Appendix F

Level of Service Calculation Worksheets

Background Conditions Mitigated

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1185	72	45	978	149	59
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	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3200	1583	1770	3200	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3200	1583	1770	3200	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1288	78	49	1063	162	64
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1288	78	49	1063	162	64
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	32.0	32.0	2.7	38.4	10.0	10.0
Effective Green, g (s)	34.0	34.0	2.4	40.4	10.2	10.2
Actuated g/C Ratio	0.58	0.58	0.04	0.69	0.17	0.17
Clearance Time (s)	6.0	6.0	3.7	6.0	4.2	4.2
Vehicle Extension (s)	1.5	1.5	3.0	1.5	2.0	2.0
Lane Grp Cap (vph)	1857	918	72	2206	308	276
v/s Ratio Prot	c0.40		0.03	c0.33	c0.09	
v/s Ratio Perm		0.05				0.04
v/c Ratio	0.69	0.08	0.68	0.48	0.53	0.23
Uniform Delay, d1	8.6	5.4	27.7	4.2	22.0	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	23.3	0.1	0.7	0.2
Delay (s)	9.6	5.4	51.0	4.3	22.8	21.0
Level of Service	A	A	D	A	C	C
Approach Delay (s)	9.3			6.4	22.3	
Approach LOS	A			A	C	

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
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)	141	1078	25	95	886	243	71	31	77	96	26	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		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1770	3200	1553	1703	3200	1583		1714			1785	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.71			0.55	1.00
Satd. Flow (perm)	1770	3200	1553	1703	3200	1583		1236			1014	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)	153	1172	27	103	963	264	77	34	84	104	28	73
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	153	1172	27	103	963	264	0	195	0	0	132	73
Heavy Vehicles (%)	2%	2%	4%	6%	2%	2%	3%	2%	2%	2%	4%	2%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	12.2	72.7	72.7	8.0	68.5	68.5		20.9			20.9	20.9
Effective Green, g (s)	11.7	74.7	74.7	7.5	70.5	70.5		20.9			20.9	20.9
Actuated g/C Ratio	0.10	0.65	0.65	0.07	0.61	0.61		0.18			0.18	0.18
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		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)	180	2077	1008	111	1960	970		224			184	287
v/s Ratio Prot	c0.09	c0.37		0.06	0.30							
v/s Ratio Perm			0.02			0.17		c0.16			0.13	0.05
v/c Ratio	0.85	0.56	0.03	0.93	0.49	0.27		0.87			0.72	0.25
Uniform Delay, d1	50.8	11.2	7.2	53.5	12.4	10.4		45.8			44.3	40.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	29.4	1.1	0.0	62.3	0.9	0.7		28.7			12.5	0.5
Delay (s)	80.2	12.3	7.3	115.8	13.2	11.1		74.5			56.8	40.9
Level of Service	F	B	A	F	B	B		E			E	D
Approach Delay (s)		19.9			20.8			74.5			51.2	
Approach LOS		B			C			E			D	

Intersection Summary

HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	8.0
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)	253	751	3	2	1152	394	9	2	5	113	1	139
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	1.00	1.00	1.00	0.95	1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		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)	1770	1600	1583	1770	3200	1583	1770	1663		3433	1863	1568
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)	1770	1600	1583	1770	3200	1583	1770	1663		3433	1863	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	275	816	3	2	1252	428	10	2	5	123	1	151
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	275	816	3	2	1252	428	10	7	0	123	1	151
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	25.0	81.5	81.5	0.6	56.9	56.9	1.2	2.6		16.7	17.7	17.7
Effective Green, g (s)	25.2	83.5	83.5	0.6	58.9	58.9	1.4	2.6		16.7	17.9	17.9
Actuated g/C Ratio	0.21	0.70	0.70	0.01	0.49	0.49	0.01	0.02		0.14	0.15	0.15
Clearance Time (s)	4.2	6.0	6.0	4.0	6.0	6.0	4.2	4.0		4.0	4.2	4.2
Vehicle Extension (s)	4.5	4.5	4.5	3.0	4.5	4.5	4.5	3.0		3.0	3.5	3.5
Lane Grp Cap (vph)	374	1119	1107	9	1579	781	21	36		480	279	235
v/s Ratio Prot	0.16	c0.51		0.00	c0.39		0.01	0.00		c0.04	0.00	
v/s Ratio Perm			0.00			0.27						c0.10
v/c Ratio	0.74	0.73	0.00	0.22	0.79	0.55	0.48	0.19		0.26	0.00	0.64
Uniform Delay, d1	44.0	11.0	5.4	59.2	25.2	21.0	58.6	57.4		45.8	43.2	47.7
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	8.3	2.7	0.0	12.1	3.1	1.2	26.6	2.6		0.3	0.0	6.2
Delay (s)	52.3	13.8	5.4	71.3	28.3	22.2	85.2	60.0		46.1	43.2	53.9
Level of Service	D	B	A	E	C	C	F	E		D	D	D
Approach Delay (s)		23.4			26.8			74.9			50.4	
Approach LOS		C			C			E			D	

