Appendix K

Level of Service Calculation Worksheets

Background + Alternative Project Conditions Mitigated

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1190	72	45	989	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)	1293	78	49	1075	162	64
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1293	78	49	1075	162	64
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	36.3	36.3	4.4	44.4	11.2	11.2
Effective Green, g (s)	38.3	38.3	4.1	46.4	11.4	11.4
Actuated g/C Ratio	0.58	0.58	0.06	0.71	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)	1863	921	110	2257	307	274
v/s Ratio Prot	c0.40		0.03	c0.34	c0.09	
v/s Ratio Perm		0.05				0.04
v/c Ratio	0.69	0.08	0.45	0.48	0.53	0.23
Uniform Delay, d1	9.6	6.0	29.8	4.3	24.8	23.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	2.9	0.1	0.8	0.2
Delay (s)	10.6	6.1	32.6	4.4	25.5	23.6
Level of Service	B	A	C	A	C	C
Approach Delay (s)	10.3			5.6	25.0	
Approach LOS	B			A	C	

Intersection Summary

HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.8	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	1083	25	95	897	244	71	31	77	97	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		1234			1015	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	1177	27	103	975	265	77	34	84	105	28	73
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	153	1177	27	103	975	265	0	195	0	0	133	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	72.6	72.6	8.0	68.4	68.4		21.0			21.0	21.0
Effective Green, g (s)	11.7	74.6	74.6	7.5	70.4	70.4		21.0			21.0	21.0
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	2074	1007	111	1957	968		225			185	289
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	0.57	0.03	0.93	0.50	0.27		0.87			0.72	0.25
Uniform Delay, d1	50.8	11.3	7.3	53.5	12.5	10.4		45.7			44.3	40.3
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		27.6			12.5	0.5
Delay (s)	80.2	12.4	7.3	115.8	13.4	11.1		73.3			56.8	40.8
Level of Service	F	B	A	F	B	B		E			E	D
Approach Delay (s)		19.9			20.8			73.3			51.1	
Approach LOS		B			C			E			D	

Intersection Summary

HCM Average Control Delay	25.7	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	62.1%	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)	253	759	3	2	1170	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	825	3	2	1272	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	825	3	2	1272	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)	25.2	82.8	82.8	0.6	58.0	58.0	1.2	2.6		16.7	17.7	17.7
Effective Green, g (s)	25.4	84.8	84.8	0.6	60.0	60.0	1.4	2.6		16.7	17.9	17.9
Actuated g/C Ratio	0.21	0.70	0.70	0.00	0.50	0.50	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)	372	1124	1112	9	1591	787	21	36		475	276	233
v/s Ratio Prot	0.16	c0.52		0.00	c0.40		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	0.80	0.54	0.48	0.19		0.26	0.00	0.65
Uniform Delay, d1	44.6	11.0	5.3	59.8	25.3	20.9	59.3	58.0		46.5	43.8	48.4
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	8.5	2.9	0.0	12.1	3.2	1.2	26.6	2.6		0.3	0.0	6.3
Delay (s)	53.0	13.9	5.4	72.0	28.6	22.1	85.9	60.7		46.8	43.8	54.8
Level of Service	D	B	A	E	C	C	F	E		D	D	D
Approach Delay (s)		23.6			27.0			75.5			51.2	
Approach LOS		C			C			E			D	

Intersection Summary

HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	799	46	21	1438	33	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			1382	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	868	50	23	1563	36	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	868	50	23	1563	36	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	65.0	65.0	2.2	62.9	62.9	11.4	11.4			11.4	11.4
Effective Green, g (s)	4.0	67.0	67.0	1.9	64.9	64.9	11.5	11.5			11.5	11.5
Actuated g/C Ratio	0.04	0.73	0.73	0.02	0.70	0.70	0.12	0.12			0.12	0.12
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	1160	1148	36	2248	1087	171	197			172	197
v/s Ratio Prot	c0.02	c0.54		0.01	0.49			0.02				
v/s Ratio Perm			0.03			0.02	0.04				0.02	c0.05
v/c Ratio	0.45	0.75	0.04	0.64	0.70	0.03	0.32	0.16			0.19	0.43
Uniform Delay, d1	43.1	7.6	3.6	44.9	8.0	4.2	36.9	36.1			36.3	37.4
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	4.2	2.9	0.0	31.7	1.0	0.0	1.1	0.4			0.5	1.5
Delay (s)	47.3	10.5	3.6	76.6	9.0	4.2	38.0	36.5			36.8	38.9
Level of Service	D	B	A	E	A	A	D	D			D	D
Approach Delay (s)		11.5			9.9			37.5			38.3	
Approach LOS		B			A			D			D	

