Appendix I

Level of Service Calculation Worksheets

Background + Project Conditions Mitigated

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1193	72	45	991	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)	1297	78	49	1077	162	64
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1297	78	49	1077	162	64
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	36.5	36.5	4.4	44.6	11.1	11.1
Effective Green, g (s)	38.5	38.5	4.1	46.6	11.3	11.3
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)	1869	925	110	2263	304	271
v/s Ratio Prot	c0.41		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	0.24
Uniform Delay, d1	9.6	6.0	29.8	4.3	24.9	23.6
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	0.9	0.2
Delay (s)	10.5	6.0	32.7	4.3	25.8	23.7
Level of Service	B	A	C	A	C	C
Approach Delay (s)	10.2			5.6	25.2	
Approach LOS	B			A	C	

Intersection Summary

HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.9	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	1086	25	95	899	245	71	31	77	98	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			1784	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.70			0.55	1.00
Satd. Flow (perm)	1770	3200	1553	1703	3200	1583		1227			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	1180	27	103	977	266	77	34	84	107	28	73
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	153	1180	27	103	977	266	0	195	0	0	135	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		21.1			21.1	21.1
Effective Green, g (s)	11.7	74.6	74.6	7.5	70.4	70.4		21.1			21.1	21.1
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	2072	1006	111	1956	967		225			186	290
v/s Ratio Prot	c0.09	c0.37		0.06	0.31							
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	0.28		0.87			0.73	0.25
Uniform Delay, d1	50.9	11.3	7.3	53.6	12.5	10.5		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			13.1	0.5
Delay (s)	80.3	12.5	7.3	115.9	13.5	11.2		73.3			57.5	40.7
Level of Service	F	B	A	F	B	B		E			E	D
Approach Delay (s)		20.0			20.8			73.3			51.6	
Approach LOS		C			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)	115.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.2%	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)	253	765	3	2	1174	395	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	832	3	2	1276	429	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	832	3	2	1276	429	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	82.9	82.9	0.6	58.1	58.1	1.2	2.6		16.7	17.7	17.7
Effective Green, g (s)	25.4	84.9	84.9	0.6	60.1	60.1	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	1125	1113	9	1592	788	21	36		475	276	232
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	0.74	0.00	0.22	0.80	0.54	0.48	0.19		0.26	0.00	0.65
Uniform Delay, d1	44.6	11.1	5.3	59.9	25.4	20.9	59.3	58.1		46.5	43.8	48.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.5	2.9	0.0	12.1	3.3	1.2	26.6	2.6		0.3	0.0	6.7
Delay (s)	53.1	14.0	5.3	72.0	28.7	22.1	85.9	60.7		46.8	43.9	55.2
Level of Service	D	B	A	E	C	C	F	E		D	D	E
Approach Delay (s)		23.7			27.1			75.6			51.4	
Approach LOS		C			C			E			D	

Intersection Summary

HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	805	46	21	1442	33	51	2	28	30	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	0.73	1.00			0.74	1.00
Satd. Flow (perm)	1770	1600	1583	1770	3200	1547	1369	1581			1377	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	875	50	23	1567	36	55	2	30	33	1	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	35	875	50	23	1567	36	55	32	0	0	34	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)	3.6	68.1	68.1	2.1	66.6	66.6	11.6	11.6			11.6	11.6
Effective Green, g (s)	3.3	70.1	70.1	1.8	68.6	68.6	11.7	11.7			11.7	11.7
Actuated g/C Ratio	0.03	0.73	0.73	0.02	0.72	0.72	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)	61	1173	1161	33	2296	1110	168	193			169	194
v/s Ratio Prot	c0.02	c0.55		0.01	0.49			0.02				
v/s Ratio Perm			0.03			0.02	0.04				0.02	c0.05
v/c Ratio	0.57	0.75	0.04	0.70	0.68	0.03	0.33	0.17			0.20	0.43
Uniform Delay, d1	45.5	7.5	3.5	46.6	7.5	3.9	38.4	37.6			37.7	38.9
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	12.4	2.8	0.0	48.5	0.9	0.0	1.1	0.4			0.6	1.5
Delay (s)	57.8	10.3	3.5	95.1	8.4	3.9	39.5	38.0			38.3	40.4
Level of Service	E	B	A	F	A	A	D	D			D	D
Approach Delay (s)		11.7			9.5			38.9			39.8	
Approach LOS		B			A			D			D	

Intersection Summary

HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	737	136	240	1290	206	248
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)	801	148	261	1402	224	270
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	801	148	261	1402	224	270
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)	23.7	23.7	10.9	38.3	18.3	18.3
Effective Green, g (s)	25.7	25.7	10.6	40.3	18.0	18.0
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)	1240	614	549	1945	481	424
v/s Ratio Prot	0.25		0.08	c0.44	0.13	
v/s Ratio Perm		0.09				c0.17
v/c Ratio	0.65	0.24	0.48	0.72	0.47	0.64
Uniform Delay, d1	16.6	13.7	25.3	9.1	20.1	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.5	1.3	0.7	3.1
Delay (s)	17.6	13.9	25.8	10.3	20.9	24.4
Level of Service	B	B	C	B	C	C
Approach Delay (s)	17.0			12.8	22.8	
Approach LOS	B			B	C	