Intersection Summary

HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	119.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.8%	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)	32	791	46	21	1419	32	51	2	28	29	1	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	4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99			1.00	1.00
Flpb, ped/bikes	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	0.86			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
Satd. Flow (prot)	1770	1600	1583	1770	3200	1547	1770	1581			1775	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00			0.74	1.00
Satd. Flow (perm)	1770	1600	1583	1770	3200	1547	1370	1581			1383	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	860	50	23	1542	35	55	2	30	32	1	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	35	860	50	23	1542	35	55	32	0	0	33	84
Confl. Peds. (#/hr)				1		1			1	1		
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	4.3	64.0	64.0	2.2	61.9	61.9	11.4	11.4			11.4	11.4
Effective Green, g (s)	4.0	66.0	66.0	1.9	63.9	63.9	11.5	11.5			11.5	11.5
Actuated g/C Ratio	0.04	0.72	0.72	0.02	0.70	0.70	0.13	0.13			0.13	0.13
Clearance Time (s)	3.7	6.0	6.0	3.7	6.0	6.0	4.1	4.1			4.1	4.1
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	77	1155	1143	37	2237	1082	172	199			174	199
v/s Ratio Prot	c0.02	c0.54		0.01	0.48			0.02				
v/s Ratio Perm			0.03			0.02	0.04				0.02	c0.05
v/c Ratio	0.45	0.74	0.04	0.62	0.69	0.03	0.32	0.16			0.19	0.42
Uniform Delay, d1	42.6	7.6	3.6	44.4	8.0	4.2	36.4	35.6			35.8	36.9
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	4.2	2.8	0.0	28.2	1.0	0.0	1.1	0.4			0.5	1.4
Delay (s)	46.8	10.5	3.7	72.6	9.0	4.2	37.5	36.0			36.3	38.3
Level of Service	D	B	A	E	A	A	D	D			D	D
Approach Delay (s)		11.4			9.8			36.9			37.8	
Approach LOS		B			A			D			D	

Intersection Summary

HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	722	136	237	1266	206	245
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	0.95	1.00	0.97	0.95	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3200	1583	3433	3200	1770	1563
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3200	1583	3433	3200	1770	1563
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	785	148	258	1376	224	266
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	785	148	258	1376	224	266
Confl. Peds. (#/hr)			1		1	1
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	22.8	22.8	10.8	37.3	17.9	17.9
Effective Green, g (s)	24.8	24.8	10.5	39.3	17.6	17.6
Actuated g/C Ratio	0.38	0.38	0.16	0.61	0.27	0.27
Clearance Time (s)	6.0	6.0	3.7	6.0	3.7	3.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	3.0	3.0
Lane Grp Cap (vph)	1223	605	555	1938	480	424
v/s Ratio Prot	0.25		0.08	c0.43	0.13	
v/s Ratio Perm		0.09				c0.17
v/c Ratio	0.64	0.24	0.46	0.71	0.47	0.63
Uniform Delay, d1	16.4	13.7	24.7	8.9	19.7	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.4	1.2	0.7	2.9
Delay (s)	17.4	13.8	25.1	10.0	20.5	23.7
Level of Service	B	B	C	B	C	C
Approach Delay (s)	16.9			12.4	22.2	
Approach LOS	B			B	C	

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	918	56	88	1343	13	160	1	199	8	1	5
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	1.00	0.95	1.00	0.97	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3200	1583	3400	3200			1757	1583		1783	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (perm)	1770	3200	1583	3400	3200			1757	1583		1783	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)	2	998	61	96	1460	14	174	1	216	9	1	5
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	998	61	96	1474	0	0	175	216	0	10	5
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	1.3	94.6	94.6	9.1	102.1			25.6	25.6		3.0	3.0
Effective Green, g (s)	1.3	96.6	96.6	8.8	104.1			25.6	25.6		3.0	3.0
Actuated g/C Ratio	0.01	0.64	0.64	0.06	0.69			0.17	0.17		0.02	0.02
Clearance Time (s)	4.0	6.0	6.0	3.7	6.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	2.5	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	15	2061	1019	199	2221			300	270		36	32
v/s Ratio Prot	0.00	0.31		c0.03	c0.46			0.10			c0.01	
v/s Ratio Perm			0.04						c0.14			0.00
v/c Ratio	0.13	0.48	0.06	0.48	0.66			0.58	0.80		0.28	0.16
Uniform Delay, d1	73.8	13.8	9.9	68.4	13.0			57.3	59.7		72.4	72.3
Progression Factor	1.00	1.00	1.00	0.87	1.74			1.00	1.00		1.00	1.00
Incremental Delay, d2	4.0	0.8	0.1	1.1	1.3			2.9	15.5		4.2	2.3
Delay (s)	77.8	14.6	10.0	60.5	23.9			60.2	75.2		76.6	74.5
Level of Service	E	B	A	E	C			E	E		E	E
Approach Delay (s)		14.5			26.2			68.5			75.9	
Approach LOS		B			C			E			E	

Intersection Summary

HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
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)	1	1059	36	70	1320	1	111	1	143	1	1	1
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	1.00	0.95	1.00	0.97	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes	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			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3200	1583	3273	3200			1775	1561		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3200	1583	3273	3200			1775	1561		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)	1	1151	39	76	1435	1	121	1	155	1	1	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1	1151	39	76	1436	0	0	122	155	0	2	1
Confl. Peds. (#/hr)				1		1			1	1		
Heavy Vehicles (%)	2%	2%	2%	7%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			4
Actuated Green, G (s)	1.2	99.9	99.9	8.4	107.1			19.3	19.3		5.3	5.3
Effective Green, g (s)	0.9	101.9	101.9	8.1	109.1			19.0	19.0		5.0	5.0
Actuated g/C Ratio	0.01	0.68	0.68	0.05	0.73			0.13	0.13		0.03	0.03
Clearance Time (s)	3.7	6.0	6.0	3.7	6.0			3.7	3.7		3.7	3.7
Vehicle Extension (s)	3.0	3.0	3.0	2.5	3.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	11	2174	1075	177	2327			225	198		61	53
v/s Ratio Prot	0.00	0.36		c0.02	c0.45			0.07			c0.00	
v/s Ratio Perm			0.02						c0.10			0.00
v/c Ratio	0.09	0.53	0.04	0.43	0.62			0.54	0.78		0.03	0.02
Uniform Delay, d1	74.1	12.0	7.9	68.7	10.1			61.4	63.5		70.2	70.1
Progression Factor	0.80	1.09	1.33	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.8	0.1	1.2	1.2			2.1	17.5		0.2	0.1
Delay (s)	62.4	13.9	10.6	69.9	11.4			63.5	81.0		70.3	70.2
Level of Service	E	B	B	E	B			E	F		E	E
Approach Delay (s)		13.8			14.3			73.3			70.3	
Approach LOS		B			B			E			E	