Intersection Summary

HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	92.4	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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	730	136	240	1286	206	247
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)	793	148	261	1398	224	268
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	793	148	261	1398	224	268
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)	23.5	23.5	10.9	38.1	18.2	18.2
Effective Green, g (s)	25.5	25.5	10.6	40.1	17.9	17.9
Actuated g/C Ratio	0.39	0.39	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)	1236	612	551	1944	480	424
v/s Ratio Prot	0.25		0.08	c0.44	0.13	
v/s Ratio Perm		0.09				c0.17
v/c Ratio	0.64	0.24	0.47	0.72	0.47	0.63
Uniform Delay, d1	16.5	13.7	25.2	9.0	20.1	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.5	1.2	0.7	3.1
Delay (s)	17.5	13.9	25.6	10.2	20.8	24.2
Level of Service	B	B	C	B	C	C
Approach Delay (s)	17.0			12.7	22.7	
Approach LOS	B			B	C	

Intersection Summary

HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	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)	2	928	56	88	1366	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	1009	61	96	1485	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	1009	61	96	1499	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)	1.0	92.1	92.1	7.4	98.2			29.8	29.8		3.0	3.0
Effective Green, g (s)	1.0	94.1	94.1	7.1	100.2			29.8	29.8		3.0	3.0
Actuated g/C Ratio	0.01	0.63	0.63	0.05	0.67			0.20	0.20		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)	12	2007	993	161	2138			349	314		36	32
v/s Ratio Prot	0.00	0.32		c0.03	c0.47			0.10			c0.01	
v/s Ratio Perm			0.04						c0.14			0.00
v/c Ratio	0.17	0.50	0.06	0.60	0.70			0.50	0.69		0.28	0.16
Uniform Delay, d1	74.1	15.2	10.8	70.0	15.5			53.5	55.8		72.4	72.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	6.5	0.9	0.1	4.9	1.9			1.1	6.1		4.2	2.3
Delay (s)	80.6	16.1	11.0	74.9	17.5			54.6	61.9		76.6	74.5
Level of Service	F	B	B	E	B			D	E		E	E
Approach Delay (s)		15.9			21.0			58.7			75.9	
Approach LOS		B			C			E			E	

Intersection Summary

HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
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)	1	1069	36	71	1343	1	111	1	144	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	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			1775	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)	1	1162	39	77	1460	1	121	1	157	1	1	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1	1162	39	77	1461	0	0	122	157	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	51.7	51.7	6.0	56.5			10.0	10.0		5.2	5.2
Effective Green, g (s)	0.9	53.7	53.7	5.7	58.5			9.7	9.7		4.9	4.9
Actuated g/C Ratio	0.01	0.60	0.60	0.06	0.65			0.11	0.11		0.05	0.05
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)	18	1909	945	207	2080			191	168		99	86
v/s Ratio Prot	0.00	0.36		c0.02	c0.46			0.07			c0.00	
v/s Ratio Perm			0.02						c0.10			0.00
v/c Ratio	0.06	0.61	0.04	0.37	0.70			0.64	0.93		0.02	0.01
Uniform Delay, d1	44.1	11.5	7.5	40.4	10.1			38.5	39.8		40.3	40.3
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.5	0.1	0.8	2.0			6.0	50.2		0.1	0.0
Delay (s)	45.4	13.0	7.6	41.3	12.2			44.5	90.0		40.3	40.3
Level of Service	D	B	A	D	B			D	F		D	D
Approach Delay (s)		12.8			13.6			70.1			40.3	
Approach LOS		B			B			E			D	

