9			18.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	41.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	276	67	36	287	8	73	71	73	10	49	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4936		1770	5064		1770	1863	1583	1770	1795	
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00	1.00	0.71	1.00	
Satd. Flow (perm)	1770	4936		1770	5064		1325	1863	1583	1317	1795	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	300	73	39	312	9	79	77	79	11	53	17
RTOR Reduction (vph)	0	36	0	0	3	0	0	0	64	0	11	0
Lane Group Flow (vph)	26	337	0	39	318	0	79	77	15	11	59	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	0.7	10.9		0.8	11.0		5.9	5.9	5.9	5.9	5.9	
Effective Green, g (s)	0.7	10.9		0.8	11.0		5.9	5.9	5.9	5.9	5.9	
Actuated g/C Ratio	0.02	0.35		0.03	0.35		0.19	0.19	0.19	0.19	0.19	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	40	1724		45	1785		251	352	299	249	339	
v/s Ratio Prot	0.01	c0.07		c0.02	0.06			0.04			0.03	
v/s Ratio Perm							c0.06		0.01	0.01		
v/c Ratio	0.65	0.20		0.87	0.18		0.31	0.22	0.05	0.04	0.17	
Uniform Delay, d1	15.1	7.1		15.1	7.0		10.9	10.7	10.4	10.3	10.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.2	0.0		82.1	0.0		0.3	0.1	0.0	0.0	0.1	
Delay (s)	40.3	7.1		97.3	7.0		11.2	10.8	10.4	10.4	10.7	
Level of Service	D	A		F	A		B	B	B	B	B	
Approach Delay (s)		9.3			16.8			10.8			10.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	31.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



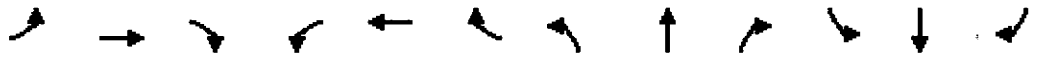
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	440	60	61	453	19	77	92	78	8	65	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4994		1770	5054		1770	1863	1583	1770	1817	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00	1.00	0.69	1.00	
Satd. Flow (perm)	1770	4994		1770	5054		1307	1863	1583	1290	1817	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	478	65	66	492	21	84	100	85	9	71	14
RTOR Reduction (vph)	0	15	0	0	4	0	0	0	70	0	7	0
Lane Group Flow (vph)	17	528	0	66	509	0	84	100	15	9	78	0
Turn Type	Prot			Prot			Perm		Perm	Perm		
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4		4	8		
Actuated Green, G (s)	0.7	12.4		1.9	13.6		6.1	6.1	6.1	6.1	6.1	
Effective Green, g (s)	0.7	12.4		1.9	13.6		6.1	6.1	6.1	6.1	6.1	
Actuated g/C Ratio	0.02	0.36		0.06	0.40		0.18	0.18	0.18	0.18	0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0		4.6	4.6	4.6	4.6	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	36	1821		99	2022		234	334	284	231	326	
v/s Ratio Prot	0.01	c0.11		c0.04	0.10			0.05			0.04	
v/s Ratio Perm							c0.06		0.01	0.01		
v/c Ratio	0.47	0.29		0.67	0.25		0.36	0.30	0.05	0.04	0.24	
Uniform Delay, d1	16.5	7.7		15.7	6.8		12.2	12.1	11.6	11.5	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	0.0		12.4	0.0		0.3	0.2	0.0	0.0	0.1	
Delay (s)	20.0	7.7		28.1	6.8		12.6	12.3	11.6	11.6	12.1	
Level of Service	B	A		C	A		B	B	B	B	B	
Approach Delay (s)		8.1			9.3			12.2			12.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	34.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	189	73	57	44	86	86	98	747	32	79	649	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	16	12	12
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.93		1.00	0.92		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3306		3433	3274		3433	3517		3891	3391	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3306		3433	3274		3433	3517		3891	3391	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	79	62	48	93	93	107	812	35	86	705	272
RTOR Reduction (vph)	0	47	0	0	77	0	0	2	0	0	27	0
Lane Group Flow (vph)	205	94	0	48	109	0	107	845	0	86	950	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	8.5	16.8		3.5	11.8		5.4	24.9		4.9	24.4	
Effective Green, g (s)	8.5	16.8		3.5	11.8		5.4	24.9		4.9	24.4	
Actuated g/C Ratio	0.12	0.24		0.05	0.17		0.08	0.35		0.07	0.35	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	414	789		171	549		263	1244		271	1175	
v/s Ratio Prot	c0.06	0.03		0.01	c0.03		c0.03	0.24		0.02	c0.28	
v/s Ratio Perm												
v/c Ratio	0.50	0.12		0.28	0.20		0.41	0.68		0.32	0.81	
Uniform Delay, d1	28.9	21.0		32.2	25.2		31.0	19.4		31.2	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0		0.3	0.1		0.4	1.2		0.2	3.9	
Delay (s)	29.3	21.0		32.6	25.3		31.3	20.5		31.4	24.8	
Level of Service	C	C		C	C		C	C		C	C	
Approach Delay (s)		25.9			26.8			21.7			25.4	
Approach LOS		C			C			C			C	

HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	20.3
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	385	158	139	56	85	95	139	801	34	127	825	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	16	12	12
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.93		1.00	0.92		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3291		3433	3259		3433	3518		3891	3375	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3291		3433	3259		3433	3518		3891	3375	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	172	151	61	92	103	151	871	37	138	897	401
RTOR Reduction (vph)	0	113	0	0	88	0	0	2	0	0	36	0
Lane Group Flow (vph)	418	210	0	61	107	0	151	906	0	138	1262	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	13.6	19.5		5.1	11.0		7.9	24.8		7.2	24.1	
Effective Green, g (s)	13.6	19.5		5.1	11.0		7.9	24.8		7.2	24.1	
Actuated g/C Ratio	0.18	0.25		0.07	0.14		0.10	0.32		0.09	0.31	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	607	835		228	466		353	1135		364	1058	
v/s Ratio Prot	c0.12	c0.06		0.02	0.03		c0.04	0.26		0.04	c0.37	
v/s Ratio Perm												
v/c Ratio	0.69	0.25		0.27	0.23		0.43	0.80		0.38	1.19	
Uniform Delay, d1	29.7	22.9		34.1	29.2		32.4	23.8		32.7	26.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.1		0.2	0.1		0.3	3.7		0.2	96.1	
Delay (s)	32.3	22.9		34.4	29.3		32.7	27.5		33.0	122.5	
Level of Service	C	C		C	C		C	C		C	F	
Approach Delay (s)		28.2			30.5			28.2			113.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM Average Control Delay	65.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	14.3
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1	1	2	390	194	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1	2	424	211	4
RTOR Reduction (vph)	0	1	0	0	0	3
Lane Group Flow (vph)	1	0	2	424	211	1
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	0.4	0.4	0.4	12.4	8.0	8.0
Effective Green, g (s)	0.4	0.4	0.4	12.4	8.0	8.0
Actuated g/C Ratio	0.02	0.02	0.02	0.58	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	1.0	1.0	1.0	2.0	2.0	2.0
Lane Grp Cap (vph)	33	30	33	2051	1323	592
v/s Ratio Prot	c0.00		0.00	c0.12	0.06	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.03	0.00	0.06	0.21	0.16	0.00
Uniform Delay, d1	10.3	10.3	10.3	2.2	4.5	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.3	0.0	0.0	0.0
Delay (s)	10.4	10.3	10.6	2.2	4.5	4.2
Level of Service	B	B	B	A	A	A
Approach Delay (s)	10.4			2.2	4.5	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	21.4	Sum of lost time (s)	8.6
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	22	10	20	498	432	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	11	22	541	470	27
RTOR Reduction (vph)	0	11	0	0	0	9
Lane Group Flow (vph)	24	0	22	541	470	18
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	0.5	0.5	0.5	15.8	11.3	11.3
Effective Green, g (s)	0.5	0.5	0.5	15.8	11.3	11.3
Actuated g/C Ratio	0.02	0.02	0.02	0.63	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.6	4.6	4.6
Vehicle Extension (s)	1.0	1.0	1.0	2.0	2.0	2.0
Lane Grp Cap (vph)	36	32	36	2246	1606	718
v/s Ratio Prot	c0.01		0.01	c0.15	0.13	
v/s Ratio Perm		0.00				0.01
v/c Ratio	0.67	0.01	0.61	0.24	0.29	0.03
Uniform Delay, d1	12.1	12.0	12.1	2.0	4.3	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.6	0.0	19.6	0.0	0.0	0.0
Delay (s)	42.7	12.0	31.7	2.0	4.3	3.8
Level of Service	D	B	C	A	A	A
Approach Delay (s)	33.0			3.1	4.3	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	24.9	Sum of lost time (s)	8.6
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	0	2	145	0	20	42	1444	114	168	980	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1794		1681	1905	1583	1770	5029		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1794		1681	1905	1583	1770	5029		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	2	158	0	22	46	1570	124	183	1065	55
RTOR Reduction (vph)	0	2	0	0	0	19	0	6	0	0	0	13
Lane Group Flow (vph)	3	0	0	79	79	3	46	1688	0	183	1065	42
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	1.3	1.3		9.1	9.1	9.1	4.0	33.4		11.6	41.0	41.0
Effective Green, g (s)	1.3	1.3		9.1	9.1	9.1	4.0	33.4		11.6	41.0	41.0
Actuated g/C Ratio	0.02	0.02		0.13	0.13	0.13	0.06	0.46		0.16	0.57	0.57
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	32	32		213	241	200	98	2336		286	2900	903
v/s Ratio Prot	c0.00	0.00		c0.05	0.04		0.03	c0.34		c0.10	0.21	
v/s Ratio Perm						0.00						0.03
v/c Ratio	0.09	0.00		0.37	0.33	0.01	0.47	0.72		0.64	0.37	0.05
Uniform Delay, d1	34.7	34.7		28.8	28.6	27.5	32.9	15.5		28.2	8.4	6.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.1	0.0		2.7	2.0	0.1	1.3	1.4		3.4	0.2	0.0
Delay (s)	37.8	34.7		31.4	30.6	27.5	34.2	16.9		31.6	8.6	6.9
Level of Service	D	C		C	C	C	C	B		C	A	A
Approach Delay (s)		36.6			30.6			17.4			11.7	
Approach LOS		D			C			B			B	

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	16.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	8	40	246	8	114	49	1322	11	38	1484	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.88		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1849		1681	1916	1583	1770	5079		1770	5085	1583
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1849		1681	1916	1583	1770	5079		1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	9	43	267	9	124	53	1437	12	41	1613	14
RTOR Reduction (vph)	0	38	0	0	0	99	0	1	0	0	0	3
Lane Group Flow (vph)	74	14	0	139	137	25	53	1448	0	41	1613	11
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	9.0	9.0		15.4	15.4	15.4	4.3	32.3		3.9	31.9	31.9
Effective Green, g (s)	9.0	9.0		15.4	15.4	15.4	4.3	32.3		3.9	31.9	31.9
Actuated g/C Ratio	0.12	0.12		0.20	0.20	0.20	0.06	0.42		0.05	0.41	0.41
Clearance Time (s)	3.7	3.7		4.2	4.2	4.2	3.7	4.9		3.7	4.9	4.9
Vehicle Extension (s)	5.5	5.5		5.5	5.5	5.5	2.0	5.2		2.0	5.2	5.2
Lane Grp Cap (vph)	207	216		336	383	316	99	2128		90	2104	655
v/s Ratio Prot	c0.04	0.01		c0.08	0.07		c0.03	0.29		0.02	c0.32	
v/s Ratio Perm						0.02						0.01
v/c Ratio	0.36	0.06		0.41	0.36	0.08	0.54	0.68		0.46	0.77	0.02
Uniform Delay, d1	31.4	30.3		26.9	26.6	25.1	35.4	18.2		35.6	19.4	13.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.3		2.0	1.4	0.3	2.8	1.2		1.3	2.1	0.0
Delay (s)	34.0	30.6		28.9	28.0	25.3	38.2	19.4		36.9	21.5	13.4
Level of Service	C	C		C	C	C	D	B		D	C	B
Approach Delay (s)		32.6			27.5			20.1			21.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

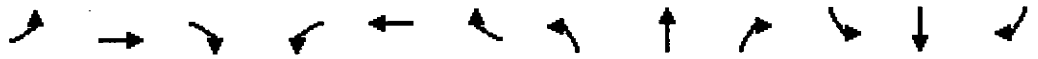
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1189	1126	148	145	423	46	439	682	459	109	288	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1292	1224	161	158	460	50	477	741	499	118	313	492
RTOR Reduction (vph)	0	0	49	0	0	41	0	0	188	0	0	302
Lane Group Flow (vph)	1292	1224	112	158	460	9	477	741	311	118	313	190
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	33.2	44.0	44.0	8.8	19.6	19.6	16.4	29.3	29.3	8.4	21.3	21.3
Effective Green, g (s)	33.2	44.0	44.0	8.8	19.6	19.6	16.4	29.3	29.3	8.4	21.3	21.3
Actuated g/C Ratio	0.31	0.40	0.40	0.08	0.18	0.18	0.15	0.27	0.27	0.08	0.20	0.20
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0
Lane Grp Cap (vph)	1049	1433	641	278	638	285	518	954	427	265	693	310
v/s Ratio Prot	c0.38	c0.35		0.05	0.13		c0.14	c0.21		0.03	0.09	
v/s Ratio Perm			0.07			0.01			0.20			c0.12
v/c Ratio	1.23	0.85	0.18	0.57	0.72	0.03	0.92	0.78	0.73	0.45	0.45	0.61
Uniform Delay, d1	37.8	29.4	20.7	48.1	42.0	36.7	45.5	36.7	36.1	47.9	38.5	39.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	112.7	5.0	0.0	1.6	3.4	0.0	21.6	3.7	5.2	0.4	0.2	2.5
Delay (s)	150.4	34.4	20.8	49.7	45.4	36.7	67.1	40.4	41.2	48.4	38.7	42.4
Level of Service	F	C	C	D	D	D	E	D	D	D	D	D
Approach Delay (s)		89.6			45.8			48.0			41.9	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM Average Control Delay	65.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	12.9
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	754	724	362	489	1131	79	310	659	245	50	772	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	820	787	393	532	1229	86	337	716	266	54	839	648
RTOR Reduction (vph)	0	0	224	0	0	43	0	0	191	0	0	226
Lane Group Flow (vph)	820	787	169	532	1229	43	337	716	75	54	839	422
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	26.1	36.7	36.7	24.5	35.1	35.1	14.6	36.3	36.3	13.8	35.5	35.5
Effective Green, g (s)	26.1	36.7	36.7	24.5	35.1	35.1	14.6	36.3	36.3	13.8	35.5	35.5
Actuated g/C Ratio	0.20	0.28	0.28	0.19	0.27	0.27	0.11	0.28	0.28	0.11	0.27	0.27
Clearance Time (s)	4.0	4.9	4.9	4.0	4.9	4.9	4.0	5.3	5.3	4.0	5.3	5.3
Vehicle Extension (s)	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0	0.5	2.0	2.0
Lane Grp Cap (vph)	692	1003	449	649	959	429	387	992	444	366	970	434
v/s Ratio Prot	c0.24	0.22		0.15	c0.35		c0.10	0.20		0.02	0.24	
v/s Ratio Perm			0.11			0.03			0.05			c0.27
v/c Ratio	1.18	0.78	0.38	0.82	1.28	0.10	0.87	0.72	0.17	0.15	0.86	0.97
Uniform Delay, d1	51.7	42.8	37.2	50.4	47.2	35.4	56.5	42.0	35.2	52.5	44.7	46.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	97.5	3.8	0.2	7.6	134.7	0.0	18.3	2.2	0.1	0.1	7.9	35.4
Delay (s)	149.2	46.5	37.4	58.0	181.9	35.4	74.8	44.3	35.3	52.6	52.6	81.9
Level of Service	F	D	D	E	F	D	E	D	D	D	D	F
Approach Delay (s)		86.8			139.4			50.2			64.9	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM Average Control Delay	89.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	14.2
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	1318	8	12	498	51	17	37	1	91	84	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3536		1770	3490		1770	1856		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3536		1770	3490		1770	1856		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	1433	9	13	541	55	18	40	1	99	91	77
RTOR Reduction (vph)	0	0	0	0	7	0	0	1	0	0	0	67
Lane Group Flow (vph)	113	1442	0	13	589	0	18	40	0	99	91	10
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	5.9	35.4		0.7	30.2		0.8	2.9		5.8	7.9	7.9
Effective Green, g (s)	5.9	35.4		0.7	30.2		0.8	2.9		5.8	7.9	7.9
Actuated g/C Ratio	0.10	0.58		0.01	0.50		0.01	0.05		0.10	0.13	0.13
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	171	2052		20	1728		23	88		168	241	205
v/s Ratio Prot	c0.06	c0.41		0.01	0.17		0.01	0.02		c0.06	c0.05	
v/s Ratio Perm												0.01
v/c Ratio	0.66	0.70		0.65	0.34		0.78	0.46		0.59	0.38	0.05
Uniform Delay, d1	26.6	9.1		30.0	9.4		30.0	28.3		26.5	24.3	23.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.2	0.9		45.4	0.0		88.7	1.4		3.4	0.4	0.0
Delay (s)	33.8	10.0		75.4	9.4		118.7	29.6		29.8	24.7	23.3
Level of Service	C	A		E	A		F	C		C	C	C
Approach Delay (s)		11.7			10.8			56.8			26.2	
Approach LOS		B			B			E			C	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	723	20	40	1047	68	86	103	11	199	70	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3525		1770	3507		1770	1836		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3525		1770	3507		1770	1836		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	786	22	43	1138	74	93	112	12	216	76	116
RTOR Reduction (vph)	0	2	0	0	5	0	0	4	0	0	0	95
Lane Group Flow (vph)	115	806	0	43	1207	0	93	120	0	216	76	21
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	6.6	35.2		3.4	32.0		6.0	7.7		12.1	13.8	13.8
Effective Green, g (s)	6.6	35.2		3.4	32.0		6.0	7.7		12.1	13.8	13.8
Actuated g/C Ratio	0.09	0.47		0.05	0.43		0.08	0.10		0.16	0.18	0.18
Clearance Time (s)	4.0	4.2		4.0	4.2		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lane Grp Cap (vph)	157	1663		81	1504		142	190		287	345	293
v/s Ratio Prot	c0.06	c0.23		0.02	c0.34		0.05	c0.07		c0.12	0.04	
v/s Ratio Perm												0.01
v/c Ratio	0.73	0.48		0.53	0.80		0.65	0.63		0.75	0.22	0.07
Uniform Delay, d1	33.1	13.5		34.8	18.5		33.3	32.1		29.8	25.8	25.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.1	0.1		3.3	3.0		8.0	4.6		9.5	0.1	0.0
Delay (s)	47.2	13.6		38.1	21.6		41.3	36.7		39.3	25.9	25.2
Level of Service	D	B		D	C		D	D		D	C	C
Approach Delay (s)		17.8			22.1			38.7			32.8	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	20.4
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	1201	114	73	411	24	121	453	103	21	221	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3493		1770	3510		1770	3441		1770	3487	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3493		1770	3510		1770	3441		1770	3487	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	1305	124	79	447	26	132	492	112	23	240	26
RTOR Reduction (vph)	0	3	0	0	2	0	0	13	0	0	6	0
Lane Group Flow (vph)	113	1426	0	79	471	0	132	591	0	23	260	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	9.3	47.6		6.5	44.8		10.4	23.2		2.8	15.6	
Effective Green, g (s)	9.3	47.6		6.5	44.8		10.4	23.2		2.8	15.6	
Actuated g/C Ratio	0.10	0.50		0.07	0.47		0.11	0.25		0.03	0.17	
Clearance Time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Vehicle Extension (s)	0.5	2.0		0.5	2.0		0.5	2.0		0.5	2.0	
Lane Grp Cap (vph)	174	1761		122	1666		195	846		53	576	
v/s Ratio Prot	c0.06	c0.41		0.04	0.13		c0.07	c0.17		0.01	0.07	
v/s Ratio Perm												
v/c Ratio	0.65	0.81		0.65	0.28		0.68	0.70		0.43	0.45	
Uniform Delay, d1	41.0	19.6		42.8	15.0		40.4	32.4		45.0	35.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.1	2.7		8.5	0.0		7.1	2.1		2.1	0.2	
Delay (s)	47.1	22.3		51.4	15.1		47.5	34.5		47.1	35.7	
Level of Service	D	C		D	B		D	C		D	D	
Approach Delay (s)		24.1			20.3			36.8			36.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	867	14	49	1018	16	68	318	10	36	520	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3531		1770	3531		1770	3523		1770	3487	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3531		1770	3531		1770	3523		1770	3487	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	942	15	53	1107	17	74	346	11	39	565	61
RTOR Reduction (vph)	0	1	0	0	1	0	0	1	0	0	5	0
Lane Group Flow (vph)	60	956	0	53	1123	0	74	356	0	39	621	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	5.4	45.1		5.1	44.8		6.1	24.4		4.3	22.6	
Effective Green, g (s)	5.4	45.1		5.1	44.8		6.1	24.4		4.3	22.6	
Actuated g/C Ratio	0.06	0.48		0.05	0.48		0.07	0.26		0.05	0.24	
Clearance Time (s)	3.2	3.5		3.2	3.5		3.2	4.4		3.2	4.4	
Vehicle Extension (s)	0.5	2.0		0.5	2.0		0.5	2.0		0.5	2.0	
Lane Grp Cap (vph)	103	1709		97	1697		116	922		82	846	
v/s Ratio Prot	c0.03	0.27		0.03	c0.32		c0.04	0.10		0.02	c0.18	
v/s Ratio Perm												
v/c Ratio	0.58	0.56		0.55	0.66		0.64	0.39		0.48	0.73	
Uniform Delay, d1	42.8	17.0		42.9	18.4		42.5	28.2		43.4	32.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	0.2		3.3	0.8		8.2	0.1		1.6	2.9	
Delay (s)	48.1	17.2		46.3	19.2		50.6	28.3		44.9	35.4	
Level of Service	D	B		D	B		D	C		D	D	
Approach Delay (s)		19.1			20.4			32.2			35.9	
Approach LOS		B			C			C			D	