Intersection Summary

HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	17	1185	1032	6	1	359
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	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99
Flpb, ped/bikes	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)	1769	3200	3200	1549	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1769	3200	3200	1549	1770	1562
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.70	0.70
Adj. Flow (vph)	19	1347	1134	7	1	513
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	19	1347	1134	7	1	513
Confl. Peds. (#/hr)	1			1	1	1
Heavy Vehicles (%)	2%	2%	4%	2%	2%	2%
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	0.7	33.1	28.4	28.4	22.5	22.5
Effective Green, g (s)	0.7	33.1	28.4	28.4	22.5	22.5
Actuated g/C Ratio	0.01	0.52	0.45	0.45	0.35	0.35
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)	19	1665	1429	692	626	553
v/s Ratio Prot	0.01	c0.42	0.35		0.00	
v/s Ratio Perm				0.00		c0.33
v/c Ratio	1.00	0.81	0.79	0.01	0.00	0.93
Uniform Delay, d1	31.4	12.6	15.1	9.8	13.3	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	206.5	3.0	3.1	0.0	0.0	21.8
Delay (s)	237.9	15.6	18.2	9.8	13.3	41.6
Level of Service	F	B	B	A	B	D
Approach Delay (s)		18.7	18.2		41.5	
Approach LOS		B	B		D	

Intersection Summary

HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	63.6	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	666	203	452	462	78	240	867	616	107	618	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.4	4.0	4.0	3.7	4.0	4.0	2.7	4.0	4.0	3.7
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	4990	3539	1567	3433	3539	1583	1770	3539	1568
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	4990	3539	1567	3433	3539	1583	1770	3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	332	724	221	491	502	85	261	942	670	116	672	251
RTOR Reduction (vph)	0	0	30	0	0	18	0	0	0	0	0	48
Lane Group Flow (vph)	332	724	191	491	502	67	261	942	670	116	672	203
Confl. Peds. (#/hr)	2					2				2		2
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Free	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	13.0	24.8	36.1	13.5	25.3	35.0	11.3	34.5	100.5	9.7	32.9	45.9
Effective Green, g (s)	12.7	26.1	38.7	13.2	26.6	35.0	11.0	35.8	100.5	9.4	34.2	45.9
Actuated g/C Ratio	0.13	0.26	0.39	0.13	0.26	0.35	0.11	0.36	1.00	0.09	0.34	0.46
Clearance Time (s)	3.7	5.3	3.7	3.7	5.3	3.7	3.7	5.3		3.7	5.3	3.7
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	4.0		3.0	4.0	3.0
Lane Grp Cap (vph)	434	919	610	655	937	546	376	1261	1583	166	1204	716
v/s Ratio Prot	0.10	c0.20	0.04	c0.10	0.14	0.01	c0.08	c0.27		0.07	0.19	0.04
v/s Ratio Perm			0.08			0.03			c0.42			0.09
v/c Ratio	0.76	0.79	0.31	0.75	0.54	0.12	0.69	0.75	0.42	0.70	0.56	0.28
Uniform Delay, d1	42.5	34.6	21.6	42.1	31.7	22.3	43.1	28.4	0.0	44.2	27.0	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	4.7	0.3	4.7	0.7	0.1	5.5	4.1	0.8	12.1	1.9	0.2
Delay (s)	50.3	39.3	21.9	46.8	32.3	22.4	48.6	32.4	0.8	56.3	28.9	17.3
Level of Service	D	D	C	D	C	C	D	C	A	E	C	B
Approach Delay (s)		39.1			38.1			23.4			29.1	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	12.0
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)	568	313	0	0	373	151	1	5	7	157	1	432
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	0.97	0.95			0.95			1.00			1.00	1.00
Frt	1.00	1.00			0.96			0.92			1.00	0.85
Flt Protected	0.95	1.00			1.00			1.00			0.95	1.00
Satd. Flow (prot)	3400	3505			3353			1713			1757	1583
Flt Permitted	0.95	1.00			1.00			1.00			0.95	1.00
Satd. Flow (perm)	3400	3505			3353			1713			1757	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)	617	340	0	0	405	164	1	5	8	171	1	470
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	617	340	0	0	569	0	0	14	0	0	172	470
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%	2%	2%	2%	3%	2%	2%
Turn Type	Prot			Prot			Split			Split		pm+ov
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												6
Actuated Green, G (s)	15.5	34.5			15.0			6.2			11.5	27.0
Effective Green, g (s)	15.5	34.5			15.0			6.2			11.5	27.0
Actuated g/C Ratio	0.24	0.54			0.23			0.10			0.18	0.42
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)	821	1884			783			165			315	764
v/s Ratio Prot	c0.18	0.10			c0.17			c0.01			0.10	c0.15
v/s Ratio Perm												0.15
v/c Ratio	0.75	0.18			0.73			0.08			0.55	0.62
Uniform Delay, d1	22.6	7.6			22.7			26.4			24.0	14.5
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	3.9	0.0			3.4			0.2			1.9	1.5
Delay (s)	26.5	7.7			26.1			26.6			25.9	16.0
Level of Service	C	A			C			C			C	B
Approach Delay (s)		19.8			26.1			26.6			18.7	
Approach LOS		B			C			C			B	