Intersection Summary

HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.9%	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	1196	1056	7	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	1359	1160	8	1	513
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	19	1359	1160	8	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	33.4	28.7	28.7	22.5	22.5
Effective Green, g (s)	0.7	33.4	28.7	28.7	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	1673	1437	696	623	550
v/s Ratio Prot	0.01	c0.42	0.36		0.00	
v/s Ratio Perm				0.01		c0.33
v/c Ratio	1.00	0.81	0.81	0.01	0.00	0.93
Uniform Delay, d1	31.6	12.7	15.2	9.7	13.4	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	206.5	3.1	3.4	0.0	0.0	22.9
Delay (s)	238.1	15.8	18.6	9.8	13.4	42.9
Level of Service	F	B	B	A	B	D
Approach Delay (s)		18.8	18.6		42.8	
Approach LOS		B	B		D	

Intersection Summary

HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	63.9	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	666	203	458	462	78	240	903	628	107	633	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	1567
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	1567
Peak-hour factor, PHF	0.92	0.92	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	498	502	85	261	982	683	116	688	251
RTOR Reduction (vph)	0	0	36	0	0	13	0	0	0	0	0	56
Lane Group Flow (vph)	332	724	185	498	502	72	261	982	683	116	688	195
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)	9.6	23.3	31.1	9.8	23.5	31.0	7.8	31.8	90.4	7.5	31.5	41.1
Effective Green, g (s)	9.3	24.6	33.7	9.5	24.8	31.0	7.5	33.1	90.4	7.2	32.8	41.1
Actuated g/C Ratio	0.10	0.27	0.37	0.11	0.27	0.34	0.08	0.37	1.00	0.08	0.36	0.45
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)	353	963	590	524	971	537	285	1296	1583	141	1284	712
v/s Ratio Prot	0.10	c0.20	0.03	c0.10	0.14	0.01	c0.08	c0.28		0.07	0.19	0.03
v/s Ratio Perm			0.09			0.03			c0.43			0.10
v/c Ratio	0.94	0.75	0.31	0.95	0.52	0.13	0.92	0.76	0.43	0.82	0.54	0.27
Uniform Delay, d1	40.3	30.1	20.1	40.2	27.7	20.5	41.1	25.1	0.0	41.0	22.8	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.8	3.5	0.3	27.3	0.5	0.1	31.9	4.2	0.9	30.5	1.6	0.2
Delay (s)	73.0	33.6	20.4	67.5	28.3	20.6	73.1	29.3	0.9	71.5	24.4	15.6
Level of Service	E	C	C	E	C	C	E	C	A	E	C	B
Approach Delay (s)		41.6			45.7			25.2			27.5	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.1%	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)	568	322	0	0	396	158	1	5	7	161	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			3355			1713			1757	1583
Flt Permitted	0.95	1.00			1.00			1.00			0.95	1.00
Satd. Flow (perm)	3400	3505			3355			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	350	0	0	430	172	1	5	8	175	1	470
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	617	350	0	0	602	0	0	14	0	0	176	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	35.0			15.5			6.2			11.6	27.1
Effective Green, g (s)	15.5	35.0			15.5			6.2			11.6	27.1
Actuated g/C Ratio	0.24	0.54			0.24			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)	813	1893			803			164			315	760
v/s Ratio Prot	c0.18	0.10			c0.18			c0.01			0.10	c0.15
v/s Ratio Perm												0.15
v/c Ratio	0.76	0.18			0.75			0.09			0.56	0.62
Uniform Delay, d1	22.9	7.6			22.9			26.7			24.3	14.8
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	4.1	0.0			3.9			0.2			2.1	1.5
Delay (s)	27.0	7.7			26.7			26.9			26.4	16.3
Level of Service	C	A			C			C			C	B
Approach Delay (s)		20.0			26.7			26.9			19.1	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	16.0
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)	469	537	20	136	610	213	25	530	221	176	450	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	22	148	663	232	27	576	240	191	489	827
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	188
Lane Group Flow (vph)	510	584	22	148	663	191	27	576	240	191	489	639
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	25.2	2.2	17.9	17.9	7.3	23.5	30.8
Effective Green, g (s)	7.8	23.0	20.5	4.7	19.9	29.2	1.7	20.4	17.9	6.8	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	0.10	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)	549	1148	448	228	993	646	42	1018	687	329	1273	1368
v/s Ratio Prot	c0.10	0.17		0.04	c0.19	0.04	0.02	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	0.30	0.64	0.57	0.35	0.58	0.38	0.47
Uniform Delay, d1	31.3	19.4	18.2	32.3	22.6	14.0	34.3	21.5	21.7	30.7	16.9	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	21.8	1.6	0.2	4.7	3.6	0.1	22.5	1.0	0.5	1.7	0.3	0.1
Delay (s)	53.1	21.0	18.4	37.0	26.1	14.1	56.8	22.5	22.3	32.4	17.2	12.0
Level of Service	D	C	B	D	C	B	E	C	C	C	B	B
Approach Delay (s)		35.6			25.0			23.5			16.3	
Approach LOS		D			C			C			B	