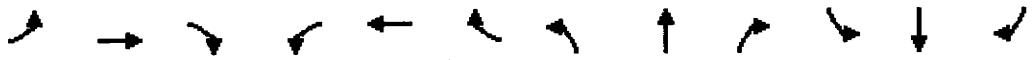
Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	14.3
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	864	68	105	469	57	116	623	287	138	255	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	939	74	114	510	62	126	677	312	150	277	140
RTOR Reduction (vph)	0	0	18	0	0	45	0	0	164	0	0	99
Lane Group Flow (vph)	137	939	56	114	510	17	126	677	148	150	277	41
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.7	25.5	25.5	10.8	24.6	24.6	24.9	25.4	25.4	12.5	13.0	13.0
Effective Green, g (s)	11.7	25.5	25.5	10.8	24.6	24.6	24.9	25.4	25.4	12.5	13.0	13.0
Actuated g/C Ratio	0.13	0.28	0.28	0.12	0.27	0.27	0.28	0.28	0.28	0.14	0.14	0.14
Clearance Time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.5	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	230	1439	448	212	966	432	489	998	446	246	511	228
v/s Ratio Prot	c0.08	c0.18		0.06	0.14		0.07	c0.19		c0.08	0.08	
v/s Ratio Perm			0.04			0.01			0.09			0.03
v/c Ratio	0.60	0.65	0.13	0.54	0.53	0.04	0.26	0.68	0.33	0.61	0.54	0.18
Uniform Delay, d1	37.0	28.4	24.0	37.3	27.8	24.1	25.4	28.7	25.6	36.5	35.8	33.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.8	0.0	1.3	0.2	0.0	0.1	1.5	0.2	2.9	0.6	0.1
Delay (s)	39.7	29.2	24.1	38.6	28.1	24.1	25.5	30.2	25.8	39.4	36.4	34.0
Level of Service	D	C	C	D	C	C	C	C	C	D	D	C
Approach Delay (s)		30.1			29.5			28.4			36.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	11.5
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

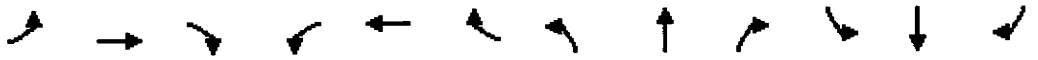
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	609	80	207	887	114	76	507	94	67	567	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	662	87	225	964	124	83	551	102	73	616	174
RTOR Reduction (vph)	0	0	29	0	0	58	0	0	67	0	0	48
Lane Group Flow (vph)	142	662	58	225	964	66	83	551	35	73	616	126
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.6	31.0	31.0	17.8	36.2	36.2	7.6	25.8	25.8	6.7	24.9	24.9
Effective Green, g (s)	12.6	31.0	31.0	17.8	36.2	36.2	7.6	25.8	25.8	6.7	24.9	24.9
Actuated g/C Ratio	0.13	0.32	0.32	0.18	0.37	0.37	0.08	0.27	0.27	0.07	0.26	0.26
Clearance Time (s)	4.0	4.4	4.4	4.0	4.4	4.4	4.0	3.5	3.5	4.0	3.5	3.5
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.5	2.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	229	1622	505	324	1318	590	138	939	420	122	907	406
v/s Ratio Prot	0.08	0.13		c0.13	c0.27		0.05	c0.16		0.04	c0.17	
v/s Ratio Perm			0.04			0.04			0.02			0.08
v/c Ratio	0.62	0.41	0.12	0.69	0.73	0.11	0.60	0.59	0.08	0.60	0.68	0.31
Uniform Delay, d1	40.0	25.9	23.4	37.2	26.3	20.0	43.3	31.1	26.8	43.9	32.6	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.1	0.0	5.1	1.8	0.0	5.0	0.6	0.0	5.2	1.6	0.2
Delay (s)	43.8	26.0	23.4	42.3	28.1	20.0	48.3	31.7	26.9	49.1	34.2	29.4
Level of Service	D	C	C	D	C	B	D	C	C	D	C	C
Approach Delay (s)		28.6			29.8			32.9			34.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	7.5
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	209	596	486	152	451	19	38	32	43	26	257	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4743		1770	5054		1770	1863	1583	1770	1822	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	4743		1770	5054		1770	1863	1583	1770	1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	227	648	528	165	490	21	41	35	47	28	279	48
RTOR Reduction (vph)	0	92	0	0	3	0	0	0	35	0	4	0
Lane Group Flow (vph)	227	1084	0	165	508	0	41	35	12	28	323	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	27.3	29.6		13.3	15.6		3.6	22.5	22.5	3.1	22.0	
Effective Green, g (s)	27.3	29.6		13.3	15.6		3.6	22.5	22.5	3.1	22.0	
Actuated g/C Ratio	0.32	0.35		0.16	0.18		0.04	0.26	0.26	0.04	0.26	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	568	1650		277	926		75	493	419	64	471	
v/s Ratio Prot	0.13	c0.23		0.09	c0.10		c0.02	0.02		0.02	c0.18	
v/s Ratio Perm									0.01			
v/c Ratio	0.40	0.66		0.60	0.55		0.55	0.07	0.03	0.44	0.69	
Uniform Delay, d1	22.5	23.5		33.4	31.6		40.0	23.5	23.2	40.1	28.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.7		2.3	0.4		4.3	0.0	0.0	1.7	3.3	
Delay (s)	22.7	24.2		35.7	31.9		44.3	23.5	23.2	41.9	31.7	
Level of Service	C	C		D	C		D	C	C	D	C	
Approach Delay (s)		23.9			32.8			30.3			32.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	85.1	Sum of lost time (s)	17.2
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	572	40	25	766	31	193	215	66	52	82	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5036		1770	5055		1770	1863	1583	1770	1656	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5036		1770	5055		1770	1863	1583	1770	1656	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	622	43	27	833	34	210	234	72	57	89	252
RTOR Reduction (vph)	0	4	0	0	3	0	0	0	48	0	70	0
Lane Group Flow (vph)	182	661	0	27	864	0	210	234	24	57	271	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	16.9	38.1		3.2	24.4		17.5	32.5	32.5	5.9	20.9	
Effective Green, g (s)	16.9	38.1		3.2	24.4		17.5	32.5	32.5	5.9	20.9	
Actuated g/C Ratio	0.18	0.40		0.03	0.25		0.18	0.34	0.34	0.06	0.22	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	311	1992		59	1281		322	629	534	108	359	
v/s Ratio Prot	c0.10	0.13		0.02	c0.17		c0.12	0.13		0.03	c0.16	
v/s Ratio Perm									0.02			
v/c Ratio	0.59	0.33		0.46	0.67		0.65	0.37	0.05	0.53	0.76	
Uniform Delay, d1	36.5	20.2		45.7	32.4		36.6	24.2	21.5	43.8	35.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8	0.0		2.0	1.1		3.6	0.1	0.0	2.1	7.8	
Delay (s)	38.3	20.3		47.7	33.5		40.2	24.3	21.5	46.0	43.1	
Level of Service	D	C		D	C		D	C	C	D	D	
Approach Delay (s)		24.1			33.9			30.4			43.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	16.6
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	464	72	49	602	10	23	42	36	25	39	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	5073		1770	1863	1583	1770	1779	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	1770	5073		1770	1863	1583	1770	1779	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	504	78	53	654	11	25	46	39	27	42	18
RTOR Reduction (vph)	0	0	44	0	1	0	0	0	36	0	12	0
Lane Group Flow (vph)	135	504	34	53	664	0	25	46	3	27	48	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	6.3	17.3	17.3	5.3	16.3		1.5	3.1	3.1	1.5	3.1	
Effective Green, g (s)	6.3	17.3	17.3	5.3	16.3		1.5	3.1	3.1	1.5	3.1	
Actuated g/C Ratio	0.14	0.39	0.39	0.12	0.37		0.03	0.07	0.07	0.03	0.07	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	252	1986	618	212	1867		60	130	111	60	124	
v/s Ratio Prot	c0.08	0.10		0.03	c0.13		0.01	0.02		c0.02	c0.03	
v/s Ratio Perm			0.02						0.00			
v/c Ratio	0.54	0.25	0.05	0.25	0.36		0.42	0.35	0.02	0.45	0.39	
Uniform Delay, d1	17.6	9.1	8.4	17.7	10.2		21.0	19.6	19.2	21.0	19.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.0	0.0	0.2	0.0		1.7	0.6	0.0	1.9	0.7	
Delay (s)	18.7	9.2	8.4	17.9	10.2		22.7	20.3	19.2	22.9	20.4	
Level of Service	B	A	A	B	B		C	C	B	C	C	
Approach Delay (s)		10.9			10.8			20.4			21.2	
Approach LOS		B			B			C			C	