Intersection Summary

HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	16.0
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)	469	537	19	136	610	213	24	524	221	176	447	761
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	6.5	4.0	4.0	1.5	4.0	4.0	6.5	4.0	4.0	2.5
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.95	0.88
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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)	4990	3539	1548	3433	3539	1569	1770	3539	2721	3433	3539	2787
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)	4990	3539	1548	3433	3539	1569	1770	3539	2721	3433	3539	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)	510	584	21	148	663	232	26	570	240	191	486	827
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	0	190
Lane Group Flow (vph)	510	584	21	148	663	190	26	570	240	191	486	637
Confl. Peds. (#/hr)			1	2		1	1		2	1		
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	7.3	20.5	20.5	5.2	17.9	25.1	2.1	17.9	17.9	7.2	23.5	30.8
Effective Green, g (s)	7.8	23.0	20.5	4.7	19.9	29.1	1.6	20.4	17.9	6.7	25.5	34.8
Actuated g/C Ratio	0.11	0.32	0.29	0.07	0.28	0.41	0.02	0.29	0.25	0.09	0.36	0.49
Clearance Time (s)	4.5	6.5	6.5	3.5	6.0	3.5	3.5	6.5	6.5	3.5	6.0	4.5
Vehicle Extension (s)	1.0	4.5	4.5	1.0	4.5	1.0	1.0	4.5	4.5	1.0	4.5	1.0
Lane Grp Cap (vph)	550	1150	448	228	995	645	40	1020	688	325	1275	1370
v/s Ratio Prot	c0.10	0.17		0.04	c0.19	0.04	0.01	c0.16		0.06	0.14	c0.06
v/s Ratio Perm			0.01			0.08			0.09			0.17
v/c Ratio	0.93	0.51	0.05	0.65	0.67	0.29	0.65	0.56	0.35	0.59	0.38	0.46
Uniform Delay, d1	31.2	19.3	18.1	32.2	22.5	14.0	34.3	21.4	21.7	30.7	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	1.00	1.00
Incremental Delay, d2	21.5	1.6	0.2	4.7	3.5	0.1	25.2	1.0	0.5	1.8	0.3	0.1
Delay (s)	52.8	20.9	18.3	37.0	26.0	14.1	59.5	22.4	22.2	32.5	17.1	12.0
Level of Service	D	C	B	D	C	B	E	C	C	C	B	B
Approach Delay (s)		35.4			24.9			23.5			16.2	
Approach LOS		D			C			C			B	

Intersection Summary

HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.8	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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	713	48	43	1459	71	83
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	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3200	1583	1770	3200	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3200	1583	1770	3200	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	775	52	47	1586	77	90
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	775	52	47	1586	77	90
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	35.8	35.8	3.3	42.8	8.1	8.1
Effective Green, g (s)	37.8	37.8	3.0	44.8	8.3	8.3
Actuated g/C Ratio	0.62	0.62	0.05	0.73	0.14	0.14
Clearance Time (s)	6.0	6.0	3.7	6.0	4.2	4.2
Vehicle Extension (s)	1.5	1.5	3.0	1.5	2.0	2.0
Lane Grp Cap (vph)	1980	979	87	2346	240	215
v/s Ratio Prot	0.24		0.03	c0.50	0.04	
v/s Ratio Perm		0.03				c0.06
v/c Ratio	0.39	0.05	0.54	0.68	0.32	0.42
Uniform Delay, d1	5.9	4.6	28.4	4.3	23.9	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	6.7	0.6	0.3	0.5
Delay (s)	5.9	4.6	35.1	4.9	24.1	24.7
Level of Service	A	A	D	A	C	C
Approach Delay (s)	5.8			5.8	24.4	
Approach LOS	A			A	C	