Intersection Summary

HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	727	48	43	1468	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)	790	52	47	1596	77	90
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	790	52	47	1596	77	90
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	36.2	36.2	3.4	43.3	8.4	8.4
Effective Green, g (s)	38.2	38.2	3.1	45.3	8.6	8.6
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)	1975	977	89	2342	246	220
v/s Ratio Prot	0.25		0.03	c0.50	0.04	
v/s Ratio Perm		0.03				c0.06
v/c Ratio	0.40	0.05	0.53	0.68	0.31	0.41
Uniform Delay, d1	6.0	4.7	28.7	4.4	24.0	24.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	5.6	0.7	0.3	0.5
Delay (s)	6.1	4.7	34.2	5.1	24.3	24.8
Level of Service	A	A	C	A	C	C
Approach Delay (s)	6.0			5.9	24.5	
Approach LOS	A			A	C	

Intersection Summary

HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	8.0
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)	85	705	19	54	1260	170	32	33	138	251	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		1546			1028	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	766	21	59	1370	185	35	36	150	273	46	238
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	92	766	21	59	1370	185	0	221	0	0	319	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	0.24		0.03	c0.43							
v/s Ratio Perm			0.01			0.12		0.14			c0.31	0.15
v/c Ratio	1.02	0.50	0.03	0.66	0.89	0.24		0.46			1.00	0.49
Uniform Delay, d1	35.5	13.3	10.3	34.8	17.7	11.5		20.8			25.8	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	1.2	0.1	15.9	8.4	0.8		0.7			51.3	0.8
Delay (s)	136.5	14.5	10.3	50.7	26.1	12.2		21.5			77.1	21.7
Level of Service	F	B	B	D	C	B		C			E	C
Approach Delay (s)		27.2			25.4			21.5			53.4	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.0%	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)	109	945	10	7	1214	118	5	1	3	373	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	1027	11	8	1320	128	5	1	3	405	3	204
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	118	1027	11	8	1320	128	5	4	0	405	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	88.7	88.7	0.7	74.5	74.5	0.7	2.8		20.4	22.1	22.1
Effective Green, g (s)	14.9	90.7	90.7	0.7	76.5	76.5	0.9	2.8		20.4	22.3	22.3
Actuated g/C Ratio	0.11	0.69	0.69	0.01	0.59	0.59	0.01	0.02		0.16	0.17	0.17
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)	202	1111	1099	9	1874	927	12	35		536	318	270
v/s Ratio Prot	c0.07	c0.64		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	0.58	0.92	0.01	0.89	0.70	0.14	0.42	0.11		0.76	0.01	0.76
Uniform Delay, d1	54.9	17.0	6.1	64.9	19.1	12.2	64.6	62.7		52.7	45.0	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
Incremental Delay, d2	5.8	13.0	0.0	230.5	1.4	0.1	35.8	1.5		6.0	0.0	11.7
Delay (s)	60.7	30.0	6.1	295.4	20.5	12.3	100.4	64.1		58.7	45.0	63.3
Level of Service	E	C	A	F	C	B	F	E		E	D	E
Approach Delay (s)		32.9			21.3			84.3			60.2	
Approach LOS		C			C			F			E	