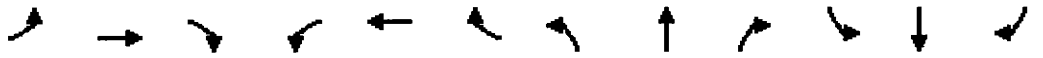
Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	17.1
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	576	33	17	713	15	47	33	43	19	17	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	5070		1770	1863	1583	1770	1675	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	1770	5070		1770	1863	1583	1770	1675	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	626	36	18	775	16	51	36	47	21	18	37
RTOR Reduction (vph)	0	0	14	0	1	0	0	0	41	0	34	0
Lane Group Flow (vph)	73	626	22	18	790	0	51	36	6	21	21	0
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.8	22.3	22.3	1.4	18.9		2.8	5.9	5.9	0.8	3.9	
Effective Green, g (s)	4.8	22.3	22.3	1.4	18.9		2.8	5.9	5.9	0.8	3.9	
Actuated g/C Ratio	0.10	0.47	0.47	0.03	0.40		0.06	0.12	0.12	0.02	0.08	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.6		4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)	1.0	2.0	2.0	1.0	2.0		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	179	2387	743	52	2017		104	231	197	30	138	
v/s Ratio Prot	c0.04	0.12		0.01	c0.16		c0.03	c0.02		0.01	0.01	
v/s Ratio Perm			0.01						0.00			
v/c Ratio	0.41	0.26	0.03	0.35	0.39		0.49	0.16	0.03	0.70	0.15	
Uniform Delay, d1	20.0	7.6	6.8	22.6	10.2		21.7	18.6	18.3	23.2	20.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.0	0.0	1.5	0.0		1.3	0.1	0.0	46.0	0.2	
Delay (s)	20.6	7.6	6.8	24.1	10.2		23.0	18.7	18.3	69.2	20.5	
Level of Service	C	A	A	C	B		C	B	B	E	C	
Approach Delay (s)		8.9			10.6			20.2			33.9	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	12.6
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	367	91	73	537	16	70	213	129	17	139	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	4934		1770	5064		1770	1863	1583	1770	1793	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	4934		1770	5064		1770	1863	1583	1770	1793	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	399	99	79	584	17	76	232	140	18	151	50
RTOR Reduction (vph)	0	30	0	0	2	0	0	0	93	0	7	0
Lane Group Flow (vph)	116	468	0	79	599	0	76	232	47	18	194	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	6.6	15.2		5.4	14.0		5.3	19.5	19.5	0.8	15.0	
Effective Green, g (s)	6.6	15.2		5.4	14.0		5.3	19.5	19.5	0.8	15.0	
Actuated g/C Ratio	0.11	0.26		0.09	0.24		0.09	0.33	0.33	0.01	0.26	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)	200	1284		164	1214		161	622	529	24	461	
v/s Ratio Prot	c0.07	0.09		0.04	c0.12		c0.04	c0.12		0.01	0.11	
v/s Ratio Perm									0.03			
v/c Ratio	0.58	0.36		0.48	0.49		0.47	0.37	0.09	0.75	0.42	
Uniform Delay, d1	24.6	17.7		25.2	19.1		25.2	14.8	13.3	28.7	18.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	0.1		0.8	0.1		0.8	0.1	0.0	73.5	0.2	
Delay (s)	27.1	17.7		26.0	19.3		26.0	14.9	13.4	102.2	18.3	
Level of Service	C	B		C	B		C	B	B	F	B	
Approach Delay (s)		19.5			20.0			16.3			25.2	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.9
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	603	60	113	494	39	43	177	122	48	202	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5016		1770	5030		1770	1863	1583	1770	1818	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5016		1770	5030		1770	1863	1583	1770	1818	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	655	65	123	537	42	47	192	133	52	220	42
RTOR Reduction (vph)	0	8	0	0	6	0	0	0	99	0	4	0
Lane Group Flow (vph)	109	712	0	123	573	0	47	192	34	52	258	0
Turn Type	Prot			Prot			Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			
Actuated Green, G (s)	9.2	16.8		7.4	15.0		3.4	15.6	15.6	3.5	15.7	
Effective Green, g (s)	9.2	16.8		7.4	15.0		3.4	15.6	15.6	3.5	15.7	
Actuated g/C Ratio	0.15	0.28		0.12	0.25		0.06	0.26	0.26	0.06	0.26	
Clearance Time (s)	4.0	4.9		4.0	4.9		4.0	4.6	4.6	4.0	4.6	
Vehicle Extension (s)	1.0	2.0		1.0	2.0		1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)	268	1386		215	1241		99	478	406	102	469	
v/s Ratio Prot	0.06	c0.14		c0.07	0.11		0.03	0.10		c0.03	c0.14	
v/s Ratio Perm									0.02			
v/c Ratio	0.41	0.51		0.57	0.46		0.47	0.40	0.08	0.51	0.55	
Uniform Delay, d1	23.3	18.6		25.2	19.5		27.8	18.7	17.2	27.8	19.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.1		2.3	0.1		1.3	0.2	0.0	1.5	0.7	
Delay (s)	23.7	18.7		27.5	19.6		29.1	18.9	17.2	29.3	20.2	
Level of Service	C	B		C	B		C	B	B	C	C	
Approach Delay (s)		19.3			21.0			19.6			21.7	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	12.9
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑↑	↱	↰	↑↑		↰	↑↑	
Volume (vph)	0	300	135	143	403	38	195	75	0	17	49	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Lane Util. Factor		0.95	1.00	1.00	0.91	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	5085	1583	1770	3539		1770	3493	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.72	1.00		0.70	1.00	
Satd. Flow (perm)		3539	1583	1770	5085	1583	1336	3539		1306	3493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	326	147	155	438	41	212	82	0	18	53	5
RTOR Reduction (vph)	0	0	107	0	0	22	0	0	0	0	4	0
Lane Group Flow (vph)	0	326	40	155	438	19	212	82	0	18	54	0
Turn Type			Prot	Prot		Perm	Perm			Perm		
Protected Phases		2	2	1	6			8			4	
Permitted Phases						6	8			4		
Actuated Green, G (s)		10.6	10.6	4.0	18.6	18.6	10.6	10.6		10.6	10.6	
Effective Green, g (s)		10.6	10.6	4.0	18.6	18.6	10.6	10.6		10.6	10.6	
Actuated g/C Ratio		0.27	0.27	0.10	0.47	0.47	0.27	0.27		0.27	0.27	
Clearance Time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Vehicle Extension (s)		2.0	2.0	1.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		952	426	180	2401	747	359	952		351	940	
v/s Ratio Prot		c0.09	0.02	c0.09	0.09			0.02			0.02	
v/s Ratio Perm						0.01	c0.16			0.01		
v/c Ratio		0.34	0.09	0.86	0.18	0.03	0.59	0.09		0.05	0.06	
Uniform Delay, d1		11.6	10.8	17.4	6.0	5.6	12.5	10.8		10.7	10.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0	31.0	0.0	0.0	1.7	0.0		0.0	0.0	
Delay (s)		11.7	10.8	48.4	6.0	5.6	14.2	10.8		10.7	10.7	
Level of Service		B	B	D	A	A	B	B		B	B	
Approach Delay (s)		11.4			16.4			13.3			10.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	14.2
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰	↑↑↑	↱	↰	↑↑		↰	↑↑	
Volume (vph)	0	592	298	182	407	42	91	77	0	34	115	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Lane Util. Factor		0.95	1.00	1.00	0.91	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	5085	1583	1770	3539		1770	3539	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.67	1.00		0.70	1.00	
Satd. Flow (perm)		3539	1583	1770	5085	1583	1253	3539		1303	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	643	324	198	442	46	99	84	0	37	125	0
RTOR Reduction (vph)	0	0	203	0	0	19	0	0	0	0	0	0
Lane Group Flow (vph)	0	643	121	198	442	27	99	84	0	37	125	0
Turn Type			Prot	Prot		Perm	Perm			Perm		
Protected Phases		2	2	1	6			8			4	
Permitted Phases						6	8			4		
Actuated Green, G (s)		14.8	14.8	4.3	23.1	23.1	6.4	6.4		6.4	6.4	
Effective Green, g (s)		14.8	14.8	4.3	23.1	23.1	6.4	6.4		6.4	6.4	
Actuated g/C Ratio		0.37	0.37	0.11	0.58	0.58	0.16	0.16		0.16	0.16	
Clearance Time (s)		4.9	4.9	4.0	4.9	4.9	5.3	5.3		5.3	5.3	
Vehicle Extension (s)		2.0	2.0	1.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1319	590	192	2959	921	202	571		210	571	
v/s Ratio Prot		c0.18	0.08	c0.11	0.09			0.02			0.04	
v/s Ratio Perm						0.02	c0.08			0.03		
v/c Ratio		0.49	0.20	1.03	0.15	0.03	0.49	0.15		0.18	0.22	
Uniform Delay, d1		9.5	8.5	17.7	3.8	3.5	15.2	14.3		14.4	14.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.1	73.4	0.0	0.0	0.7	0.0		0.1	0.1	
Delay (s)		9.6	8.5	91.1	3.8	3.5	15.8	14.3		14.5	14.5	
Level of Service		A	A	F	A	A	B	B		B	B	
Approach Delay (s)		9.3			29.0			15.2			14.5	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	39.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑		↰	↑	↱
Volume (vph)	5	37	9	9	43	15	4	256	10	16	196	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.98			0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1809			1795		1770	1852		1770	1863	1583
Flt Permitted		0.97			0.95		0.62	1.00		0.58	1.00	1.00
Satd. Flow (perm)		1762			1726		1164	1852		1086	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	40	10	10	47	16	4	278	11	17	213	11
RTOR Reduction (vph)	0	7	0	0	12	0	0	2	0	0	0	6
Lane Group Flow (vph)	0	48	0	0	61	0	4	287	0	17	213	5
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		6
Actuated Green, G (s)		7.6			7.6		12.7	12.7		12.7	12.7	12.7
Effective Green, g (s)		7.6			7.6		12.7	12.7		12.7	12.7	12.7
Actuated g/C Ratio		0.26			0.26		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		454			445		501	797		468	802	681
v/s Ratio Prot								c0.16			0.11	
v/s Ratio Perm		0.03			c0.04		0.00			0.02		0.00
v/c Ratio		0.10			0.14		0.01	0.36		0.04	0.27	0.01
Uniform Delay, d1		8.4			8.4		4.8	5.7		4.9	5.4	4.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			0.3		0.0	0.6		0.1	0.4	0.0
Delay (s)		8.6			8.7		4.8	6.2		4.9	5.8	4.8
Level of Service		A			A		A	A		A	A	A
Approach Delay (s)		8.6			8.7			6.2			5.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	29.5	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Volume (vph)	9	80	22	20	81	31	7	268	22	19	238	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.97			0.97		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1805			1790		1770	1841		1770	1863	1583
Flt Permitted		0.97			0.95		0.60	1.00		0.57	1.00	1.00
Satd. Flow (perm)		1764			1707		1116	1841		1060	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	87	24	22	88	34	8	291	24	21	259	13
RTOR Reduction (vph)	0	11	0	0	14	0	0	4	0	0	0	7
Lane Group Flow (vph)	0	110	0	0	130	0	8	311	0	21	259	6
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		6
Actuated Green, G (s)		12.3			12.3		18.6	18.6		18.6	18.6	18.6
Effective Green, g (s)		12.3			12.3		18.6	18.6		18.6	18.6	18.6
Actuated g/C Ratio		0.31			0.31		0.46	0.46		0.46	0.46	0.46
Clearance Time (s)		4.6			4.6		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lane Grp Cap (vph)		541			524		518	854		492	864	734
v/s Ratio Prot								c0.17			0.14	
v/s Ratio Perm		0.06			c0.08		0.01			0.02		0.00
v/c Ratio		0.20			0.25		0.02	0.36		0.04	0.30	0.01
Uniform Delay, d1		10.3			10.4		5.8	6.9		5.9	6.7	5.8
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4			0.5		0.0	0.6		0.1	0.4	0.0
Delay (s)		10.7			11.0		5.8	7.5		6.0	7.1	5.8
Level of Service		B			B		A	A		A	A	A
Approach Delay (s)		10.7			11.0			7.5			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	200	24	12	105	23	7	255	15	44	495	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			0.95			0.95	
Frt	1.00	1.00	0.85	1.00	0.97			0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1812			3506			3459	
Flt Permitted	0.67	1.00	1.00	0.62	1.00			0.94			0.92	
Satd. Flow (perm)	1245	1863	1583	1160	1812			3289			3177	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	217	26	13	114	25	8	277	16	48	538	86
RTOR Reduction (vph)	0	0	17	0	15	0	0	8	0	0	24	0
Lane Group Flow (vph)	90	217	9	13	124	0	0	293	0	0	648	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)	11.8	11.8	11.8	11.8	11.8			13.9			13.9	
Effective Green, g (s)	11.8	11.8	11.8	11.8	11.8			13.9			13.9	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34			0.41			0.41	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	428	641	545	399	623			1333			1287	
v/s Ratio Prot		c0.12			0.07							
v/s Ratio Perm	0.07		0.01	0.01				0.09			c0.20	
v/c Ratio	0.21	0.34	0.02	0.03	0.20			0.22			0.50	
Uniform Delay, d1	8.0	8.4	7.4	7.5	7.9			6.7			7.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.0	0.1			0.0			0.1	
Delay (s)	8.0	8.5	7.4	7.5	8.0			6.7			7.7	
Level of Service	A	A	A	A	A			A			A	
Approach Delay (s)		8.3			7.9			6.7			7.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	34.3	Sum of lost time (s)	8.6
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	236	27	21	182	41	20	451	27	40	416	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			0.95			0.95	
Frt	1.00	1.00	0.85	1.00	0.97			0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1811			3504			3463	
Flt Permitted	0.61	1.00	1.00	0.60	1.00			0.92			0.88	
Satd. Flow (perm)	1132	1863	1583	1118	1811			3234			3077	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	257	29	23	198	45	22	490	29	43	452	66
RTOR Reduction (vph)	0	0	16	0	13	0	0	10	0	0	25	0
Lane Group Flow (vph)	82	257	13	23	230	0	0	531	0	0	536	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)	17.1	17.1	17.1	17.1	17.1			11.2			11.2	
Effective Green, g (s)	17.1	17.1	17.1	17.1	17.1			11.2			11.2	
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46			0.30			0.30	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6			4.0			4.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0			2.0			2.0	
Lane Grp Cap (vph)	525	863	734	518	839			982			934	
v/s Ratio Prot		c0.14			0.13							
v/s Ratio Perm	0.07		0.01	0.02				0.16			c0.17	
v/c Ratio	0.16	0.30	0.02	0.04	0.27			0.54			0.57	
Uniform Delay, d1	5.7	6.2	5.4	5.4	6.1			10.7			10.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.0	0.0	0.1			0.3			0.5	
Delay (s)	5.8	6.2	5.4	5.4	6.2			11.0			11.4	
Level of Service	A	A	A	A	A			B			B	
Approach Delay (s)		6.1			6.1			11.0			11.4	
Approach LOS		A			A			B			B	

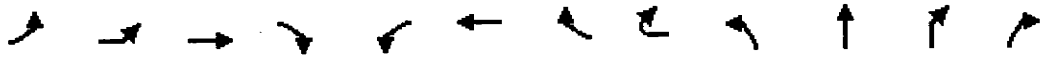
Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	8.6
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	67	12	14	143	15	14	272	11	13	190	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1821		1770	1837		1770	1852		1770	1846	
Flt Permitted	0.65	1.00		0.70	1.00		0.62	1.00		0.57	1.00	
Satd. Flow (perm)	1209	1821		1306	1837		1156	1852		1067	1846	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	73	13	15	155	16	15	296	12	14	207	13
RTOR Reduction (vph)	0	8	0	0	5	0	0	2	0	0	3	0
Lane Group Flow (vph)	15	78	0	15	166	0	15	306	0	14	217	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	12.3	12.3		12.3	12.3		18.1	18.1		18.1	18.1	
Effective Green, g (s)	12.3	12.3		12.3	12.3		18.1	18.1		18.1	18.1	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.46	0.46		0.46	0.46	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	376	566		406	571		528	846		488	844	
v/s Ratio Prot		0.04			c0.09			c0.17			0.12	
v/s Ratio Perm	0.01			0.01			0.01			0.01		
v/c Ratio	0.04	0.14		0.04	0.29		0.03	0.36		0.03	0.26	
Uniform Delay, d1	9.5	9.8		9.5	10.3		5.9	7.0		5.9	6.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.0	0.2		0.0	0.4		0.0	0.2	
Delay (s)	9.6	9.9		9.5	10.6		5.9	7.4		5.9	6.8	
Level of Service	A	A		A	B		A	A		A	A	
Approach Delay (s)		9.9			10.5			7.3			6.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	9.2
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	122	11	10	83	11	14	318	4	7	221	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1840		1770	1830		1770	1860		1770	1854	
Flt Permitted	0.69	1.00		0.66	1.00		0.61	1.00		0.53	1.00	
Satd. Flow (perm)	1287	1840		1238	1830		1127	1860		996	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	133	12	11	90	12	15	346	4	8	240	8
RTOR Reduction (vph)	0	4	0	0	6	0	0	1	0	0	2	0
Lane Group Flow (vph)	35	141	0	11	96	0	15	349	0	8	246	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)	12.2	12.2		12.2	12.2		18.7	18.7		18.7	18.7	
Effective Green, g (s)	12.2	12.2		12.2	12.2		18.7	18.7		18.7	18.7	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.6	4.6		4.6	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	392	560		377	557		526	867		464	865	
v/s Ratio Prot		c0.08			0.05			c0.19			0.13	
v/s Ratio Perm	0.03			0.01			0.01			0.01		
v/c Ratio	0.09	0.25		0.03	0.17		0.03	0.40		0.02	0.28	
Uniform Delay, d1	10.0	10.5		9.8	10.2		5.8	7.0		5.8	6.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2		0.0	0.1		0.0	0.4		0.0	0.2	
Delay (s)	10.0	10.7		9.8	10.3		5.8	7.5		5.8	6.8	
Level of Service	B	B		A	B		A	A		A	A	
Approach Delay (s)		10.6			10.3			7.4			6.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	40.1	Sum of lost time (s)	9.2
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	3	20	16	29	10	21	7	28	46	298	743	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.88	
Frt		1.00	0.90		1.00	0.91			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1680		1770	1689			1770	5085	2787	
Flt Permitted		0.72	1.00		0.73	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1336	1680		1351	1689			1770	5085	2787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	22	17	32	11	23	8	30	50	324	808	26
RTOR Reduction (vph)	0	0	29	0	0	27	0	0	0	0	1	0
Lane Group Flow (vph)	0	25	20	0	11	34	0	0	50	324	833	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		6.0	6.0		6.0	6.0			3.9	14.5	21.4	
Effective Green, g (s)		6.0	6.0		6.0	6.0			3.9	14.5	21.4	
Actuated g/C Ratio		0.09	0.09		0.09	0.09			0.06	0.22	0.33	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		122	154		124	154			105	1124	909	
v/s Ratio Prot			0.01			c0.02			0.03	c0.06	c0.30	
v/s Ratio Perm		0.02			0.01							
v/c Ratio		0.20	0.13		0.09	0.22			0.48	0.29	0.92	
Uniform Delay, d1		27.6	27.4		27.3	27.6			29.9	21.3	21.2	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		0.3	0.1		0.1	0.3			1.2	0.5	15.4	
Delay (s)		27.9	27.5		27.4	27.9			31.1	21.7	36.6	
Level of Service		C	C		C	C			C	C	D	
Approach Delay (s)			27.7			27.8				32.4		
Approach LOS			C			C				C		

Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	19.6
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations							
Volume (vph)	9	44	233	5	963	110	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1		4.7		
Lane Util. Factor		1.00	0.91		0.94		
Frt		1.00	1.00		0.98		
Flt Protected		0.95	1.00		0.96		
Satd. Flow (prot)		1770	5071		4920		
Flt Permitted		0.95	1.00		0.96		
Satd. Flow (perm)		1770	5071		4920		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	48	253	5	1047	120	80
RTOR Reduction (vph)	0	0	2	0	5	0	0
Lane Group Flow (vph)	0	58	256	0	1242	0	0
Turn Type	Prot	Prot					
Protected Phases	1	1	6		7		
Permitted Phases							
Actuated Green, G (s)		4.1	14.7		21.4		
Effective Green, g (s)		4.1	14.7		21.4		
Actuated g/C Ratio		0.06	0.22		0.33		
Clearance Time (s)		4.7	5.1		4.7		
Vehicle Extension (s)		2.0	6.8		8.0		
Lane Grp Cap (vph)		111	1136		1605		
v/s Ratio Prot		c0.03	0.05		0.25		
v/s Ratio Perm							
v/c Ratio		0.52	0.23		0.77		
Uniform Delay, d1		29.8	20.8		19.9		
Progression Factor		1.00	1.00		1.00		
Incremental Delay, d2		2.0	0.3		3.5		
Delay (s)		31.8	21.1		23.4		
Level of Service		C	C		C		
Approach Delay (s)			23.1		23.4		
Approach LOS			C		C		