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	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)	85	691	19	54	1251	168	32	33	138	248	42	219
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	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.96	1.00
Satd. Flow (prot)	1770	3200	1583	1770	3200	1583		1679			1786	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.91			0.55	1.00
Satd. Flow (perm)	1770	3200	1583	1770	3200	1583		1547			1029	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	751	21	59	1360	183	35	36	150	270	46	238
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	92	751	21	59	1360	183	0	221	0	0	316	238
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	4.3	33.8	33.8	4.3	33.8	33.8		23.1			23.1	23.1
Effective Green, g (s)	3.8	35.8	35.8	3.8	35.8	35.8		23.1			23.1	23.1
Actuated g/C Ratio	0.05	0.48	0.48	0.05	0.48	0.48		0.31			0.31	0.31
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		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)	90	1534	759	90	1534	759		478			318	490
v/s Ratio Prot	c0.05	0.23		0.03	c0.42							
v/s Ratio Perm			0.01			0.12		0.14			c0.31	0.15
v/c Ratio	1.02	0.49	0.03	0.66	0.89	0.24		0.46			0.99	0.49
Uniform Delay, d1	35.5	13.2	10.3	34.8	17.6	11.5		20.8			25.7	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	101.0	1.1	0.1	15.9	7.9	0.8		0.7			48.5	0.8
Delay (s)	136.5	14.4	10.3	50.7	25.5	12.2		21.5			74.2	21.7
Level of Service	F	B	B	D	C	B		C			E	C
Approach Delay (s)		27.3			25.0			21.5			51.7	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	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)	109	921	10	7	1198	118	5	1	3	372	3	188
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	1.00	1.00	1.00	0.95	1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		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)	1770	1600	1583	1770	3200	1583	1770	1653		3433	1863	1583
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)	1770	1600	1583	1770	3200	1583	1770	1653		3433	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)	118	1001	11	8	1302	128	5	1	3	404	3	204
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	118	1001	11	8	1302	128	5	4	0	404	3	204
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						4
Actuated Green, G (s)	14.7	83.2	83.2	0.6	68.9	68.9	0.6	2.7		20.9	22.6	22.6
Effective Green, g (s)	14.9	85.2	85.2	0.6	70.9	70.9	0.8	2.7		20.9	22.8	22.8
Actuated g/C Ratio	0.12	0.68	0.68	0.00	0.57	0.57	0.01	0.02		0.17	0.18	0.18
Clearance Time (s)	4.2	6.0	6.0	4.0	6.0	6.0	4.2	4.0		4.0	4.2	4.2
Vehicle Extension (s)	4.5	4.5	4.5	3.0	4.5	4.5	4.5	3.0		3.0	3.5	3.5
Lane Grp Cap (vph)	210	1087	1076	8	1809	895	11	36		572	339	288
v/s Ratio Prot	c0.07	c0.63		0.00	0.41		0.00	0.00		c0.12	0.00	
v/s Ratio Perm			0.01			0.08						c0.13
v/c Ratio	0.56	0.92	0.01	1.00	0.72	0.14	0.45	0.11		0.71	0.01	0.71
Uniform Delay, d1	52.2	17.2	6.5	62.4	20.0	12.9	62.1	60.2		49.4	42.0	48.2
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	4.8	12.8	0.0	318.2	1.6	0.1	43.9	1.4		4.0	0.0	8.0
Delay (s)	57.0	30.0	6.5	380.6	21.6	13.0	106.0	61.5		53.3	42.1	56.2
Level of Service	E	C	A	F	C	B	F	E		D	D	E
Approach Delay (s)		32.6			22.8			86.3			54.2	
Approach LOS		C			C			F			D	

Intersection Summary

HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	125.4	Sum of lost time (s)	12.0
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)	60	1172	64	13	1180	30	70	5	30	40	4	72
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	0.95	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	0.87			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.96	1.00
Satd. Flow (prot)	1770	1600	1583	1770	3200	1583	1770	1620			1781	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.73	1.00			0.72	1.00
Satd. Flow (perm)	1770	1600	1583	1770	3200	1583	1353	1620			1335	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	1274	70	14	1283	33	76	5	33	43	4	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	1274	70	14	1283	33	76	38	0	0	47	78
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	8.4	107.5	107.5	1.5	100.6	100.6	12.8	12.8			12.8	12.8
Effective Green, g (s)	8.1	109.5	109.5	1.2	102.6	102.6	12.9	12.9			12.9	12.9
Actuated g/C Ratio	0.06	0.81	0.81	0.01	0.76	0.76	0.10	0.10			0.10	0.10
Clearance Time (s)	3.7	6.0	6.0	3.7	6.0	6.0	4.1	4.1			4.1	4.1
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	106	1292	1278	16	2421	1198	129	154			127	151
v/s Ratio Prot	c0.04	c0.80		0.01	0.40			0.02				
v/s Ratio Perm			0.04			0.02	c0.06				0.04	0.05
v/c Ratio	0.61	0.99	0.05	0.88	0.53	0.03	0.59	0.25			0.37	0.52
Uniform Delay, d1	62.2	12.3	2.6	67.1	6.7	4.1	58.8	56.8			57.5	58.4
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	10.1	21.6	0.0	161.3	0.3	0.0	6.7	0.8			1.8	3.0
Delay (s)	72.3	33.9	2.7	228.4	7.0	4.1	65.5	57.7			59.4	61.3
Level of Service	E	C	A	F	A	A	E	E			E	E
Approach Delay (s)		34.1			9.2			62.9			60.6	
Approach LOS		C			A			E			E	

Intersection Summary

HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	135.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1101	140	208	1006	217	381
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	0.95	1.00	0.97	0.95	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3200	1583	3433	3200	1770	1562
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3200	1583	3433	3200	1770	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1197	152	226	1093	236	414
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1197	152	226	1093	236	414
Confl. Peds. (#/hr)			1		1	1
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	47.3	47.3	12.2	63.2	35.5	35.5
Effective Green, g (s)	49.3	49.3	11.9	65.2	35.2	35.2
Actuated g/C Ratio	0.45	0.45	0.11	0.60	0.32	0.32
Clearance Time (s)	6.0	6.0	3.7	6.0	3.7	3.7
Vehicle Extension (s)	2.5	2.5	2.5	2.5	3.0	3.0
Lane Grp Cap (vph)	1455	720	377	1925	575	507
v/s Ratio Prot	c0.37		0.07	c0.34	0.13	
v/s Ratio Perm		0.10				c0.27
v/c Ratio	0.82	0.21	0.60	0.57	0.41	0.82
Uniform Delay, d1	25.7	17.8	46.0	13.1	28.5	33.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.1	2.1	0.3	0.5	9.8
Delay (s)	29.6	17.9	48.1	13.4	29.0	43.5
Level of Service	C	B	D	B	C	D
Approach Delay (s)	28.2			19.3	38.2	
Approach LOS	C			B	D	