Intersection Summary

HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	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)	60	1197	64	13	1196	31	70	5	30	41	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	1351	1620			1333	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	1301	70	14	1300	34	76	5	33	45	4	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	1301	70	14	1300	34	76	38	0	0	49	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	c0.81		0.01	0.41			0.02				
v/s Ratio Perm			0.04			0.02	c0.06				0.04	0.05
v/c Ratio	0.61	1.01	0.05	0.88	0.54	0.03	0.59	0.25			0.39	0.52
Uniform Delay, d1	62.2	13.0	2.6	67.1	6.8	4.1	58.8	56.8			57.6	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	26.7	0.0	161.3	0.3	0.0	6.7	0.8			1.9	3.0
Delay (s)	72.3	39.8	2.7	228.4	7.1	4.1	65.5	57.7			59.6	61.3
Level of Service	E	D	A	F	A	A	E	E			E	E
Approach Delay (s)		39.5			9.3			62.9			60.7	
Approach LOS		D			A			E			E	

Intersection Summary

HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	135.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1127	140	211	1023	217	386
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	1561
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3200	1583	3433	3200	1770	1561
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1225	152	229	1112	236	420
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1225	152	229	1112	236	420
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)	49.2	49.2	12.3	65.2	36.7	36.7
Effective Green, g (s)	51.2	51.2	12.0	67.2	36.4	36.4
Actuated g/C Ratio	0.46	0.46	0.11	0.60	0.33	0.33
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)	1468	726	369	1927	577	509
v/s Ratio Prot	c0.38		0.07	c0.35	0.13	
v/s Ratio Perm		0.10				c0.27
v/c Ratio	0.83	0.21	0.62	0.58	0.41	0.83
Uniform Delay, d1	26.5	18.1	47.6	13.5	29.2	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.1	2.8	0.3	0.5	10.5
Delay (s)	30.7	18.2	50.4	13.9	29.7	45.2
Level of Service	C	B	D	B	C	D
Approach Delay (s)	29.3			20.1	39.6	
Approach LOS	C			C	D	

Intersection Summary

HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.8%	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	1392	121	157	1152	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	1513	132	171	1252	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	1513	132	171	1260	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	95.6	95.6	11.9	106.0			22.1	22.1		2.7	2.7
Effective Green, g (s)	1.2	97.6	97.6	11.6	108.0			22.1	22.1		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	2082	1030	265	2304			262	231		32	28
v/s Ratio Prot	0.00	c0.47		c0.05	0.39			0.05			c0.00	
v/s Ratio Perm			0.08						c0.11			0.00
v/c Ratio	0.07	0.73	0.13	0.65	0.55			0.34	0.76		0.16	0.14
Uniform Delay, d1	73.8	17.4	10.0	67.2	9.7			57.4	61.4		72.5	72.5
Progression Factor	1.00	1.00	1.00	1.15	0.63			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	2.3	0.3	4.1	0.8			0.8	13.2		2.3	2.3
Delay (s)	76.0	19.6	10.2	81.7	6.9			58.2	74.6		74.8	74.9
Level of Service	E	B	B	F	A			E	E		E	E
Approach Delay (s)		18.9			15.8			69.1			74.8	
Approach LOS		B			B			E			E	

Intersection Summary

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
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)	2	1453	112	151	1235	1	72	2	111	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	1579	122	164	1342	1	78	2	121	1	1	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	1579	122	164	1343	0	0	80	121	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	99.8	99.8	12.4	110.9			15.4	15.4		5.3	5.3
Effective Green, g (s)	1.0	101.8	101.8	12.1	112.9			15.1	15.1		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	2172	1074	264	2409			179	157		61	53
v/s Ratio Prot	0.00	c0.49		c0.05	0.42			0.05			0.00	
v/s Ratio Perm			0.08						c0.08			c0.00
v/c Ratio	0.17	0.73	0.11	0.62	0.56			0.45	0.77		0.03	0.04
Uniform Delay, d1	74.1	15.3	8.4	66.7	7.9			63.5	65.8		70.2	70.2
Progression Factor	1.19	1.58	1.07	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	4.6	1.5	0.2	3.9	0.9			1.3	19.8		0.2	0.2
Delay (s)	92.5	25.7	9.1	70.6	8.8			64.8	85.6		70.3	70.4
Level of Service	F	C	A	E	A			E	F		E	E
Approach Delay (s)		24.6			15.6			77.3			70.4	
Approach LOS		C			B			E			E	