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Volume (vph)	9	78	25	33	21	12	5	54	47	364	904	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Lane Util. Factor		1.00	1.00		1.00	1.00			1.00	0.91	0.88	
Frt		1.00	0.91		1.00	0.88			1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1703		1770	1631			1770	5085	2787	
Flt Permitted		0.71	1.00		0.72	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1317	1703		1334	1631			1770	5085	2787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	85	27	36	23	13	5	59	51	396	983	21
RTOR Reduction (vph)	0	0	32	0	0	53	0	0	0	0	1	0
Lane Group Flow (vph)	0	95	31	0	23	24	0	0	51	396	1003	0
Turn Type	Perm	Perm			Perm				Prot		Over	
Protected Phases			8			8			5	2	7	
Permitted Phases	8	8			8							
Actuated Green, G (s)		7.2	7.2		7.2	7.2			4.0	16.4	21.6	
Effective Green, g (s)		7.2	7.2		7.2	7.2			4.0	16.4	21.6	
Actuated g/C Ratio		0.10	0.10		0.10	0.10			0.06	0.24	0.31	
Clearance Time (s)		5.1	5.1		5.1	5.1			4.7	5.1	4.7	
Vehicle Extension (s)		0.2	0.2		0.2	0.2			2.0	6.8	8.0	
Lane Grp Cap (vph)		138	179		140	171			103	1216	878	
v/s Ratio Prot			0.02			0.01			c0.03	c0.08	c0.36	
v/s Ratio Perm		c0.07			0.02							
v/c Ratio		0.69	0.17		0.16	0.14			0.50	0.33	1.14	
Uniform Delay, d1		29.6	28.0		28.0	27.9			31.3	21.5	23.5	
Progression Factor		1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		10.8	0.2		0.2	0.1			1.4	0.5	77.8	
Delay (s)		40.4	28.1		28.2	28.0			32.7	22.1	101.3	
Level of Service		D	C		C	C			C	C	F	
Approach Delay (s)			35.5			28.1				77.3		
Approach LOS			D			C				E		

Intersection Summary			
HCM Average Control Delay	49.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Volume (vph)	35	4	320	5	1	891	34	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.1			4.7		
Lane Util. Factor		1.00	0.91			0.94		
Frt		1.00	1.00			0.99		
Flt Protected		0.95	1.00			0.95		
Satd. Flow (prot)		1770	5074			4976		
Flt Permitted		0.95	1.00			0.92		
Satd. Flow (perm)		1770	5074			4792		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	4	348	5	1	968	37	16
RTOR Reduction (vph)	0	0	2	0	0	1	0	0
Lane Group Flow (vph)	0	42	351	0	0	1021	0	0
Turn Type	Prot	Prot						
Protected Phases	1	1	6			7		
Permitted Phases								
Actuated Green, G (s)		3.8	16.2			21.6		
Effective Green, g (s)		3.8	16.2			21.6		
Actuated g/C Ratio		0.06	0.24			0.31		
Clearance Time (s)		4.7	5.1			4.7		
Vehicle Extension (s)		2.0	6.8			8.0		
Lane Grp Cap (vph)		98	1198			1509		
v/s Ratio Prot		0.02	0.07					
v/s Ratio Perm						0.21		
v/c Ratio		0.43	0.29			26.50dr		
Uniform Delay, d1		31.3	21.5			20.5		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		1.1	0.5			2.5		
Delay (s)		32.4	22.0			22.9		
Level of Service		C	C			C		
Approach Delay (s)			23.1			22.9		
Approach LOS			C			C		

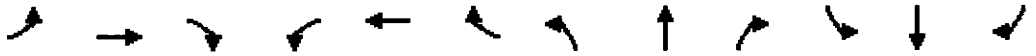
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↑↑↕						↑↑↕		↰	↑↑	
Volume (vph)	156	2261	27	0	0	0	0	250	95	147	571	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6		4.2	5.6	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5061						3393		1770	3539	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		5061						3393		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	2458	29	0	0	0	0	272	103	160	621	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	51	0	0	0	0
Lane Group Flow (vph)	0	2656	0	0	0	0	0	324	0	160	621	0
Turn Type	Split									Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases												
Actuated Green, G (s)		29.5						11.8		9.4	25.4	
Effective Green, g (s)		29.5						11.8		9.4	25.4	
Actuated g/C Ratio		0.45						0.18		0.14	0.38	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		4.1						3.2		2.0	4.3	
Lane Grp Cap (vph)		2259						606		252	1360	
v/s Ratio Prot		c0.52						0.10		c0.09	c0.18	
v/s Ratio Perm												
v/c Ratio		1.18						0.53		0.63	0.46	
Uniform Delay, d1		18.3						24.7		26.7	15.2	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		84.1						1.0		3.8	0.4	
Delay (s)		102.4						25.6		30.5	15.6	
Level of Service		F						C		C	B	
Approach Delay (s)		102.4			0.0			25.6			18.6	
Approach LOS		F			A			C			B	

Intersection Summary			
HCM Average Control Delay	77.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	9.8
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	2039	49	0	0	0	0	416	153	184	479	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6		4.2	5.6	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5056						3397		1770	3539	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		5056						3397		1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	2216	53	0	0	0	0	452	166	200	521	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	31	0	0	0	0
Lane Group Flow (vph)	0	2379	0	0	0	0	0	587	0	200	521	0
Turn Type	Split									Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases												
Actuated Green, G (s)		29.5						18.8		10.4	33.4	
Effective Green, g (s)		29.5						18.8		10.4	33.4	
Actuated g/C Ratio		0.40						0.25		0.14	0.45	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		4.1						3.2		2.0	4.3	
Lane Grp Cap (vph)		2013						862		248	1595	
v/s Ratio Prot		c0.47						c0.17		c0.11	0.15	
v/s Ratio Perm												
v/c Ratio		1.18						0.68		0.81	0.33	
Uniform Delay, d1		22.3						24.9		30.9	13.1	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		87.3						2.3		16.3	0.2	
Delay (s)		109.6						27.2		47.2	13.3	
Level of Service		F						C		D	B	
Approach Delay (s)		109.6			0.0			27.2			22.7	
Approach LOS		F			A			C			C	

Intersection Summary			
HCM Average Control Delay	79.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	15.4
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	259	2068	35	0	0	0	0	393	144	122	553	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6	5.6	4.2	5.6	
Lane Util. Factor		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		0.99						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5046						3539	1583	1770	3539	
Flt Permitted		0.99						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5046						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	2248	38	0	0	0	0	427	157	133	601	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	61	0	0	0
Lane Group Flow (vph)	0	2566	0	0	0	0	0	427	96	133	601	0
Turn Type	Split								Perm	Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases									8			
Actuated Green, G (s)		30.1						18.3	18.3	7.4	29.9	
Effective Green, g (s)		30.1						18.3	18.3	7.4	29.9	
Actuated g/C Ratio		0.42						0.26	0.26	0.10	0.42	
Clearance Time (s)		5.6						5.6	5.6	4.2	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2133						910	407	184	1486	
v/s Ratio Prot		c0.51						c0.12		c0.08	0.17	
v/s Ratio Perm									0.06			
v/c Ratio		1.20						0.47	0.24	0.72	0.40	
Uniform Delay, d1		20.6						22.3	20.9	30.9	14.4	
Progression Factor		1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2		96.2						0.9	0.7	11.2	0.2	
Delay (s)		116.7						23.2	21.6	42.1	14.7	
Level of Service		F						C	C	D	B	
Approach Delay (s)		116.7			0.0			22.8			19.6	
Approach LOS		F			A			C			B	

Intersection Summary			
HCM Average Control Delay	84.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	15.4
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑	↱	↰	↑↑	
Volume (vph)	235	2139	49	0	0	0	0	686	241	186	747	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6						5.6	5.6	4.2	5.6	
Lane Util. Factor		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5046						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5046						3539	1583	1770	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	2325	53	0	0	0	0	746	262	202	812	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	29	0	0	0
Lane Group Flow (vph)	0	2630	0	0	0	0	0	746	233	202	812	0
Turn Type	Split								Perm	Prot		
Protected Phases	2	2						8		7	4	
Permitted Phases									8			
Actuated Green, G (s)		29.4						23.8	23.8	10.5	38.5	
Effective Green, g (s)		29.4						23.8	23.8	10.5	38.5	
Actuated g/C Ratio		0.37						0.30	0.30	0.13	0.49	
Clearance Time (s)		5.6						5.6	5.6	4.2	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		1876						1065	476	235	1723	
v/s Ratio Prot		c0.52						c0.21		c0.11	0.23	
v/s Ratio Perm									0.15			
v/c Ratio		1.40						0.70	0.49	0.86	0.47	
Uniform Delay, d1		24.8						24.5	22.7	33.6	13.5	
Progression Factor		1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2		184.3						2.8	1.8	24.6	0.3	
Delay (s)		209.1						27.3	24.5	58.2	13.8	
Level of Service		F						C	C	E	B	
Approach Delay (s)		209.1			0.0			26.5			22.6	
Approach LOS		F			A			C			C	

Intersection Summary			
HCM Average Control Delay	129.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	15.4
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	9	3	8	5	2	8	5	255	4	4	221	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	3	9	5	2	9	5	277	4	4	240	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								722			817	
pX, platoon unblocked												
vC, conflicting volume	553	545	244	553	547	279	248			282		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	553	545	244	553	547	279	248			282		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	98	99	99	99	100	99	100			100		
cM capacity (veh/h)	435	442	795	434	441	759	1318			1281		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	16	287	252
Volume Left	10	5	5	4
Volume Right	9	9	4	8
cSH	533	564	1318	1281
Volume to Capacity	0.04	0.03	0.00	0.00
Queue Length 95th (ft)	3	2	0	0
Control Delay (s)	12.0	11.6	0.2	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	12.0	11.6	0.2	0.2
Approach LOS	B	B		

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	26.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Volume (veh/h)	4	0	3	9	3	8	4	370	2	5	230	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	3	10	3	9	4	402	2	5	250	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)								722			817	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95	1.00	0.95			1.00		
vC, conflicting volume	686	677	253	679	678	403	255			404		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	640	630	184	632	632	403	187			404		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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	100	97	99	99	100			100		
cM capacity (veh/h)	358	375	814	369	374	647	1315			1154		

Direction, Lane #	EB	WB	NB	SB
Volume Total	8	22	409	261
Volume Left	4	10	4	5
Volume Right	3	9	2	5
cSH	472	446	1315	1154
Volume to Capacity	0.02	0.05	0.00	0.00
Queue Length 95th (ft)	1	4	0	0
Control Delay (s)	12.8	13.5	0.1	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	12.8	13.5	0.1	0.2
Approach LOS	B	B		

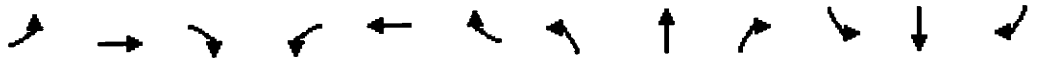
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑					↰	✥	
Volume (vph)	0	1538	802	0	1686	668	0	0	0	187	0	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.4		4.4					4.1	4.0	
Lane Util. Factor		0.86	0.86		0.91					0.95	0.95	
Frt		0.98	0.85		0.96					1.00	0.86	
Flt Protected		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (prot)		4697	1362		4869					1681	1522	
Flt Permitted		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (perm)		4697	1362		4869					1681	1522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1672	872	0	1833	726	0	0	0	203	0	192
RTOR Reduction (vph)	0	21	212	0	67	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	1947	364	0	2492	0	0	0	0	183	208	0
Turn Type			Perm							Prot		
Protected Phases		2			6					4		
Permitted Phases			2									
Actuated Green, G (s)		35.7	35.7		35.7					12.3	12.3	
Effective Green, g (s)		35.7	35.7		35.7					12.3	12.3	
Actuated g/C Ratio		0.63	0.63		0.63					0.22	0.22	
Clearance Time (s)		4.4	4.4		4.4					4.1		
Vehicle Extension (s)		4.5	4.5		4.5					4.1		
Lane Grp Cap (vph)		2968	861		3077					366	331	
v/s Ratio Prot		0.41			c0.51					0.11	0.14	
v/s Ratio Perm			0.27									
v/c Ratio		0.66	0.42		0.81					0.50	0.63	
Uniform Delay, d1		6.5	5.2		7.8					19.4	20.0	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		0.6	0.6		1.9					1.5	4.3	
Delay (s)		7.2	5.8		9.7					20.9	24.3	
Level of Service		A	A		A					C	C	
Approach Delay (s)		6.9			9.7			0.0			22.8	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	8.4
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑					↰	↕	
Volume (vph)	0	1391	959	0	2333	673	0	0	0	196	0	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.4		4.4					4.1	4.0	
Lane Util. Factor		0.86	0.86		0.91					0.95	0.95	
Frt		0.97	0.85		0.97					1.00	0.86	
Flt Protected		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (prot)		4638	1362		4914					1681	1517	
Flt Permitted		1.00	1.00		1.00					0.95	1.00	
Satd. Flow (perm)		4638	1362		4914					1681	1517	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1512	1042	0	2536	732	0	0	0	213	0	292
RTOR Reduction (vph)	0	51	217	0	49	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	1919	367	0	3219	0	0	0	0	192	312	0
Turn Type			Perm							Prot		
Protected Phases		2			6					4		
Permitted Phases			2									
Actuated Green, G (s)		35.7	35.7		35.7					12.6	12.6	
Effective Green, g (s)		35.7	35.7		35.7					12.6	12.6	
Actuated g/C Ratio		0.63	0.63		0.63					0.22	0.22	
Clearance Time (s)		4.4	4.4		4.4					4.1		
Vehicle Extension (s)		4.5	4.5		4.5					4.1		
Lane Grp Cap (vph)		2915	856		3089					373	337	
v/s Ratio Prot		0.41			c0.66					0.11	0.21	
v/s Ratio Perm			0.27									
v/c Ratio		0.66	0.43		1.04					0.51	0.93	
Uniform Delay, d1		6.7	5.4		10.5					19.4	21.6	
Progression Factor		1.00	1.00		1.00					1.00	1.00	
Incremental Delay, d2		0.7	0.6		28.5					1.7	31.0	
Delay (s)		7.3	6.0		39.1					21.1	52.6	
Level of Service		A	A		D					C	D	
Approach Delay (s)		7.0			39.1			0.0			40.6	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.4
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	330	1409	0	0	1270	419	792	0	0	217	0	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Lane Util. Factor	0.97	0.91			0.91	1.00	0.97			0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00			1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	3433			3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (perm)	3433	5085			5085	1583	3433			3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	1532	0	0	1380	455	861	0	0	236	0	320
RTOR Reduction (vph)	0	0	0	0	0	327	0	0	0	0	0	9
Lane Group Flow (vph)	359	1532	0	0	1380	128	861	0	0	236	0	311
Turn Type	Prot					Over	Prot			Prot		Over
Protected Phases	5	2			6	4	8			4		5
Permitted Phases												
Actuated Green, G (s)	19.8	60.1			35.1	27.8	27.8			27.8		19.8
Effective Green, g (s)	19.8	60.1			35.1	27.8	27.8			27.8		19.8
Actuated g/C Ratio	0.20	0.61			0.36	0.28	0.28			0.28		0.20
Clearance Time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		2.0
Lane Grp Cap (vph)	689	3096			1808	446	967			967		318
v/s Ratio Prot	0.10	0.30			c0.27	0.08	c0.25			0.07		c0.20
v/s Ratio Perm												
v/c Ratio	0.52	0.49			0.76	0.29	0.89			0.24		0.98
Uniform Delay, d1	35.2	10.8			28.1	27.7	34.0			27.3		39.2
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00		1.00
Incremental Delay, d2	0.3	0.2			2.2	0.6	10.4			0.2		44.0
Delay (s)	35.5	11.0			30.3	28.3	44.4			27.6		83.2
Level of Service	D	B			C	C	D			C		F
Approach Delay (s)		15.7			29.8			44.4			59.6	
Approach LOS		B			C			D			E	