Intersection Summary

HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	108.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	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)	1	1361	121	157	1132	7	82	1	161	4	1	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	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (prot)	1770	3200	1583	3433	3200			1775	1568		1791	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.96	1.00
Satd. Flow (perm)	1770	3200	1583	3433	3200			1775	1568		1791	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)	1	1479	132	171	1230	8	89	1	175	4	1	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1	1479	132	171	1238	0	0	90	175	0	5	4
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	1.2	95.5	95.5	12.3	106.3			21.8	21.8		2.7	2.7
Effective Green, g (s)	1.2	97.5	97.5	12.0	108.3			21.8	21.8		2.7	2.7
Actuated g/C Ratio	0.01	0.65	0.65	0.08	0.72			0.15	0.15		0.02	0.02
Clearance Time (s)	4.0	6.0	6.0	3.7	6.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	2.5	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	14	2080	1029	275	2310			258	228		32	28
v/s Ratio Prot	0.00	c0.46		c0.05	0.39			0.05			c0.00	
v/s Ratio Perm			0.08						c0.11			0.00
v/c Ratio	0.07	0.71	0.13	0.62	0.54			0.35	0.77		0.16	0.14
Uniform Delay, d1	73.8	17.1	10.0	66.8	9.5			57.7	61.7		72.5	72.5
Progression Factor	1.00	1.00	1.00	1.14	0.65			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	2.1	0.3	3.2	0.8			0.8	14.3		2.3	2.3
Delay (s)	76.0	19.2	10.3	79.3	6.9			58.5	76.0		74.8	74.9
Level of Service	E	B	B	E	A			E	E		E	E
Approach Delay (s)		18.5			15.7			70.0			74.8	
Approach LOS		B			B			E			E	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1422	112	149	1215	1	72	2	110	1	1	2
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	1.00	0.95	1.00	0.97	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes	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			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3200	1583	3273	3200			1776	1560		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3200	1583	3273	3200			1776	1560		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)	2	1546	122	162	1321	1	78	2	120	1	1	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	1546	122	162	1322	0	0	80	120	0	2	2
Confl. Peds. (#/hr)				1		1			1	1		
Heavy Vehicles (%)	2%	2%	2%	7%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot			Split		Perm	Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2						3			4
Actuated Green, G (s)	1.3	100.0	100.0	12.3	111.0			15.3	15.3		5.3	5.3
Effective Green, g (s)	1.0	102.0	102.0	12.0	113.0			15.0	15.0		5.0	5.0
Actuated g/C Ratio	0.01	0.68	0.68	0.08	0.75			0.10	0.10		0.03	0.03
Clearance Time (s)	3.7	6.0	6.0	3.7	6.0			3.7	3.7		3.7	3.7
Vehicle Extension (s)	3.0	3.0	3.0	2.5	3.0			2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	12	2176	1076	262	2411			178	156		61	53
v/s Ratio Prot	0.00	c0.48		c0.05	0.41			0.05			0.00	
v/s Ratio Perm			0.08						c0.08			c0.00
v/c Ratio	0.17	0.71	0.11	0.62	0.55			0.45	0.77		0.03	0.04
Uniform Delay, d1	74.1	14.9	8.3	66.8	7.8			63.6	65.8		70.2	70.2
Progression Factor	1.15	1.61	1.12	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	4.7	1.4	0.2	3.7	0.9			1.3	19.3		0.2	0.2
Delay (s)	90.1	25.4	9.5	70.5	8.7			64.9	85.1		70.3	70.4
Level of Service	F	C	A	E	A			E	F		E	E
Approach Delay (s)		24.3			15.4			77.1			70.4	
Approach LOS		C			B			E			E	