Intersection Summary

HCM Average Control Delay	23.7	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	65.3%	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	1503	1344	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	1634	1461	46	2	47
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	66	1634	1461	46	2	47
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	1.6	26.5	20.9	20.9	6.7	6.7
Effective Green, g (s)	1.6	26.5	20.9	20.9	6.7	6.7
Actuated g/C Ratio	0.04	0.64	0.51	0.51	0.16	0.16
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)	69	2058	1623	803	288	257
v/s Ratio Prot	0.04	c0.51	c0.46		0.00	
v/s Ratio Perm				0.03		c0.03
v/c Ratio	0.96	0.79	0.90	0.06	0.01	0.18
Uniform Delay, d1	19.8	5.4	9.2	5.2	14.5	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	92.3	2.2	7.2	0.0	0.0	0.3
Delay (s)	112.1	7.6	16.4	5.2	14.5	15.2
Level of Service	F	A	B	A	B	B
Approach Delay (s)		11.6	16.1		15.2	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	482	542	186	686	727	127	234	863	506	95	934	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	1567
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	1567
Peak-hour factor, PHF	0.92	0.92	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	746	790	138	254	938	550	103	1015	407
RTOR Reduction (vph)	0	0	8	0	0	17	0	0	0	0	0	10
Lane Group Flow (vph)	524	589	194	746	790	121	254	938	550	103	1015	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)	21.8	28.9	40.9	22.5	29.6	40.0	12.0	42.4	122.2	10.4	40.8	62.6
Effective Green, g (s)	21.5	30.2	43.5	22.2	30.9	40.0	11.7	43.7	122.2	10.1	42.1	62.6
Actuated g/C Ratio	0.18	0.25	0.36	0.18	0.25	0.33	0.10	0.36	1.00	0.08	0.34	0.51
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)	604	875	557	907	895	512	329	1266	1563	146	1219	803
v/s Ratio Prot	c0.15	0.17	0.04	0.15	c0.22	0.02	c0.07	0.27		0.06	c0.29	0.09
v/s Ratio Perm			0.09			0.06			c0.35			0.17
v/c Ratio	0.87	0.67	0.35	0.82	0.88	0.24	0.77	0.74	0.35	0.71	0.83	0.49
Uniform Delay, d1	49.0	41.5	28.9	48.1	43.9	30.0	53.9	34.3	0.0	54.6	36.8	19.5
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	12.5	2.1	0.4	6.1	10.5	0.2	10.7	3.9	0.6	14.4	6.7	0.5
Delay (s)	61.5	43.7	29.3	54.2	54.4	30.2	64.7	38.2	0.6	69.0	43.6	19.9
Level of Service	E	D	C	D	D	C	E	D	A	E	D	B
Approach Delay (s)		48.6			52.3			30.2			39.0	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	122.2	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)	716	506	1	6	511	124	0	1	1	166	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	3409			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	3409			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	550	1	7	555	135	0	1	1	180	1	864
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	778	551	0	7	690	0	0	2	0	0	181	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)	32.0	54.5		0.8	23.3			5.7			13.4	45.4
Effective Green, g (s)	32.0	54.5		0.8	23.3			5.7			13.4	45.4
Actuated g/C Ratio	0.35	0.60		0.01	0.26			0.06			0.15	0.50
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)	1215	2133		16	879			110			260	865
v/s Ratio Prot	0.23	0.16		0.00	c0.20			c0.00			0.10	c0.35
v/s Ratio Perm												0.19
v/c Ratio	0.64	0.26		0.44	0.78			0.02			0.70	1.00
Uniform Delay, d1	24.4	8.4		44.6	31.2			39.7			36.6	22.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.2	0.1		18.0	4.7			0.1			7.9	30.1
Delay (s)	25.6	8.5		62.5	35.9			39.8			44.4	52.6
Level of Service	C	A		E	D			D			D	D
Approach Delay (s)		18.5			36.1			39.8			51.1	
Approach LOS		B			D			D			D	