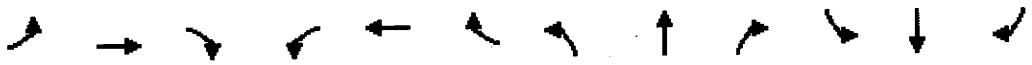
Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	425	1214	0	0	2002	396	774	0	0	481	0	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Lane Util. Factor	0.97	0.91			0.91	1.00	0.97			0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00			1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	3433			3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95			0.95		1.00
Satd. Flow (perm)	3433	5085			5085	1583	3433			3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	462	1320	0	0	2176	430	841	0	0	523	0	516
RTOR Reduction (vph)	0	0	0	0	0	217	0	0	0	0	0	8
Lane Group Flow (vph)	462	1320	0	0	2176	213	841	0	0	523	0	508
Turn Type	Prot					Over	Prot			Prot		Over
Protected Phases	5	2			6	4	8			4		5
Permitted Phases												
Actuated Green, G (s)	19.8	60.1			35.1	27.5	27.5			27.5		19.8
Effective Green, g (s)	19.8	60.1			35.1	27.5	27.5			27.5		19.8
Actuated g/C Ratio	0.20	0.61			0.36	0.28	0.28			0.28		0.20
Clearance Time (s)	5.2	4.9			4.9	5.9	5.9			5.9		5.2
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		2.0
Lane Grp Cap (vph)	691	3106			1814	442	959			959		319
v/s Ratio Prot	0.13	0.26			c0.43	0.13	c0.24			0.15		c0.32
v/s Ratio Perm												
v/c Ratio	0.67	0.42			1.20	0.48	0.88			0.55		1.59
Uniform Delay, d1	36.3	10.1			31.6	29.5	33.8			30.1		39.3
Progression Factor	1.00	1.00			1.00	1.00	1.00			1.00		1.00
Incremental Delay, d2	1.9	0.2			95.4	1.4	9.2			1.0		281.0
Delay (s)	38.2	10.2			127.1	31.0	43.1			31.1		320.3
Level of Service	D	B			F	C	D			C		F
Approach Delay (s)		17.5			111.2			43.1			174.7	
Approach LOS		B			F			D			F	

Intersection Summary			
HCM Average Control Delay	85.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1929	473	611	1307	4	329	9	485	15	17	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	
Satd. Flow (prot)	1770	3539	1583	3433	3538		1681	1690	1583		1751	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	
Satd. Flow (perm)	1770	3539	1583	3433	3538		1681	1690	1583		1751	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	2097	514	664	1421	4	358	10	527	16	18	17
RTOR Reduction (vph)	0	0	117	0	0	0	0	0	410	0	14	0
Lane Group Flow (vph)	30	2097	397	664	1425	0	183	185	117	0	37	0
Turn Type	Prot		Perm	Prot			Split		Over	Split		
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2									
Actuated Green, G (s)	11.9	56.2	56.2	19.9	66.2		20.2	20.2	19.9		5.6	
Effective Green, g (s)	11.9	56.2	56.2	19.9	66.2		20.2	20.2	19.9		5.6	
Actuated g/C Ratio	0.10	0.46	0.46	0.16	0.54		0.16	0.16	0.16		0.05	
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	
Lane Grp Cap (vph)	171	1613	722	554	1900		275	277	255		80	
v/s Ratio Prot	0.02	c0.59		c0.19	0.40		0.11	c0.11	0.07		c0.02	
v/s Ratio Perm			0.25									
v/c Ratio	0.18	1.30	0.55	1.20	0.75		0.67	0.67	0.46		0.46	
Uniform Delay, d1	51.2	33.6	24.4	51.7	22.1		48.4	48.4	46.8		57.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.2	139.7	1.8	105.9	2.2		8.7	8.7	0.5		1.5	
Delay (s)	51.4	173.3	26.2	157.6	24.3		57.0	57.1	47.3		58.9	
Level of Service	D	F	C	F	C		E	E	D		E	
Approach Delay (s)		143.2			66.7			51.3			58.9	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM Average Control Delay	99.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	123.3	Sum of lost time (s)	21.4
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	1688	463	542	1790	13	622	10	478	21	22	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	
Satd. Flow (prot)	1770	3539	1583	3433	3535		1681	1688	1583		1755	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	
Satd. Flow (perm)	1770	3539	1583	3433	3535		1681	1688	1583		1755	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	1835	503	589	1946	14	676	11	520	23	24	21
RTOR Reduction (vph)	0	0	136	0	1	0	0	0	403	0	12	0
Lane Group Flow (vph)	42	1835	367	589	1959	0	345	342	117	0	56	0
Turn Type	Prot		Perm	Prot			Split		Over	Split		
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2									
Actuated Green, G (s)	16.3	55.2	55.2	19.8	60.7		24.1	24.1	19.8		6.7	
Effective Green, g (s)	16.3	55.2	55.2	19.8	60.7		24.1	24.1	19.8		6.7	
Actuated g/C Ratio	0.13	0.43	0.43	0.16	0.48		0.19	0.19	0.16		0.05	
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	
Lane Grp Cap (vph)	227	1536	687	534	1687		318	320	246		92	
v/s Ratio Prot	0.02	c0.52		0.17	c0.55		c0.21	0.20	0.07		c0.03	
v/s Ratio Perm			0.23									
v/c Ratio	0.19	1.19	0.53	1.10	1.16		1.08	1.07	0.48		0.61	
Uniform Delay, d1	49.5	36.0	26.5	53.7	33.2		51.6	51.6	49.0		59.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.1	94.3	1.8	70.2	79.7		75.0	69.7	0.5		7.5	
Delay (s)	49.7	130.3	28.3	123.9	112.9		126.6	121.3	49.5		66.4	
Level of Service	D	F	C	F	F		F	F	D		E	
Approach Delay (s)		107.3			115.5			91.9			66.4	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM Average Control Delay	107.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	127.2	Sum of lost time (s)	21.1
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	299	1646	108	84	399	0	0	471	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		3.7	4.6			4.6	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5009		1770	3539			3471	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					5009		1770	3539			3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	325	1789	117	91	434	0	0	512	75
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	0	2225	0	91	434	0	0	574	0
Turn Type				Split			Prot					
Protected Phases				6	6		3	8			4	
Permitted Phases												
Actuated Green, G (s)					31.1		6.8	30.8			20.3	
Effective Green, g (s)					31.1		6.8	30.8			20.3	
Actuated g/C Ratio					0.44		0.10	0.43			0.29	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2191		169	1533			991	
v/s Ratio Prot					c0.44		c0.05	0.12			c0.17	
v/s Ratio Perm												
v/c Ratio					1.02		0.54	0.28			0.58	
Uniform Delay, d1					20.0		30.7	13.0			21.7	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					23.2		1.7	0.1			1.3	
Delay (s)					43.2		32.3	13.1			23.1	
Level of Service					D		C	B			C	
Approach Delay (s)		0.0			43.2			16.4			23.1	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.9
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑			↑↑↱	
Volume (vph)	0	0	0	230	1917	63	129	386	0	0	410	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		3.7	4.6			4.6	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.97	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					5037		1770	3539			3423	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					5037		1770	3539			3423	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	250	2084	68	140	420	0	0	446	125
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	0	0	0	2399	0	140	420	0	0	542	0
Turn Type				Split			Prot					
Protected Phases				6	6		3	8			4	
Permitted Phases												
Actuated Green, G (s)					30.7		10.3	34.5			20.5	
Effective Green, g (s)					30.7		10.3	34.5			20.5	
Actuated g/C Ratio					0.41		0.14	0.46			0.28	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2078		245	1641			943	
v/s Ratio Prot					c0.48		c0.08	0.12			c0.16	
v/s Ratio Perm												
v/c Ratio					1.15		0.57	0.26			0.57	
Uniform Delay, d1					21.8		30.0	12.1			23.2	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					75.5		2.0	0.1			1.4	
Delay (s)					97.3		32.0	12.2			24.6	
Level of Service					F		C	B			C	
Approach Delay (s)		0.0			97.3			17.2			24.6	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	72.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	12.9
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	191	2176	67	107	574	0	0	544	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		4.2	4.6			4.6	4.6
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5044		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					5044		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	208	2365	73	116	624	0	0	591	150
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	72
Lane Group Flow (vph)	0	0	0	0	2643	0	116	624	0	0	591	78
Turn Type				Split			Prot					Prot
Protected Phases				6	6		3	8			4	4
Permitted Phases												
Actuated Green, G (s)					31.1		7.8	33.9			21.9	21.9
Effective Green, g (s)					31.1		7.8	33.9			21.9	21.9
Actuated g/C Ratio					0.42		0.11	0.46			0.30	0.30
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2114		186	1617			1045	467
v/s Ratio Prot					c0.52		c0.07	0.18			c0.17	0.05
v/s Ratio Perm												
v/c Ratio					1.25		0.62	0.39			0.57	0.17
Uniform Delay, d1					21.6		31.8	13.3			22.1	19.4
Progression Factor					1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2					116.7		4.6	0.2			1.2	0.4
Delay (s)					138.3		36.4	13.4			23.3	19.8
Level of Service					F		D	B			C	B
Approach Delay (s)		0.0			138.3			17.0			22.6	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	95.8	HCM Level of Service	F
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	13.4
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	174	1949	100	200	732	0	0	740	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.6		4.2	4.6			4.6	4.6
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frt					0.99		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5031		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					5031		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	189	2118	109	217	796	0	0	804	191
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	67
Lane Group Flow (vph)	0	0	0	0	2411	0	217	796	0	0	804	124
Turn Type				Split			Prot					Prot
Protected Phases				6	6		3	8			4	4
Permitted Phases												
Actuated Green, G (s)					30.5		14.4	43.5			24.9	24.9
Effective Green, g (s)					30.5		14.4	43.5			24.9	24.9
Actuated g/C Ratio					0.37		0.17	0.52			0.30	0.30
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					1844		306	1850			1059	474
v/s Ratio Prot					c0.48		c0.12	0.22			c0.23	0.08
v/s Ratio Perm												
v/c Ratio					1.31		0.71	0.43			0.76	0.26
Uniform Delay, d1					26.4		32.4	12.2			26.4	22.2
Progression Factor					1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2					142.4		6.0	0.2			3.9	0.7
Delay (s)					168.7		38.5	12.4			30.3	22.8
Level of Service					F		D	B			C	C
Approach Delay (s)		0.0			168.7			18.0			28.9	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM Average Control Delay	102.8	HCM Level of Service	F
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	13.4
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	EBR2	NBT	NBR	SBL2	SBT	SBR	NWR2
Lane Configurations										
Volume (vph)	23	165	8	2	349	152	67	605	20	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Lane Util. Factor		0.91			0.91	0.91	1.00	0.95		1.00
Frt		0.99			0.99	0.85	1.00	1.00		0.86
Flt Protected		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)		5017			3368	1441	1770	3522		1611
Flt Permitted		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)		5017			3368	1441	1770	3522		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	179	9	2	379	165	73	658	22	18
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	215	0	0	396	148	73	680	0	4
Turn Type	Perm					Perm	Prot			custom
Protected Phases		4			2		1	6		
Permitted Phases	4					2				8
Actuated Green, G (s)		12.4			20.3	20.3	4.3	21.3		12.4
Effective Green, g (s)		12.4			20.3	20.3	4.3	21.3		12.4
Actuated g/C Ratio		0.24			0.40	0.40	0.08	0.42		0.24
Clearance Time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Vehicle Extension (s)		2.0			2.0	2.0	3.0	2.0		2.0
Lane Grp Cap (vph)		1225			1346	576	150	1477		393
v/s Ratio Prot					c0.12		0.04	c0.19		
v/s Ratio Perm		0.04				0.10				0.00
v/c Ratio		0.18			0.29	0.26	0.49	0.46		0.01
Uniform Delay, d1		15.2			10.4	10.2	22.2	10.6		14.6
Progression Factor		1.00			1.00	1.00	1.15	0.51		1.00
Incremental Delay, d2		0.0			0.0	0.1	2.5	0.1		0.0
Delay (s)		15.2			10.4	10.3	28.0	5.5		14.6
Level of Service		B			B	B	C	A		B
Approach Delay (s)		15.2			10.4			7.7		
Approach LOS		B			B			A		

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	9.8
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
50: Monterey Street & Beale Ave

2/1/2011

Movement	EBL	EBT	EBR	EBR2	NBT	NBR	SBL2	SBT	SBR	NWR2
Lane Configurations										
Volume (vph)	60	358	10	16	572	260	61	551	17	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Lane Util. Factor		0.91			0.91	0.91	1.00	0.95		1.00
Frt		0.99			0.99	0.85	1.00	1.00		0.86
Flt Protected		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (prot)		5007			3368	1441	1770	3524		1611
Flt Permitted		0.99			1.00	1.00	0.95	1.00		1.00
Satd. Flow (perm)		5007			3368	1441	1770	3524		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	389	11	17	622	283	66	599	18	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	482	0	0	650	255	66	617	0	6
Turn Type	Perm					Perm	Prot			custom
Protected Phases		4			2		1	6		
Permitted Phases	4					2				8
Actuated Green, G (s)		13.3			22.4	22.4	3.6	19.8		13.3
Effective Green, g (s)		13.3			22.4	22.4	3.6	19.8		13.3
Actuated g/C Ratio		0.25			0.42	0.42	0.07	0.37		0.25
Clearance Time (s)		4.9			4.9	4.9	4.0	4.9		4.9
Vehicle Extension (s)		2.0			2.0	2.0	1.0	2.0		2.0
Lane Grp Cap (vph)		1254			1421	608	120	1314		404
v/s Ratio Prot					c0.19		0.04	c0.18		
v/s Ratio Perm		0.10				0.18				0.00
v/c Ratio		0.38			0.46	0.42	0.55	0.47		0.01
Uniform Delay, d1		16.5			11.0	10.8	24.0	12.7		15.0
Progression Factor		1.00			1.00	1.00	1.30	0.44		1.00
Incremental Delay, d2		0.1			0.1	0.2	3.0	0.1		0.0
Delay (s)		16.6			11.1	11.0	34.2	5.7		15.0
Level of Service		B			B	B	C	A		B
Approach Delay (s)		16.6			11.0			8.5		
Approach LOS		B			B			A		

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	9.8
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

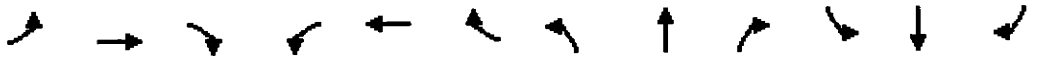
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	956	58	0	298	72	35	188	37	94	152	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.99			0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5042			4937		1770	3452		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5042			4937		1770	3452		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1039	63	0	324	78	38	204	40	102	165	55
RTOR Reduction (vph)	0	8	0	0	45	0	0	20	0	0	0	45
Lane Group Flow (vph)	112	1094	0	0	357	0	38	224	0	102	165	10
Turn Type	Prot						Split			Split		Perm
Protected Phases	1	6			2		4	4		8	8	
Permitted Phases												8
Actuated Green, G (s)	7.1	29.6			18.8		11.1	11.1		12.0	12.0	12.0
Effective Green, g (s)	7.1	29.6			18.8		11.1	11.1		12.0	12.0	12.0
Actuated g/C Ratio	0.11	0.44			0.28		0.17	0.17		0.18	0.18	0.18
Clearance Time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	1.5	4.5			4.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	188	2234			1389		294	574		318	335	284
v/s Ratio Prot	c0.06	c0.22			0.07		0.02	c0.06		0.06	c0.09	
v/s Ratio Perm												0.01
v/c Ratio	0.60	0.49			0.26		0.13	0.39		0.32	0.49	0.03
Uniform Delay, d1	28.5	13.2			18.6		23.7	24.8		23.9	24.7	22.6
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.4	0.3			0.2		0.2	0.4		0.6	1.1	0.1
Delay (s)	31.8	13.5			18.8		23.9	25.3		24.4	25.8	22.7
Level of Service	C	B			B		C	C		C	C	C
Approach Delay (s)		15.2			18.8			25.1			24.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	12.9
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	1337	59	0	411	90	73	207	82	87	201	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.99			0.97		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5053			4948		1770	3389		1770	1863	1583
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5053			4948		1770	3389		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	1453	64	0	447	98	79	225	89	95	218	62
RTOR Reduction (vph)	0	5	0	0	34	0	0	52	0	0	0	51
Lane Group Flow (vph)	114	1512	0	0	511	0	79	262	0	95	218	11
Turn Type	Prot						Split			Split		Perm
Protected Phases	1	6			2		4	4		8	8	
Permitted Phases												8
Actuated Green, G (s)	7.8	39.1			27.6		12.1	12.1		13.4	13.4	13.4
Effective Green, g (s)	7.8	39.1			27.6		12.1	12.1		13.4	13.4	13.4
Actuated g/C Ratio	0.10	0.50			0.35		0.15	0.15		0.17	0.17	0.17
Clearance Time (s)	3.7	4.9			4.9		4.6	4.6		4.6	4.6	4.6
Vehicle Extension (s)	1.5	4.5			4.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	175	2510			1735		272	521		301	317	270
v/s Ratio Prot	0.06	c0.30			0.10		0.04	c0.08		0.05	c0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.65	0.60			0.29		0.29	0.50		0.32	0.69	0.04
Uniform Delay, d1	34.1	14.2			18.5		29.5	30.5		28.6	30.7	27.3
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.5	0.5			0.2		0.6	0.8		0.6	6.1	0.1
Delay (s)	40.6	14.8			18.7		30.1	31.3		29.2	36.8	27.3
Level of Service	D	B			B		C	C		C	D	C
Approach Delay (s)		16.6			18.7			31.1			33.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	14.1
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	218	30	0	0	0	0	589	154	168	1199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1						4.4		3.7	4.4	
Lane Util. Factor	1.00	0.91						0.91		1.00	0.91	
Frt	1.00	0.98						0.97		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1770	4992						4927		1770	5085	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1770	4992						4927		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	237	33	0	0	0	0	640	167	183	1303	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	54	0	0	0	0
Lane Group Flow (vph)	283	249	0	0	0	0	0	753	0	183	1303	0
Turn Type	Split									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)	15.0	15.0						18.9		10.8	33.4	
Effective Green, g (s)	15.0	15.0						18.9		10.8	33.4	
Actuated g/C Ratio	0.26	0.26						0.33		0.19	0.59	
Clearance Time (s)	4.1	4.1						4.4		3.7	4.4	
Vehicle Extension (s)	3.0	3.0						4.0		2.0	4.0	
Lane Grp Cap (vph)	467	1316						1637		336	2985	
v/s Ratio Prot	c0.16	0.05						0.15		c0.10	c0.26	
v/s Ratio Perm												
v/c Ratio	0.61	0.19						0.46		0.54	0.44	
Uniform Delay, d1	18.4	16.2						15.0		20.8	6.5	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1						0.3		1.0	0.1	
Delay (s)	20.6	16.3						15.3		21.8	6.7	
Level of Service	C	B						B		C	A	
Approach Delay (s)		18.5			0.0			15.3			8.5	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	7.8
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	197	245	31	0	0	0	0	823	397	318	794	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1						4.4		3.7	4.4	
Lane Util. Factor	1.00	0.91						0.91		1.00	0.91	
Frt	1.00	0.98						0.95		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1770	4999						4837		1770	5085	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1770	4999						4837		1770	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	214	266	34	0	0	0	0	895	432	346	863	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	95	0	0	0	0
Lane Group Flow (vph)	214	279	0	0	0	0	0	1232	0	346	863	0
Turn Type	Split									Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)	14.1	14.1						25.4		17.4	46.5	
Effective Green, g (s)	14.1	14.1						25.4		17.4	46.5	
Actuated g/C Ratio	0.20	0.20						0.37		0.25	0.67	
Clearance Time (s)	4.1	4.1						4.4		3.7	4.4	
Vehicle Extension (s)	3.0	3.0						4.0		2.0	4.0	
Lane Grp Cap (vph)	361	1020						1778		446	3422	
v/s Ratio Prot	c0.12	0.06						c0.25		c0.20	0.17	
v/s Ratio Perm												
v/c Ratio	0.59	0.27						0.69		0.78	0.25	
Uniform Delay, d1	24.9	23.2						18.5		24.0	4.5	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.1						1.3		7.5	0.1	
Delay (s)	27.5	23.3						19.8		31.6	4.5	
Level of Service	C	C						B		C	A	
Approach Delay (s)		25.1			0.0			19.8			12.3	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	12.2
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	254	241	47	48	321	0	0	448	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9		4.0	4.9			4.9	
Lane Util. Factor				0.91	0.91		1.00	0.95			0.95	
Frt				1.00	0.98		1.00	1.00			0.99	
Flt Protected				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (prot)				1610	3290		1770	3539			3514	
Flt Permitted				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (perm)				1610	3290		1770	3539			3514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	276	262	51	52	349	0	0	487	24
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	193	386	0	52	349	0	0	508	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Actuated Green, G (s)				12.4	12.4		3.3	20.3			21.3	
Effective Green, g (s)				12.4	12.4		3.3	20.3			21.3	
Actuated g/C Ratio				0.24	0.24		0.06	0.40			0.42	
Clearance Time (s)				4.9	4.9		4.0	4.9			4.9	
Vehicle Extension (s)				2.0	2.0		1.0	2.0			2.0	
Lane Grp Cap (vph)				393	803		115	1414			1473	
v/s Ratio Prot							c0.03	0.10			c0.14	
v/s Ratio Perm				c0.12	0.12							
v/c Ratio				0.49	0.48		0.45	0.25			0.34	
Uniform Delay, d1				16.5	16.4		22.9	10.2			10.0	
Progression Factor				1.00	1.00		0.60	0.76			1.00	
Incremental Delay, d2				0.4	0.2		1.0	0.0			0.1	
Delay (s)				16.8	16.6		14.8	7.7			10.1	
Level of Service				B	B		B	A			B	
Approach Delay (s)		0.0			16.7			8.6			10.1	
Approach LOS		A			B			A			B	

HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	13.8
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	221	245	66	43	584	0	0	401	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.9	4.9		4.0	4.9			4.9	
Lane Util. Factor				0.91	0.91		1.00	0.95			0.95	
Frt				1.00	0.97		1.00	1.00			0.99	
Flt Protected				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (prot)				1610	3275		1770	3539			3493	
Flt Permitted				0.95	0.99		0.95	1.00			1.00	
Satd. Flow (perm)				1610	3275		1770	3539			3493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	240	266	72	47	635	0	0	436	42
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	192	370	0	47	635	0	0	472	0
Turn Type				Perm			Prot					
Protected Phases					8		5	2			6	
Permitted Phases				8								
Actuated Green, G (s)				13.3	13.3		6.2	22.4			19.8	
Effective Green, g (s)				13.3	13.3		6.2	22.4			19.8	
Actuated g/C Ratio				0.25	0.25		0.12	0.42			0.37	
Clearance Time (s)				4.9	4.9		4.0	4.9			4.9	
Vehicle Extension (s)				2.0	2.0		1.0	2.0			2.0	
Lane Grp Cap (vph)				403	820		207	1493			1302	
v/s Ratio Prot							0.03	c0.18			c0.14	
v/s Ratio Perm				c0.12	0.11							
v/c Ratio				0.48	0.45		0.23	0.43			0.36	
Uniform Delay, d1				16.9	16.8		21.3	10.8			12.1	
Progression Factor				1.00	1.00		0.50	0.49			1.00	
Incremental Delay, d2				0.3	0.1		0.2	0.1			0.1	
Delay (s)				17.3	17.0		10.8	5.3			12.1	
Level of Service				B	B		B	A			B	
Approach Delay (s)		0.0			17.1			5.7			12.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	14.7
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Volume (veh/h)	0	284	1	0	520	10	0	0	48	0	0	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	309	1	0	565	11	0	0	52	0	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		471										
pX, platoon unblocked												
vC, conflicting volume	576			310			592	885	155	725	880	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	576			310			592	885	155	725	880	288
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	100	94	100	100	98
cM capacity (veh/h)	993			1248			382	282	863	294	284	709

Direction, Lane #	EB	EB	EB	WB	WB	SB
Volume Total	206	104	377	198	52	15
Volume Left	0	0	0	0	0	0
Volume Right	0	1	0	11	52	15
cSH	1700	1700	1700	1700	863	709
Volume to Capacity	0.12	0.06	0.22	0.12	0.06	0.02
Queue Length 95th (ft)	0	0	0	0	5	2
Control Delay (s)	0.0	0.0	0.0	0.0	9.4	10.2
Lane LOS					A	B
Approach Delay (s)	0.0		0.0		9.4	10.2
Approach LOS					A	B

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱			↑↑↱				↱			↱
Volume (veh/h)	0	553	2	0	587	22	0	0	45	0	0	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	601	2	0	638	24	0	0	49	0	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		471										
pX, platoon unblocked												
vC, conflicting volume	662			603			921	1264	302	951	1253	331
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	662			603			921	1264	302	951	1253	331
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
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			100			100	100	93	100	100	97
cM capacity (veh/h)	923			970			218	168	694	199	171	665

Volume Total	EB 1	EB 2	NB	WB 1	WB 2	SB 1
Volume Total	401	203	425	297	49	23
Volume Left	0	0	0	0	0	0
Volume Right	0	2	0	24	49	23
cSH	1700	1700	1700	1700	694	665
Volume to Capacity	0.24	0.12	0.25	0.14	0.07	0.03
Queue Length 95th (ft)	0	0	0	0	6	3
Control Delay (s)	0.0	0.0	0.0	0.0	10.6	10.6
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		10.6	10.6
Approach LOS					B	B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	198	106	248	362	97	149	742	34	138	481	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.95		1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3354		3433	3427		3433	3985		3433	3946	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3354		3433	3427		3433	3985		3433	3946	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	215	115	270	393	105	162	807	37	150	523	63
RTOR Reduction (vph)	0	81	0	0	26	0	0	4	0	0	9	0
Lane Group Flow (vph)	72	249	0	270	472	0	162	840	0	150	577	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.6	11.7		9.8	15.9		7.0	18.7		6.9	18.6	
Effective Green, g (s)	5.6	11.7		9.8	15.9		7.0	18.7		6.9	18.6	
Actuated g/C Ratio	0.09	0.18		0.15	0.24		0.11	0.29		0.11	0.28	
Clearance Time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Vehicle Extension (s)	1.0	2.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	152	601		515	834		368	1141		363	1124	
v/s Ratio Prot	0.04	0.07		c0.08	c0.14		0.05	c0.21		0.04	c0.15	
v/s Ratio Perm												
v/c Ratio	0.47	0.41		0.52	0.57		0.44	0.74		0.41	0.51	
Uniform Delay, d1	28.4	23.8		25.6	21.7		27.3	21.1		27.3	19.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.2		0.4	0.5		0.3	2.2		0.3	0.2	
Delay (s)	29.3	23.9		26.0	22.2		27.6	23.2		27.6	19.7	
Level of Service	C	C		C	C		C	C		C	B	
Approach Delay (s)		24.9			23.6			23.9			21.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	9.1
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	411	142	284	347	125	229	795	61	206	754	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		0.97	0.95		0.97	0.95	
Frt	1.00	0.96		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3403		3433	3398		3433	3968		3433	3986	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3403		3433	3398		3433	3968		3433	3986	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	447	154	309	377	136	249	864	66	224	820	35
RTOR Reduction (vph)	0	37	0	0	37	0	0	6	0	0	3	0
Lane Group Flow (vph)	101	564	0	309	476	0	249	924	0	224	852	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.7	16.7		10.8	20.8		8.9	19.2		8.9	19.2	
Effective Green, g (s)	6.7	16.7		10.8	20.8		8.9	19.2		8.9	19.2	
Actuated g/C Ratio	0.09	0.23		0.15	0.28		0.12	0.26		0.12	0.26	
Clearance Time (s)	3.1	6.0		3.1	6.0		3.1	6.0		3.1	6.0	
Vehicle Extension (s)	1.0	2.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	161	770		502	958		414	1032		414	1037	
v/s Ratio Prot	0.06	c0.17		c0.09	0.14		0.07	c0.23		0.07	c0.21	
v/s Ratio Perm												
v/c Ratio	0.63	0.73		0.62	0.50		0.60	0.90		0.54	0.82	
Uniform Delay, d1	32.3	26.5		29.6	22.1		30.8	26.3		30.5	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.4	3.1		1.6	0.1		1.7	9.9		0.8	5.1	
Delay (s)	37.7	29.6		31.1	22.3		32.5	36.2		31.3	30.8	
Level of Service	D	C		C	C		C	D		C	C	
Approach Delay (s)		30.8			25.6			35.4			30.9	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM Average Control Delay	31.1	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	21.1	
Intersection Capacity Utilization	70.5%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL2	EBL	EBR	EBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Volume (vph)	4	8	12	1	3	32	21	22	3	21	7	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	16	12	12	16	12	12
Total Lost time (s)		5.2	5.2				5.2			5.2		
Lane Util. Factor		1.00	1.00				1.00			1.00		
Frt		1.00	0.85				0.96			0.94		
Flt Protected		0.95	1.00				0.98			1.00		
Satd. Flow (prot)		1770	1583				1986			1988		
Flt Permitted		0.95	1.00				0.84			0.98		
Satd. Flow (perm)		1770	1583				1696			1947		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	9	13	1	3	35	23	24	3	23	8	10
RTOR Reduction (vph)	0	0	1	0	0	0	10	0	0	7	0	0
Lane Group Flow (vph)	0	13	13	0	0	0	75	0	0	37	0	0
Turn Type	Split		Perm		Perm	Perm			Perm			
Protected Phases	3	3					4			4		
Permitted Phases			3		4	4			4			
Actuated Green, G (s)		3.0	3.0				8.6			8.6		
Effective Green, g (s)		3.0	3.0				8.6			8.6		
Actuated g/C Ratio		0.04	0.04				0.10			0.10		
Clearance Time (s)		5.2	5.2				5.2			5.2		
Vehicle Extension (s)		2.0	2.0				4.5			4.5		
Lane Grp Cap (vph)		63	57				174			199		
v/s Ratio Prot		0.01										
v/s Ratio Perm			c0.01				c0.04			0.02		
v/c Ratio		0.21	0.23				0.43			0.19		
Uniform Delay, d1		39.3	39.4				35.4			34.5		
Progression Factor		1.00	1.00				1.00			1.00		
Incremental Delay, d2		0.6	0.7				3.0			0.8		
Delay (s)		39.9	40.1				38.4			35.3		
Level of Service		D	D				D			D		
Approach Delay (s)		40.0					38.4			35.3		
Approach LOS		D					D			D		

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	27.4
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations								
Volume (vph)	26	1151	107	17	27	42	1262	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12
Total Lost time (s)	5.2	5.9				5.2	5.9	
Lane Util. Factor	1.00	0.91				1.00	0.91	
Frt	1.00	0.99				1.00	1.00	
Flt Protected	0.95	1.00				0.95	1.00	
Satd. Flow (prot)	1770	5011				1770	5080	
Flt Permitted	0.95	1.00				0.95	1.00	
Satd. Flow (perm)	1770	5011				1770	5080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1251	116	18	29	46	1372	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	1385	0	0	0	75	1381	0
Turn Type	Prot				Prot	Prot		
Protected Phases	1	6			5	5	2	
Permitted Phases								
Actuated Green, G (s)	3.4	44.1				6.8	47.5	
Effective Green, g (s)	3.4	44.1				6.8	47.5	
Actuated g/C Ratio	0.04	0.52				0.08	0.57	
Clearance Time (s)	5.2	5.9				5.2	5.9	
Vehicle Extension (s)	2.0	3.6				2.0	4.3	
Lane Grp Cap (vph)	72	2631				143	2873	
v/s Ratio Prot	0.02	c0.28				c0.04	c0.27	
v/s Ratio Perm								
v/c Ratio	0.39	0.53				0.52	0.48	
Uniform Delay, d1	39.3	13.1				37.0	10.9	
Progression Factor	1.00	1.00				1.00	1.00	
Incremental Delay, d2	1.3	0.2				1.6	0.2	
Delay (s)	40.6	13.3				38.6	11.1	
Level of Service	D	B				D	B	
Approach Delay (s)		13.9					12.5	
Approach LOS		B					B	

Intersection Summary

Lane Configurations												
Volume (vph)	30	8	31	131	17	21	8	31	2	5	21	1402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	16	12	12	16	12	12	12	12
Total Lost time (s)		5.2	5.2		5.2			5.2			5.2	5.9
Lane Util. Factor		1.00	1.00		1.00			1.00			1.00	0.91
Frt		1.00	0.85		0.98			0.98			1.00	1.00
Flt Protected		0.95	1.00		0.96			0.99			0.95	1.00
Satd. Flow (prot)		1770	1583		1998			2053			1770	5065
Flt Permitted		0.95	1.00		0.76			0.94			0.95	1.00
Satd. Flow (perm)		1770	1583		1569			1957			1770	5065
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	9	34	142	18	23	9	34	2	5	23	1524
RTOR Reduction (vph)	0	0	0	0	3	0	0	2	0	0	0	1
Lane Group Flow (vph)	0	42	34	0	180	0	0	48	0	0	23	1565
Turn Type	Split		Perm	Perm			Perm				Prot	
Protected Phases	3	3			4			4			1	6
Permitted Phases			3	4			4					
Actuated Green, G (s)		5.7	5.7		19.8			19.8			3.6	51.4
Effective Green, g (s)		5.7	5.7		19.8			19.8			3.6	51.4
Actuated g/C Ratio		0.05	0.05		0.19			0.19			0.03	0.49
Clearance Time (s)		5.2	5.2		5.2			5.2			5.2	5.9
Vehicle Extension (s)		2.0	2.0		4.5			4.5			2.0	3.6
Lane Grp Cap (vph)		96	86		295			368			60	2470
v/s Ratio Prot		c0.02									0.01	c0.31
v/s Ratio Perm			0.02		c0.11			0.02				
v/c Ratio		0.44	0.40		0.61			0.13			0.38	0.63
Uniform Delay, d1		48.3	48.2		39.3			35.6			49.8	20.0
Progression Factor		1.00	1.00		1.00			1.00			1.00	1.00
Incremental Delay, d2		1.2	1.1		4.6			0.3			1.5	0.6
Delay (s)		49.5	49.3		43.9			35.9			51.3	20.6
Level of Service		D	D		D			D			D	C
Approach Delay (s)		49.4			43.9			35.9				21.0
Approach LOS		D			D			D				C

HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	105.4	Sum of lost time (s)	27.4
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SER	SER2	NWL2	NWL	NWT	NWR
Lane Configurations						
Volume (vph)	31	7	42	19	1308	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)				5.2	5.9	
Lane Util. Factor				1.00	0.91	
Frt				1.00	1.00	
Flt Protected				0.95	1.00	
Satd. Flow (prot)				1770	5076	
Flt Permitted				0.95	1.00	
Satd. Flow (perm)				1770	5076	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	8	46	21	1422	18
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	67	1440	0
Turn Type			Prot	Prot		
Protected Phases			5	5	2	
Permitted Phases						
Actuated Green, G (s)				7.0	54.8	
Effective Green, g (s)				7.0	54.8	
Actuated g/C Ratio				0.07	0.52	
Clearance Time (s)				5.2	5.9	
Vehicle Extension (s)				2.0	4.3	
Lane Grp Cap (vph)				118	2639	
v/s Ratio Prot				c0.04	c0.28	
v/s Ratio Perm						
v/c Ratio				0.57	0.55	
Uniform Delay, d1				47.7	17.0	
Progression Factor				1.00	1.00	
Incremental Delay, d2				3.7	0.3	
Delay (s)				51.4	17.3	
Level of Service				D	B	
Approach Delay (s)					18.8	
Approach LOS					B	