Intersection Summary

HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	61	1471	1322	42	2	43
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	0.95	0.95	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	3200	3200	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3200	3200	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1599	1437	46	2	47
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	66	1599	1437	46	2	47
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.1	32.3	26.2	26.2	7.1	7.1
Effective Green, g (s)	2.1	32.3	26.2	26.2	7.1	7.1
Actuated g/C Ratio	0.04	0.68	0.55	0.55	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)	78	2181	1769	875	265	237
v/s Ratio Prot	0.04	c0.50	c0.45		0.00	
v/s Ratio Perm				0.03		c0.03
v/c Ratio	0.85	0.73	0.81	0.05	0.01	0.20
Uniform Delay, d1	22.5	4.8	8.6	4.9	17.2	17.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.3	1.3	3.0	0.0	0.0	0.4
Delay (s)	75.8	6.1	11.6	4.9	17.2	18.1
Level of Service	E	A	B	A	B	B
Approach Delay (s)		8.9	11.4		18.0	
Approach LOS		A	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)	47.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.3%	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)	482	542	186	672	727	127	234	836	497	95	893	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	2.4	4.0	4.0	3.7	4.0	4.0	2.7	4.0	4.0	3.7
Lane Util. Factor	0.97	0.95	1.00	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	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	1566	4990	3539	1565	3433	3539	1563	1770	3539	1568
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	1566	4990	3539	1565	3433	3539	1563	1770	3539	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	524	589	202	730	790	138	254	909	540	103	971	407
RTOR Reduction (vph)	0	0	8	0	0	15	0	0	0	0	0	10
Lane Group Flow (vph)	524	589	194	730	790	123	254	909	540	103	971	397
Confl. Peds. (#/hr)	4		3	2		3	3		2	3		3
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Free	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8			Free			6
Actuated Green, G (s)	18.8	27.6	37.8	18.0	26.8	36.1	10.2	35.4	108.3	9.3	34.5	53.3
Effective Green, g (s)	18.5	28.9	40.4	17.7	28.1	36.1	9.9	36.7	108.3	9.0	35.8	53.3
Actuated g/C Ratio	0.17	0.27	0.37	0.16	0.26	0.33	0.09	0.34	1.00	0.08	0.33	0.49
Clearance Time (s)	3.7	5.3	3.7	3.7	5.3	3.7	3.7	5.3		3.7	5.3	3.7
Vehicle Extension (s)	3.0	3.5	3.0	3.0	3.5	3.0	3.0	4.0		3.0	4.0	3.0
Lane Grp Cap (vph)	586	944	584	816	918	522	314	1199	1563	147	1170	772
v/s Ratio Prot	c0.15	0.17	0.04	0.15	c0.22	0.02	c0.07	0.26		0.06	c0.27	0.09
v/s Ratio Perm			0.09			0.06			c0.35			0.16
v/c Ratio	0.89	0.62	0.33	0.89	0.86	0.23	0.81	0.76	0.35	0.70	0.83	0.51
Uniform Delay, d1	43.9	34.9	24.3	44.4	38.2	26.1	48.3	31.9	0.0	48.3	33.4	18.7
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	16.0	1.4	0.3	12.3	8.5	0.2	14.2	4.5	0.6	14.0	6.9	0.6
Delay (s)	60.0	36.3	24.6	56.6	46.7	26.3	62.4	36.4	0.6	62.4	40.3	19.3
Level of Service	E	D	C	E	D	C	E	D	A	E	D	B
Approach Delay (s)		43.9			49.4			28.9			36.1	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	108.3	Sum of lost time (s)	16.0
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)	716	480	1	6	495	118	0	1	1	157	1	795
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
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.97			0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (prot)	3433	3538		1770	3411			1737			1757	1583
Flt Permitted	0.95	1.00		0.95	1.00			1.00			0.95	1.00
Satd. Flow (perm)	3433	3538		1770	3411			1737			1757	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)	778	522	1	7	538	128	0	1	1	171	1	864
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	778	523	0	7	666	0	0	2	0	0	172	864
Heavy Vehicles (%)	2%	2%	2%	2%	2%	6%	2%	2%	2%	3%	2%	2%
Turn Type	Prot			Prot			Split			Split		pm+ov
Protected Phases	7	4		3	8		2	2		6	6	7
Permitted Phases												6
Actuated Green, G (s)	26.0	44.6		0.8	19.4			5.7			12.3	38.3
Effective Green, g (s)	26.0	44.6		0.8	19.4			5.7			12.3	38.3
Actuated g/C Ratio	0.33	0.56		0.01	0.24			0.07			0.15	0.48
Clearance Time (s)	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
Lane Grp Cap (vph)	1124	1987		18	833			125			272	843
v/s Ratio Prot	0.23	0.15		0.00	c0.20			c0.00			0.10	c0.34
v/s Ratio Perm												0.21
v/c Ratio	0.69	0.26		0.39	0.80			0.02			0.63	1.02
Uniform Delay, d1	23.2	8.9		39.1	28.2			34.2			31.4	20.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.9	0.1		13.4	5.4			0.1			4.7	37.5
Delay (s)	25.1	9.0		52.4	33.6			34.3			36.2	58.0
Level of Service	C	A		D	C			C			D	E
Approach Delay (s)		18.6			33.8			34.3			54.4	
Approach LOS		B			C			C			D	

Intersection Summary

HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	12.0
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)	739	602	15	306	653	359	33	710	282	204	699	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	6.5	4.0	4.0	1.5	4.0	4.0	6.5	4.0	4.0	4.0
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.95	0.88
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)	4990	3539	1583	3433	3539	1583	1770	3539	2787	3433	3539	2787
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)	4990	3539	1583	3433	3539	1583	1770	3539	2787	3433	3539	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)	803	654	16	333	710	390	36	772	307	222	760	522
RTOR Reduction (vph)	0	0	0	0	0	11	0	0	0	0	0	107
Lane Group Flow (vph)	803	654	16	333	710	379	36	772	307	222	760	415
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pt+ov
Protected Phases	5	2		1	6	7	3	8		7	4	4 5
Permitted Phases			2			6			8			
Actuated Green, G (s)	14.1	22.1	22.1	10.0	17.5	26.5	3.3	19.9	19.9	9.0	26.1	46.2
Effective Green, g (s)	14.6	24.6	22.1	9.5	19.5	30.5	2.8	22.4	19.9	8.5	28.1	48.2
Actuated g/C Ratio	0.18	0.30	0.27	0.12	0.24	0.38	0.03	0.28	0.25	0.10	0.35	0.60
Clearance Time (s)	4.5	6.5	6.5	3.5	6.0	3.5	3.5	6.5	6.5	3.5	6.0	
Vehicle Extension (s)	1.0	4.5	4.5	1.0	4.5	1.0	1.0	4.5	4.5	1.0	4.5	
Lane Grp Cap (vph)	899	1075	432	403	852	596	61	979	685	360	1228	1658
v/s Ratio Prot	c0.16	0.18		0.10	c0.20	0.09	0.02	c0.22		0.06	c0.21	0.15
v/s Ratio Perm			0.01			0.15			0.11			
v/c Ratio	0.89	0.61	0.04	0.83	0.83	0.64	0.59	0.79	0.45	0.62	0.62	0.25
Uniform Delay, d1	32.4	24.1	21.6	34.9	29.2	20.7	38.5	27.1	25.9	34.7	22.0	7.8
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	10.9	2.6	0.2	12.4	9.4	1.6	9.8	4.8	0.8	2.2	1.2	0.1
Delay (s)	43.4	26.6	21.8	47.3	38.6	22.3	48.3	31.9	26.7	36.9	23.2	7.9
Level of Service	D	C	C	D	D	C	D	C	C	D	C	A
Approach Delay (s)		35.7			36.2			31.0			19.9	
Approach LOS		D			D			C			B	