Intersection Summary

HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.4	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)	739	602	17	306	653	359	34	715	282	204	706	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	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
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	18	333	710	390	37	777	307	222	767	522
RTOR Reduction (vph)	0	0	0	0	0	11	0	0	0	0	0	82
Lane Group Flow (vph)	803	654	18	333	710	379	37	777	307	222	767	440
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)	14.1	22.1	22.1	10.0	17.5	26.4	2.7	20.0	20.0	8.9	26.7	40.8
Effective Green, g (s)	14.6	24.6	22.1	9.5	19.5	30.4	2.2	22.5	20.0	8.4	28.7	44.8
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	0.55
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)	899	1075	432	403	852	594	48	983	688	356	1254	1541
v/s Ratio Prot	c0.16	0.18		0.10	c0.20	0.09	0.02	c0.22		0.06	c0.22	0.06
v/s Ratio Perm			0.01			0.15			0.11			0.10
v/c Ratio	0.89	0.61	0.04	0.83	0.83	0.64	0.77	0.79	0.45	0.62	0.61	0.29
Uniform Delay, d1	32.4	24.1	21.7	34.9	29.2	20.8	39.1	27.1	25.8	34.8	21.6	9.6
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	10.9	2.6	0.2	12.4	9.4	1.7	49.4	4.9	0.8	2.4	1.1	0.0
Delay (s)	43.4	26.6	21.8	47.3	38.6	22.5	88.6	32.0	26.6	37.2	22.7	9.6
Level of Service	D	C	C	D	D	C	F	C	C	D	C	A
Approach Delay (s)		35.7			36.2			32.4			20.3	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	31.0	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	71.0%	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj AM-Mitigated
Highway: 68
From/To: San Benancio Rd. / Torero Dr.
Jurisdiction: 252572
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	1565	vph	1387	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	435		385	
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	886	pcphpl	785	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	886	pcphpl	785	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	14.8	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj AM-Mitigated
Highway: 68
From/To: Torero Dr. / Begin-End Freeway
Jurisdiction: 252572
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	1197	vph	1063	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	333		295	
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	678	pcphpl	602	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	678	pcphpl	602	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	11.3	pc/mi/ln	10.0	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:	LM
Agency/Co:	HMM
Date:	10/15/2008
Analysis Period:	Back+Alt Proj AM-Mitigated
Highway:	218
From/To:	Highway 68 / General Jim Moore
Jurisdiction:	252572
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	595	vph	713	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	165		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	333	pcphpl	400	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	333	pcphpl	400	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	7.4	pc/mi/ln	8.9	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj AM-Mitigated
Highway: Reservation Road
From/To: Davis Road / Highway 68
Jurisdiction: 252572
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	490	vph	554	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	133		151	
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	274	pcphpl	310	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	274	pcphpl	310	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	4.8	pc/mi/ln	5.5	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj AM-Mitigated
Highway: Davis Road
From/To: Reservation Road / Blanco Road
Jurisdiction: 252572
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	776	vph	606	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	211		165	
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	428	pcphpl	334	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	428	pcphpl	334	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	7.4	pc/mi/ln	5.8	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj PM-Mitigated
Highway: 68
From/To: San Benancio Rd. / Torero Dr.
Jurisdiction: 252572
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	1565	vph	1387	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	435		385	
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	886	pcphpl	785	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	886	pcphpl	785	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	14.8	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj PM-Mitigated
Highway: 68
From/To: Torero Dr. / Begin-End Freeway
Jurisdiction: 252572
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	1505	vph	1386	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	418		385	
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	852	pcphpl	785	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	852	pcphpl	785	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	14.2	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj PM-Mitigated
Highway: 218
From/To: Highway 68 / General Jim Moore
Jurisdiction: 252572
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	865	vph	515	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	240		143	
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	485	pcphpl	288	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	485	pcphpl	288	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	10.8	pc/mi/ln	6.4	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Project PM-Mitigated
Highway: Reservation Road
From/To: Davis Road / Highway 68
Jurisdiction: 252572
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	681	vph	651	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	185		177	
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	381	pcphpl	364	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	381	pcphpl	364	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	6.7	pc/mi/ln	6.4	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: LM
Agency/Co: HMM
Date: 10/15/2008
Analysis Period: Back+Alt Proj PM-Mitigated
Highway: Davis Road
From/To: Reservation Road / Blanco Road
Jurisdiction: 252572
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	1031	vph	1029	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	280		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	568	pcphpl	567	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	568	pcphpl	567	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	9.9	pc/mi/ln	9.8	pc/mi/ln

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