Intersection Summary

Movement	WBL2	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations								
Volume (vph)	43	497	222	105	54	840	978	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12
Total Lost time (s)		4.1	4.1		3.7	4.4	4.4	
Lane Util. Factor		0.86	0.86		1.00	0.91	0.91	
Frt		1.00	0.97		1.00	1.00	0.99	
Flt Protected		0.95	0.98		0.95	1.00	1.00	
Satd. Flow (prot)		1725	4576		1770	5085	5020	
Flt Permitted		0.95	0.98		0.95	1.00	1.00	
Satd. Flow (perm)		1725	4576		1770	5085	5020	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	540	241	114	59	913	1063	99
RTOR Reduction (vph)	0	7	30	0	0	0	12	0
Lane Group Flow (vph)	0	288	617	0	59	913	1150	0
Turn Type	Split	Split			Prot			
Protected Phases	8	8	8		5	2	6	
Permitted Phases								
Actuated Green, G (s)		16.7	16.7		3.8	25.0	17.5	
Effective Green, g (s)		16.7	16.7		3.8	25.0	17.5	
Actuated g/C Ratio		0.33	0.33		0.08	0.50	0.35	
Clearance Time (s)		4.1	4.1		3.7	4.4	4.4	
Vehicle Extension (s)		3.0	3.0		2.0	0.2	0.2	
Lane Grp Cap (vph)		574	1522		134	2532	1750	
v/s Ratio Prot		c0.17	0.13		0.03	c0.18	c0.23	
v/s Ratio Perm								
v/c Ratio		0.50	0.41		0.44	0.36	0.66	
Uniform Delay, d1		13.4	12.9		22.2	7.7	13.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.2		0.8	0.0	0.7	
Delay (s)		14.1	13.1		23.0	7.7	14.5	
Level of Service		B	B		C	A	B	
Approach Delay (s)			13.4			8.7	14.5	
Approach LOS			B			A	B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	12.9
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations								
Volume (vph)	22	266	393	265	108	923	851	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12
Total Lost time (s)		4.1	4.1		3.7	4.4	4.4	
Lane Util. Factor		0.86	0.86		1.00	0.91	0.91	
Frt		1.00	0.94		1.00	1.00	0.97	
Flt Protected		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1725	4520		1770	5085	4957	
Flt Permitted		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1725	4520		1770	5085	4957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	289	427	288	117	1003	925	187
RTOR Reduction (vph)	0	3	103	0	0	0	36	0
Lane Group Flow (vph)	0	258	664	0	117	1003	1076	0
Turn Type	Split	Split			Prot			
Protected Phases	8	8	8		5	2	6	
Permitted Phases								
Actuated Green, G (s)		16.7	16.7		6.8	27.8	17.3	
Effective Green, g (s)		16.7	16.7		6.8	27.8	17.3	
Actuated g/C Ratio		0.32	0.32		0.13	0.52	0.33	
Clearance Time (s)		4.1	4.1		3.7	4.4	4.4	
Vehicle Extension (s)		3.0	3.0		2.0	0.2	0.2	
Lane Grp Cap (vph)		544	1424		227	2667	1618	
v/s Ratio Prot		c0.15	0.15		c0.07	0.20	c0.22	
v/s Ratio Perm								
v/c Ratio		0.47	0.47		0.52	0.38	0.67	
Uniform Delay, d1		14.6	14.6		21.6	7.5	15.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.7	0.2		0.8	0.0	0.8	
Delay (s)		15.3	14.8		22.4	7.5	16.2	
Level of Service		B	B		C	A	B	
Approach Delay (s)			14.9			9.1	16.2	
Approach LOS			B			A	B	

HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	97	21	121	85	56	39	196	68	110	492	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.94		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1813		1770	1751		1770	3402		1770	3465	
Flt Permitted	0.66	1.00		0.67	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1229	1813		1257	1751		1770	3402		1770	3465	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	105	23	132	92	61	42	213	74	120	535	87
RTOR Reduction (vph)	0	7	0	0	22	0	0	31	0	0	10	0
Lane Group Flow (vph)	37	121	0	132	131	0	42	256	0	120	612	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4								
Actuated Green, G (s)	9.9	9.9		9.9	9.9		2.0	13.8		5.8	17.6	
Effective Green, g (s)	9.9	9.9		9.9	9.9		2.0	13.8		5.8	17.6	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.05	0.32		0.13	0.41	
Clearance Time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	282	415		288	401		82	1087		238	1412	
v/s Ratio Prot		0.07			0.08		c0.02	0.08		0.07	c0.18	
v/s Ratio Perm	0.03			c0.10								
v/c Ratio	0.13	0.29		0.46	0.33		0.51	0.24		0.50	0.43	
Uniform Delay, d1	13.2	13.8		14.3	13.9		20.1	10.8		17.4	9.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		0.4	0.2		2.2	0.0		0.6	0.1	
Delay (s)	13.3	13.9		14.8	14.1		22.4	10.9		18.0	9.3	
Level of Service	B	B		B	B		C	B		B	A	
Approach Delay (s)		13.8			14.4			12.3			10.7	
Approach LOS		B			B			B			B	

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	115	57	129	119	119	46	482	84	119	405	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	0.92		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1770		1770	1723		1770	3461		1770	3459	
Flt Permitted	0.55	1.00		0.64	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1020	1770		1192	1723		1770	3461		1770	3459	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	125	62	140	129	129	50	524	91	129	440	78
RTOR Reduction (vph)	0	16	0	0	31	0	0	13	0	0	12	0
Lane Group Flow (vph)	114	171	0	140	227	0	50	602	0	129	506	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4								
Actuated Green, G (s)	13.2	13.2		13.2	13.2		6.1	17.0		6.6	17.5	
Effective Green, g (s)	13.2	13.2		13.2	13.2		6.1	17.0		6.6	17.5	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.12	0.34		0.13	0.35	
Clearance Time (s)	5.1	5.1		5.1	5.1		4.0	4.6		4.0	4.6	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.0	2.0		1.0	2.0	
Lane Grp Cap (vph)	267	463		312	450		214	1165		231	1199	
v/s Ratio Prot		0.10			c0.13		0.03	c0.17		c0.07	0.15	
v/s Ratio Perm	0.11			0.12								
v/c Ratio	0.43	0.37		0.45	0.50		0.23	0.52		0.56	0.42	
Uniform Delay, d1	15.5	15.3		15.6	15.9		20.1	13.5		20.6	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.2		0.4	0.3		0.2	0.2		1.7	0.1	
Delay (s)	15.9	15.4		16.0	16.2		20.3	13.6		22.2	12.7	
Level of Service	B	B		B	B		C	B		C	B	
Approach Delay (s)		15.6			16.1			14.1			14.6	
Approach LOS		B			B			B			B	

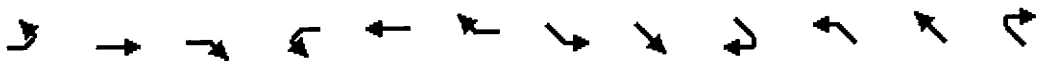
Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	140	42	97	116	254	34	213	129	82	365	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.90		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1798		1770	1671		1770	3339		1770	3463	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1798		1770	1671		1770	3339		1770	3463	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	152	46	105	126	276	37	232	140	89	397	67
RTOR Reduction (vph)	0	18	0	0	124	0	0	104	0	0	20	0
Lane Group Flow (vph)	8	180	0	105	278	0	37	268	0	89	444	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.5	13.5		3.7	16.7		1.2	12.6		2.9	14.3	
Effective Green, g (s)	0.5	13.5		3.7	16.7		1.2	12.6		2.9	14.3	
Actuated g/C Ratio	0.01	0.28		0.08	0.34		0.02	0.26		0.06	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	18	498		134	573		44	864		105	1017	
v/s Ratio Prot	0.00	0.10		c0.06	c0.17		0.02	0.08		c0.05	c0.13	
v/s Ratio Perm												
v/c Ratio	0.44	0.36		0.78	0.49		0.84	0.31		0.85	0.44	
Uniform Delay, d1	24.0	14.1		22.1	12.6		23.7	14.5		22.7	13.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.5	0.4		25.2	0.7		77.3	0.2		43.4	0.3	
Delay (s)	40.5	14.6		47.3	13.3		101.0	14.8		66.1	14.2	
Level of Service	D	B		D	B		F	B		E	B	
Approach Delay (s)		15.6			20.3			22.6			22.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

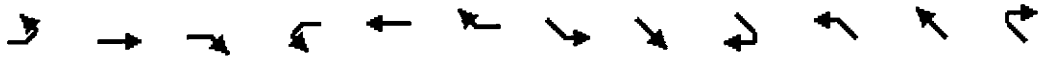
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	166	28	127	108	313	31	377	231	78	279	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.89		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1823		1770	1655		1770	3338		1770	3483	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1823		1770	1655		1770	3338		1770	3483	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	180	30	138	117	340	34	410	251	85	303	36
RTOR Reduction (vph)	0	11	0	0	167	0	0	140	0	0	13	0
Lane Group Flow (vph)	16	199	0	138	290	0	34	521	0	85	326	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	0.6	11.6		6.0	17.0		1.3	15.3		2.9	16.9	
Effective Green, g (s)	0.6	11.6		6.0	17.0		1.3	15.3		2.9	16.9	
Actuated g/C Ratio	0.01	0.22		0.12	0.33		0.03	0.30		0.06	0.33	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	408		205	543		44	986		99	1136	
v/s Ratio Prot	0.01	0.11		c0.08	c0.18		0.02	c0.16		c0.05	0.09	
v/s Ratio Perm												
v/c Ratio	0.76	0.49		0.67	0.53		0.77	0.53		0.86	0.29	
Uniform Delay, d1	25.5	17.5		22.0	14.2		25.1	15.2		24.2	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	92.1	0.9		8.4	1.0		57.0	0.5		47.9	0.1	
Delay (s)	117.6	18.4		30.4	15.2		82.1	15.8		72.1	13.1	
Level of Service	F	B		C	B		F	B		E	B	
Approach Delay (s)		25.5			18.7			19.0			24.9	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	175	12	46	11	15	23	36	1444	625	138	1224	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1696	1583		1725		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1696	1583		1725		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	13	50	12	16	25	39	1570	679	150	1330	15
RTOR Reduction (vph)	0	0	44	0	24	0	0	0	154	0	0	2
Lane Group Flow (vph)	101	102	6	0	29	0	39	1570	525	150	1330	13
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			2
Actuated Green, G (s)	14.0	14.0	14.0		6.8		6.0	61.5	61.5	14.3	69.8	69.8
Effective Green, g (s)	14.0	14.0	14.0		6.8		6.0	61.5	61.5	14.3	69.8	69.8
Actuated g/C Ratio	0.12	0.12	0.12		0.06		0.05	0.53	0.53	0.12	0.60	0.60
Clearance Time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Vehicle Extension (s)	4.5	4.5	4.5		3.0		2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	202	203	190		101		91	1865	834	217	2117	947
v/s Ratio Prot	0.06	c0.06			c0.02		0.02	c0.44		c0.08	0.38	
v/s Ratio Perm			0.00						0.33			0.01
v/c Ratio	0.50	0.50	0.03		0.29		0.43	0.84	0.63	0.69	0.63	0.01
Uniform Delay, d1	48.1	48.1	45.4		52.6		53.7	23.5	19.5	49.1	15.1	9.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	3.4	0.1		1.6		1.2	4.0	2.1	7.4	0.8	0.0
Delay (s)	51.4	51.4	45.5		54.2		54.9	27.5	21.6	56.5	15.9	9.5
Level of Service	D	D	D		D		D	C	C	E	B	A
Approach Delay (s)		50.3			54.2			26.2			19.9	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	116.7	Sum of lost time (s)	20.1
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	560	22	95	26	25	27	19	1320	337	163	1595	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1691	1583		1747		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.96	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1691	1583		1747		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	609	24	103	28	27	29	21	1435	366	177	1734	5
RTOR Reduction (vph)	0	0	78	0	14	0	0	0	104	0	0	0
Lane Group Flow (vph)	317	316	25	0	70	0	21	1435	262	177	1734	5
Turn Type	Split		Perm	Split			Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			2
Actuated Green, G (s)	24.6	24.6	24.6		11.1		4.1	61.5	61.5	17.6	75.0	75.0
Effective Green, g (s)	24.6	24.6	24.6		11.1		4.1	61.5	61.5	17.6	75.0	75.0
Actuated g/C Ratio	0.18	0.18	0.18		0.08		0.03	0.46	0.46	0.13	0.56	0.56
Clearance Time (s)	5.5	5.5	5.5		5.6		3.7	5.3	5.3	3.7	5.3	5.3
Vehicle Extension (s)	4.5	4.5	4.5		3.0		2.0	4.9	4.9	2.0	4.9	4.9
Lane Grp Cap (vph)	307	308	289		144		54	1613	722	231	1968	880
v/s Ratio Prot	c0.19	0.19			c0.04		0.01	0.41		c0.10	c0.49	
v/s Ratio Perm			0.02						0.17			0.00
v/c Ratio	1.03	1.03	0.09		0.49		0.39	0.89	0.36	0.77	0.88	0.01
Uniform Delay, d1	55.2	55.2	45.8		59.2		64.2	33.6	23.9	56.7	26.1	13.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	60.0	58.1	0.2		2.6		1.7	6.9	0.6	12.8	5.4	0.0
Delay (s)	115.2	113.3	46.1		61.8		65.9	40.5	24.6	69.4	31.4	13.3
Level of Service	F	F	D		E		E	D	C	E	C	B
Approach Delay (s)		104.7			61.8			37.6			34.9	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	134.9	Sum of lost time (s)	20.1
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	216	0	57	0	296	0	0	107	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	235	0	62	0	322	0	0	116	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								857				
pX, platoon unblocked												
vC, conflicting volume	339	438	58	380	438	161	116			322		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339	438	58	380	438	161	116			322		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	58	100	93	100			100		
cM capacity (veh/h)	548	511	996	553	511	856	1470			1235		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	157	140	161	151	78	39
Volume Left	157	78	0	0	0	0
Volume Right	0	62	0	0	0	0
cSH	553	655	1700	1700	1700	1700
Volume to Capacity	0.28	0.21	0.09	0.09	0.05	0.02
Queue Length 95th (ft)	29	20	0	0	0	0
Control Delay (s)	14.1	12.0	0.0	0.0	0.0	0.0
Lane LOS	B	B				
Approach Delay (s)	13.1		0.0		0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	84	4	46	0	560	0	0	188	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	91	4	50	0	609	0	0	204	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								857				
pX, platoon unblocked												
vC, conflicting volume	563	815	104	711	817	304	209			609		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	563	815	104	711	817	304	209			609		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	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 %	100	100	100	71	99	93	100			100		
cM capacity (veh/h)	375	310	930	320	309	692	1359			966		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	61	85	304	304	136	72
Volume Left	61	30	0	0	0	0
Volume Right	0	50	0	0	0	4
cSH	320	467	1700	1700	1700	1700
Volume to Capacity	0.19	0.18	0.18	0.18	0.08	0.04
Queue Length 95th (ft)	17	16	0	0	0	0
Control Delay (s)	18.9	14.4	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	16.3		0.0		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1	9	332	1	43	34	468	526	109	761	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.88		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1634		1681	1686	1583	1770	3539	1583	1770	3538	
Flt Permitted		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1634		1681	1686	1583	1770	3539	1583	1770	3538	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1	10	361	1	47	37	509	572	118	827	2
RTOR Reduction (vph)	0	10	0	0	0	37	0	0	388	0	0	0
Lane Group Flow (vph)	0	1	0	180	182	10	37	509	184	118	829	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3			2			
Actuated Green, G (s)		0.7		12.1	12.1	12.1	3.1	18.2	18.2	7.0	22.1	
Effective Green, g (s)		0.7		12.1	12.1	12.1	3.1	18.2	18.2	7.0	22.1	
Actuated g/C Ratio		0.01		0.21	0.21	0.21	0.05	0.32	0.32	0.12	0.39	
Clearance Time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)		2.0		1.5	1.5	1.5	1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)		20		360	361	339	97	1140	510	219	1384	
v/s Ratio Prot		c0.00		0.11	c0.11		0.02	0.14		c0.07	c0.23	
v/s Ratio Perm						0.01			0.12			
v/c Ratio		0.06		0.50	0.50	0.03	0.38	0.45	0.36	0.54	0.60	
Uniform Delay, d1		27.6		19.5	19.6	17.6	25.8	15.2	14.7	23.2	13.7	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		0.4	0.4	0.0	0.9	0.1	0.2	1.3	0.5	
Delay (s)		28.0		19.9	20.0	17.6	26.7	15.3	14.9	24.5	14.1	
Level of Service		C		B	B	B	C	B	B	C	B	
Approach Delay (s)		28.0			19.7			15.4			15.4	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	9	26	577	4	75	23	746	256	68	564	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.92		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	1.00	0.95	1.00	
Satd. Flow (prot)		1695		1681	1686	1583	1770	3539	1583	1770	3536	
Flt Permitted		0.99		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1695		1681	1686	1583	1770	3539	1583	1770	3536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	10	28	627	4	82	25	811	278	74	613	4
RTOR Reduction (vph)	0	26	0	0	0	56	0	0	122	0	0	0
Lane Group Flow (vph)	0	20	0	313	318	26	25	811	156	74	617	0
Turn Type	Split			Split		Perm	Prot		Perm	Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3			2			
Actuated Green, G (s)		4.5		26.9	26.9	26.9	2.1	27.8	27.8	6.1	31.8	
Effective Green, g (s)		4.5		26.9	26.9	26.9	2.1	27.8	27.8	6.1	31.8	
Actuated g/C Ratio		0.05		0.32	0.32	0.32	0.03	0.33	0.33	0.07	0.38	
Clearance Time (s)		5.0		4.5	4.5	4.5	4.0	5.0	5.0	4.0	5.0	
Vehicle Extension (s)		2.0		1.5	1.5	1.5	1.0	2.0	2.0	1.0	2.0	
Lane Grp Cap (vph)		91		540	541	508	44	1174	525	129	1342	
v/s Ratio Prot		c0.01		0.19	c0.19		0.01	c0.23		c0.04	c0.17	
v/s Ratio Perm						0.02			0.10			
v/c Ratio		0.21		0.58	0.59	0.05	0.57	0.69	0.30	0.57	0.46	
Uniform Delay, d1		38.0		23.7	23.8	19.6	40.4	24.3	20.8	37.6	19.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.4		0.9	1.1	0.0	9.6	1.4	0.1	3.8	0.1	
Delay (s)		38.4		24.7	24.9	19.7	50.0	25.7	20.9	41.4	19.6	
Level of Service		D		C	C	B	D	C	C	D	B	
Approach Delay (s)		38.4			24.2			25.0			22.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	23.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	119	118	104	170	43	388	731	80	95	819	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	5010		1770	5036	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	5010		1770	5036	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	129	128	113	185	47	422	795	87	103	890	62
RTOR Reduction (vph)	0	0	106	0	0	36	0	7	0	0	5	0
Lane Group Flow (vph)	43	129	22	113	185	11	422	875	0	103	947	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.1	18.0	18.0	11.5	24.0	24.0	26.2	49.5		10.9	34.2	
Effective Green, g (s)	6.1	18.0	18.0	11.5	24.0	24.0	26.2	49.5		10.9	34.2	
Actuated g/C Ratio	0.06	0.17	0.17	0.11	0.22	0.22	0.24	0.46		0.10	0.32	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	2.5	2.5	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	101	595	266	190	793	355	433	2316		180	1608	
v/s Ratio Prot	0.02	0.04		c0.06	c0.05		c0.24	0.17		0.06	c0.19	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.43	0.22	0.08	0.59	0.23	0.03	0.97	0.38		0.57	0.59	
Uniform Delay, d1	48.8	38.5	37.6	45.6	34.0	32.5	40.1	18.8		45.9	30.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.4	0.3	3.3	0.1	0.0	36.2	0.2		2.7	0.9	
Delay (s)	49.9	38.8	37.8	48.9	34.1	32.5	76.3	19.0		48.6	31.4	
Level of Service	D	D	D	D	C	C	E	B		D	C	
Approach Delay (s)		40.0			38.7			37.5			33.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	107.1	Sum of lost time (s)	12.6
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	261	281	177	137	79	163	734	170	110	527	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	4942		1770	5041	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	4942		1770	5041	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	284	305	192	149	86	177	798	185	120	573	35
RTOR Reduction (vph)	0	0	243	0	0	63	0	24	0	0	4	0
Lane Group Flow (vph)	105	284	62	192	149	23	177	959	0	120	604	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	11.1	20.6	20.6	16.4	26.5	26.5	15.4	34.9		12.0	31.5	
Effective Green, g (s)	11.1	20.6	20.6	16.4	26.5	26.5	15.4	34.9		12.0	31.5	
Actuated g/C Ratio	0.11	0.20	0.20	0.16	0.26	0.26	0.15	0.35		0.12	0.31	
Clearance Time (s)	4.0	4.6	4.6	4.0	4.0	4.0	4.0	4.6		4.0	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	2.5	2.5	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	194	721	323	287	928	415	270	1706		210	1571	
v/s Ratio Prot	0.06	c0.08		c0.11	0.04		c0.10	c0.19		0.07	0.12	
v/s Ratio Perm			0.04			0.01						
v/c Ratio	0.54	0.39	0.19	0.67	0.16	0.05	0.66	0.56		0.57	0.38	
Uniform Delay, d1	42.6	34.8	33.4	39.8	28.7	27.9	40.4	26.9		42.1	27.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.7	0.6	4.5	0.1	0.0	4.3	0.7		2.3	0.3	
Delay (s)	44.2	35.6	34.0	44.3	28.8	28.0	44.7	27.6		44.4	27.5	
Level of Service	D	D	C	D	C	C	D	C		D	C	
Approach Delay (s)		36.2			35.6			30.2			30.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	101.1	Sum of lost time (s)	17.2
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	265	143	0	259	160	207	572
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97	0.91		0.95		1.00	0.95
Frt	0.99	0.85		0.94		1.00	1.00
Flt Protected	0.96	1.00		1.00		0.95	1.00
Satd. Flow (prot)	3420	1441		3337		1770	3539
Flt Permitted	0.96	1.00		1.00		0.49	1.00
Satd. Flow (perm)	3420	1441		3337		911	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	155	0	282	174	225	622
RTOR Reduction (vph)	12	107	0	82	0	0	0
Lane Group Flow (vph)	295	29	0	374	0	225	622
Turn Type		Perm	Perm			Perm	
Protected Phases	8			2			6
Permitted Phases		8	2			6	
Actuated Green, G (s)	6.5	6.5		16.1		16.1	16.1
Effective Green, g (s)	6.5	6.5		16.1		16.1	16.1
Actuated g/C Ratio	0.21	0.21		0.53		0.53	0.53
Clearance Time (s)	4.0	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	726	306		1756		479	1862
v/s Ratio Prot	c0.09			0.11			0.18
v/s Ratio Perm		0.02				c0.25	
v/c Ratio	0.41	0.09		0.21		0.47	0.33
Uniform Delay, d1	10.4	9.7		3.9		4.6	4.2
Progression Factor	1.00	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1		0.1		0.7	0.1
Delay (s)	10.8	9.8		3.9		5.3	4.3
Level of Service	B	A		A		A	A
Approach Delay (s)	10.5			3.9			4.5
Approach LOS	B			A			A