Intersection Summary

HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 1/15/2007
Analysis Period: Background AM-Mitigated
Highway: 68
From/To: San Benancio Rd. / Torero Dr.
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Eastbound Direction 2 = Westbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	60.0	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	1203	vph	1391	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	334		386	
Trucks and buses	4	%	4	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.980		0.980	
Flow rate, vp	681	pcphpl	788	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	681	pcphpl	788	pcphpl
Free-flow speed, FFS	60.0	mph	60.0	mph
Avg. passenger-car travel speed, S	60.0	mph	60.0	mph
Level of service, LOS	B		B	
Density, D	11.4	pc/mi/ln	13.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 1/15/2007
Analysis Period: Background AM-Mitigated
Highway: 68
From/To: Torero Dr. / Begin-End Freeway
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Eastbound Direction 2 = Westbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	60.0	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	1186	vph	1036	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	329		288	
Trucks and buses	4	%	4	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.980		0.980	
Flow rate, vp	672	pcphpl	587	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	672	pcphpl	587	pcphpl
Free-flow speed, FFS	60.0	mph	60.0	mph
Avg. passenger-car travel speed, S	60.0	mph	60.0	mph
Level of service, LOS	B		A	
Density, D	11.2	pc/mi/ln	9.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/2/2007
Analysis Period: Background AM-Mitigated
Highway: 218
From/To: Highway 68 / General Jim Moore
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Northbound Direction 2 = Southbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	589	vph	711	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	164		198	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	330	pcphpl	398	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	330	pcphpl	398	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	A		A	
Density, D	7.3	pc/mi/ln	8.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/7/2007
Analysis Period: Background AM-Mitigated
Highway: Reservation Road
From/To: Davis Road / Highway 68
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Eastbound Direction 2 = Westbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	7		7	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	1.8	mph	1.8	mph
Free-flow speed	56.7	mph	56.7	mph

VOLUME

Direction	1		2	
Volume, V	524	vph	485	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	142		132	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	293	pcphpl	271	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	293	pcphpl	271	pcphpl
Free-flow speed, FFS	56.7	mph	56.7	mph
Avg. passenger-car travel speed, S	56.7	mph	56.7	mph
Level of service, LOS	A		A	
Density, D	5.2	pc/mi/ln	4.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/7/2007
Analysis Period: Background AM-Mitigated
Highway: Davis Road
From/To: Reservation Road / Blanco Road
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Northbound Direction 2 = Southbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	3		3	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.8	mph	0.8	mph
Free-flow speed	57.7	mph	57.7	mph

VOLUME

Direction	1		2	
Volume, V	823	vph	719	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	224		195	
Trucks and buses	3	%	3	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.985		0.985	
Flow rate, vp	453	pcphpl	396	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	453	pcphpl	396	pcphpl
Free-flow speed, FFS	57.7	mph	57.7	mph
Avg. passenger-car travel speed, S	57.7	mph	57.7	mph
Level of service, LOS	A		A	
Density, D	7.9	pc/mi/ln	6.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 1/15/2007
Analysis Period: Background PM-Mitigated
Highway: 68
From/To: San Benancio Rd. / Torero Dr.
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Eastbound Direction 2 = Westbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	60.0	mph	60.0	mph

VOLUME

Direction	1		2	
Volume, V	1533	vph	1365	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	426		379	
Trucks and buses	4	%	4	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.980		0.980	
Flow rate, vp	868	pcphpl	773	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	868	pcphpl	773	pcphpl
Free-flow speed, FFS	60.0	mph	60.0	mph
Avg. passenger-car travel speed, S	60.0	mph	60.0	mph
Level of service, LOS	B		B	
Density, D	14.5	pc/mi/ln	12.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/2/2007
Analysis Period: Background PM-Mitigated
Highway: 218
From/To: Highway 68 / General Jim Moore
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Northbound Direction 2 = Southbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	860	vph	508	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	239		141	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	482	pcphpl	285	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	482	pcphpl	285	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	A		A	
Density, D	10.7	pc/mi/ln	6.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/2/2007
Analysis Period: Background PM-Mitigated
Highway: 218
From/To: Highway 68 / General Jim Moore
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Northbound Direction 2 = Southbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	860	vph	508	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	239		141	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	482	pcphpl	285	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	482	pcphpl	285	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	A		A	
Density, D	10.7	pc/mi/ln	6.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/7/2007
Analysis Period: Background PM-Mitigated
Highway: Reservation Road
From/To: Davis Road / Highway 68
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Eastbound Direction 2 = Westbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	7		7	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	1.8	mph	1.8	mph
Free-flow speed	56.7	mph	56.7	mph

VOLUME

Direction	1		2	
Volume, V	638	vph	619	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	173		168	
Trucks and buses	6	%	6	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	357	pcphpl	346	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	357	pcphpl	346	pcphpl
Free-flow speed, FFS	56.7	mph	56.7	mph
Avg. passenger-car travel speed, S	56.7	mph	56.7	mph
Level of service, LOS	A		A	
Density, D	6.3	pc/mi/ln	6.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: JHO
Agency/Co: Higgins Associates
Date: 2/7/2007
Analysis Period: Background PM-Mitigated
Highway: Davis Road
From/To: Reservation Road / Blanco Road
Jurisdiction: 6-151
Analysis Year:
Project ID: Direction 1 = Northbound Direction 2 = Southbound

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	3		3	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.8	mph	0.8	mph
Free-flow speed	57.7	mph	57.7	mph

VOLUME

Direction	1		2	
Volume, V	806	vph	1031	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	219		280	
Trucks and buses	3	%	3	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.985		0.985	
Flow rate, vp	444	pcphpl	568	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	444	pcphpl	568	pcphpl
Free-flow speed, FFS	57.7	mph	57.7	mph
Avg. passenger-car travel speed, S	57.7	mph	57.7	mph
Level of service, LOS	A		A	
Density, D	7.7	pc/mi/ln	9.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.