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	30.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	160	300	0	606	197	254	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97	0.91		0.95		1.00	0.95
Frt	0.93	0.85		0.96		1.00	1.00
Flt Protected	0.97	1.00		1.00		0.95	1.00
Satd. Flow (prot)	3267	1441		3409		1770	3539
Flt Permitted	0.97	1.00		1.00		0.31	1.00
Satd. Flow (perm)	3267	1441		3409		571	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	326	0	659	214	276	480
RTOR Reduction (vph)	131	131	0	41	0	0	0
Lane Group Flow (vph)	206	32	0	832	0	276	480
Turn Type		Perm	Perm			Perm	
Protected Phases	8			2			6
Permitted Phases		8	2			6	
Actuated Green, G (s)	7.8	7.8		25.1		25.1	25.1
Effective Green, g (s)	7.8	7.8		25.1		25.1	25.1
Actuated g/C Ratio	0.19	0.19		0.61		0.61	0.61
Clearance Time (s)	4.0	4.0		4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	623	275		2092		350	2172
v/s Ratio Prot	c0.06			0.24			0.14
v/s Ratio Perm		0.02				c0.48	
v/c Ratio	0.33	0.12		0.40		0.79	0.22
Uniform Delay, d1	14.3	13.7		4.0		5.9	3.5
Progression Factor	1.00	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.3	0.2		0.1		11.2	0.1
Delay (s)	14.6	13.9		4.2		17.1	3.6
Level of Service	B	B		A		B	A
Approach Delay (s)	14.4			4.2			8.5
Approach LOS	B			A			A

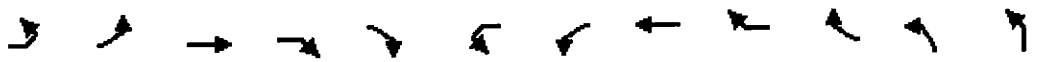
Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	40.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	128	72	259	257	131	113	546	139	174	606	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	0.95		1.00	0.95		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3348		1770	3360		1770	4930		1770	4953	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3348		1770	3360		1770	4930		1770	4953	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	139	78	282	279	142	123	593	151	189	659	138
RTOR Reduction (vph)	0	67	0	0	65	0	0	44	0	0	31	0
Lane Group Flow (vph)	126	150	0	282	356	0	123	700	0	189	766	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	9.0	10.6		17.3	18.9		9.9	18.4		11.2	19.7	
Effective Green, g (s)	9.0	10.6		17.3	18.9		9.9	18.4		11.2	19.7	
Actuated g/C Ratio	0.12	0.14		0.24	0.26		0.13	0.25		0.15	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	483		417	864		238	1234		270	1328	
v/s Ratio Prot	0.07	0.04		c0.16	c0.11		0.07	0.14		c0.11	c0.15	
v/s Ratio Perm												
v/c Ratio	0.58	0.31		0.68	0.41		0.52	0.57		0.70	0.58	
Uniform Delay, d1	30.5	28.2		25.6	22.7		29.6	24.1		29.6	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	0.4		4.3	0.3		1.9	0.6		7.9	0.6	
Delay (s)	34.4	28.5		29.9	23.0		31.5	24.7		37.5	23.9	
Level of Service	C	C		C	C		C	C		D	C	
Approach Delay (s)		30.7			25.8			25.6			26.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	224	118	87	153	90	132	592	96	166	395	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	0.95		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3356		1770	3342		1770	4979		1770	4973	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3356		1770	3342		1770	4979		1770	4973	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	243	128	95	166	98	143	643	104	180	429	74
RTOR Reduction (vph)	0	72	0	0	83	0	0	22	0	0	23	0
Lane Group Flow (vph)	158	299	0	95	181	0	143	725	0	180	480	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.3	14.0		7.7	10.4		10.3	17.0		11.2	17.9	
Effective Green, g (s)	11.3	14.0		7.7	10.4		10.3	17.0		11.2	17.9	
Actuated g/C Ratio	0.17	0.21		0.12	0.16		0.16	0.26		0.17	0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	304	713		207	527		277	1284		301	1351	
v/s Ratio Prot	c0.09	c0.09		0.05	0.05		0.08	c0.15		c0.10	0.10	
v/s Ratio Perm												
v/c Ratio	0.52	0.42		0.46	0.34		0.52	0.57		0.60	0.36	
Uniform Delay, d1	24.8	22.4		27.2	24.7		25.5	21.2		25.3	19.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.4		1.6	0.4		1.6	0.6		3.2	0.2	
Delay (s)	26.3	22.8		28.8	25.1		27.1	21.8		28.5	19.5	
Level of Service	C	C		C	C		C	C		C	B	
Approach Delay (s)		23.9			26.1			22.7			21.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBL
Right Turn Channelized												
Volume (veh/h)	20	106	98	46	25	50	23	85	63	90	40	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	115	107	50	27	54	25	92	68	98	43	53
Approach Volume (veh/h)			321					338				
Crossing Volume (veh/h)			1021					936				
High Capacity (veh/h)			612					656				
High v/c (veh/h)			0.52					0.52				
Low Capacity (veh/h)			474					512				
Low v/c (veh/h)			0.68					0.66				

Intersection Summary					
Maximum v/c High		0.96			
Maximum v/c Low		1.17			
Intersection Capacity Utilization		117.2%	ICU Level of Service		H

Movement	NBT	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER
Right Turn Channelized												
Volume (veh/h)	385	58	5	5	52	411	253	199	261	40	7	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	418	63	5	5	57	447	275	216	284	43	8	98
Approach Volume (veh/h)	584					1000					437	
Crossing Volume (veh/h)	745					359					999	
High Capacity (veh/h)	767					1045					623	
High v/c (veh/h)	0.76					0.96					0.70	
Low Capacity (veh/h)	608					854					483	
Low v/c (veh/h)	0.96					1.17					0.90	

Intersection Summary

Movement	SER2
Right Turn Channelized	
Volume (veh/h)	4
Peak Hour Factor	0.92
Hourly flow rate (vph)	4
Approach Volume (veh/h)	
Crossing Volume (veh/h)	
High Capacity (veh/h)	
High v/c (veh/h)	
Low Capacity (veh/h)	
Low v/c (veh/h)	

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	WBR2	NBL2	NBL
Right Turn Channelized												
Volume (veh/h)	55	164	74	56	30	52	38	114	57	112	80	129
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	178	80	61	33	57	41	124	62	122	87	140
Approach Volume (veh/h)			412					405				
Crossing Volume (veh/h)			1267#					1267#				
High Capacity (veh/h)			499					499				
High v/c (veh/h)			0.83					0.81				
Low Capacity (veh/h)			378					378				
Low v/c (veh/h)			1.09					1.07				

Intersection Summary				
Maximum v/c High	1.61			
Maximum v/c Low	2.00			
Intersection Capacity Utilization	Err%	ICU Level of Service	H	

Crossing flow exceeds 1200, method is not applicable

Movement	NBT	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SEL2	SEL	SET	SER
Right Turn Channelized												
Volume (veh/h)	523	48	12	7	69	611	277	340	215	22	3	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	568	52	13	8	75	664	301	370	234	24	3	162
Approach Volume (veh/h)	861					1417					597	
Crossing Volume (veh/h)	779					571					1357#	
High Capacity (veh/h)	745					882					463	
High v/c (veh/h)	1.15					1.61					1.29	
Low Capacity (veh/h)	589					709					348	
Low v/c (veh/h)	1.46					2.00					1.72	

Intersection Summary

Movement	SER2
Right Turn Channelized	
Volume (veh/h)	160
Peak Hour Factor	0.92
Hourly flow rate (vph)	174
Approach Volume (veh/h)	
Crossing Volume (veh/h)	
High Capacity (veh/h)	
High v/c (veh/h)	
Low Capacity (veh/h)	
Low v/c (veh/h)	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	908	12	20	503	11	8	5	3	11	13	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.94		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5075		1770	5069		1770	1758		1770	1686	
Flt Permitted	0.43	1.00		0.29	1.00		1.00	1.00		1.00	1.00	
Satd. Flow (perm)	805	5075		536	5069		1863	1758		1863	1686	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	987	13	22	547	12	9	5	3	12	14	24
RTOR Reduction (vph)	0	2	0	0	4	0	0	3	0	0	22	0
Lane Group Flow (vph)	39	998	0	22	555	0	9	5	0	12	16	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.9	13.9		13.9	13.9		1.8	1.8		1.8	1.8	
Effective Green, g (s)	13.9	13.9		13.9	13.9		1.8	1.8		1.8	1.8	
Actuated g/C Ratio	0.59	0.59		0.59	0.59		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	472	2976		314	2973		141	134		141	128	
v/s Ratio Prot		c0.20			0.11			0.00			c0.01	
v/s Ratio Perm	0.05			0.04			0.00			0.01		
v/c Ratio	0.08	0.34		0.07	0.19		0.06	0.04		0.09	0.12	
Uniform Delay, d1	2.1	2.5		2.1	2.3		10.2	10.1		10.2	10.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1		0.1	0.0		0.2	0.1		0.3	0.4	
Delay (s)	2.2	2.6		2.2	2.3		10.4	10.3		10.4	10.7	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		2.6			2.3			10.3			10.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	2.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	23.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	928	13	20	1233	18	9	44	15	12	25	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.96		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5075		1770	5074		1770	1793		1770	1703	
Flt Permitted	0.24	1.00		0.27	1.00		1.00	1.00		1.00	1.00	
Satd. Flow (perm)	444	5075		499	5074		1863	1793		1863	1703	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	1009	14	22	1340	20	10	48	16	13	27	36
RTOR Reduction (vph)	0	2	0	0	2	0	0	15	0	0	11	0
Lane Group Flow (vph)	74	1021	0	22	1358	0	10	49	0	13	52	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.8	16.8		16.8	16.8		2.2	2.2		2.2	2.2	
Effective Green, g (s)	16.8	16.8		16.8	16.8		2.2	2.2		2.2	2.2	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	3158		310	3157		152	146		152	139	
v/s Ratio Prot		0.20			c0.27			0.03			c0.03	
v/s Ratio Perm	0.17			0.04			0.01			0.01		
v/c Ratio	0.27	0.32		0.07	0.43		0.07	0.34		0.09	0.37	
Uniform Delay, d1	2.3	2.4		2.0	2.6		11.5	11.7		11.5	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	0.1		0.2	1.4		0.2	1.7	
Delay (s)	2.8	2.5		2.1	2.7		11.6	13.1		11.7	13.4	
Level of Service	A	A		A	A		B	B		B	B	
Approach Delay (s)		2.5			2.7			12.9			13.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	3.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	27.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			