Intersection Summary

HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	8.0
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)	2	936	56	88	1370	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	1017	61	96	1489	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	1017	61	96	1503	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	0.51	0.06	0.60	0.70			0.50	0.69		0.28	0.16
Uniform Delay, d1	74.1	15.3	10.8	70.0	15.6			53.5	55.8		72.4	72.3
Progression Factor	1.00	1.00	1.00	0.88	1.32			1.00	1.00		1.00	1.00
Incremental Delay, d2	6.5	0.9	0.1	4.0	1.6			1.1	6.1		4.2	2.3
Delay (s)	80.6	16.2	11.0	65.7	22.2			54.6	61.9		76.6	74.5
Level of Service	F	B	B	E	C			D	E		E	E
Approach Delay (s)		16.0			24.8			58.7			75.9	
Approach LOS		B			C			E			E	

Intersection Summary

HCM Average Control Delay	26.3	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	60.5%	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)	1	1076	37	73	1345	1	113	1	149	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	1170	40	79	1462	1	123	1	162	1	1	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1	1170	40	79	1463	0	0	124	162	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	98.9	98.9	8.5	106.2			20.2	20.2		5.3	5.3
Effective Green, g (s)	0.9	100.9	100.9	8.2	108.2			19.9	19.9		5.0	5.0
Actuated g/C Ratio	0.01	0.67	0.67	0.05	0.72			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	2153	1065	179	2308			235	207		61	53
v/s Ratio Prot	0.00	0.37		c0.02	c0.46			0.07			c0.00	
v/s Ratio Perm			0.03						c0.10			0.00
v/c Ratio	0.09	0.54	0.04	0.44	0.63			0.53	0.78		0.03	0.02
Uniform Delay, d1	74.1	12.7	8.2	68.7	10.7			60.7	63.0		70.2	70.1
Progression Factor	0.83	1.23	1.46	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.9	0.1	1.3	1.3			1.6	16.8		0.2	0.1
Delay (s)	64.3	16.5	12.1	69.9	12.1			62.3	79.7		70.3	70.2
Level of Service	E	B	B	E	B			E	E		E	E
Approach Delay (s)		16.4			15.0			72.2			70.3	
Approach LOS		B			B			E			E	

Intersection Summary

HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.1%	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	1208	1060	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	1373	1165	8	1	513
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	19	1373	1165	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)	0.8	33.7	28.9	28.9	22.5	22.5
Effective Green, g (s)	0.8	33.7	28.9	28.9	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)	22	1680	1440	697	620	547
v/s Ratio Prot	0.01	c0.43	0.36		0.00	
v/s Ratio Perm				0.01		c0.33
v/c Ratio	0.86	0.82	0.81	0.01	0.00	0.94
Uniform Delay, d1	31.6	12.7	15.3	9.8	13.6	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	129.4	3.2	3.5	0.0	0.0	23.8
Delay (s)	161.0	15.9	18.7	9.8	13.6	44.0
Level of Service	F	B	B	A	B	D
Approach Delay (s)		17.9	18.7		43.9	
Approach LOS		B	B		D	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	666	203	461	462	78	240	904	630	107	647	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	501	502	85	261	983	685	116	703	251
RTOR Reduction (vph)	0	0	34	0	0	13	0	0	0	0	0	56
Lane Group Flow (vph)	332	724	187	501	502	72	261	983	685	116	703	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)	9.7	23.3	31.1	9.9	23.5	31.0	7.8	31.7	90.4	7.5	31.4	41.1
Effective Green, g (s)	9.4	24.6	33.7	9.6	24.8	31.0	7.5	33.0	90.4	7.2	32.7	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)	357	963	590	530	971	537	285	1292	1583	141	1280	712
v/s Ratio Prot	0.10	c0.20	0.03	c0.10	0.14	0.01	c0.08	c0.28		0.07	0.20	0.03
v/s Ratio Perm			0.09			0.03			c0.43			0.10
v/c Ratio	0.93	0.75	0.32	0.95	0.52	0.13	0.92	0.76	0.43	0.82	0.55	0.27
Uniform Delay, d1	40.2	30.1	20.2	40.1	27.7	20.5	41.1	25.2	0.0	41.0	23.0	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	29.9	3.5	0.3	25.9	0.5	0.1	31.9	4.3	0.9	30.5	1.7	0.2
Delay (s)	70.1	33.6	20.5	66.0	28.3	20.6	73.1	29.5	0.9	71.5	24.7	15.6
Level of Service	E	C	C	E	C	C	E	C	A	E	C	B
Approach Delay (s)		40.8			45.0			25.2			27.6	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	33.4	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	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	568	327	0	0	398	161	1	5	7	163	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			3354			1713			1757	1583
Flt Permitted	0.95	1.00			1.00			1.00			0.95	1.00
Satd. Flow (perm)	3400	3505			3354			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	355	0	0	433	175	1	5	8	177	1	470
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	617	355	0	0	608	0	0	14	0	0	178	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)	15.1	34.6			15.5			6.1			11.6	26.7
Effective Green, g (s)	15.1	34.6			15.5			6.1			11.6	26.7
Actuated g/C Ratio	0.23	0.54			0.24			0.09			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)	798	1886			809			163			317	756
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	0.77	0.19			0.75			0.09			0.56	0.62
Uniform Delay, d1	23.0	7.6			22.6			26.6			24.0	14.8
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	4.7	0.0			4.0			0.2			2.3	1.6
Delay (s)	27.7	7.7			26.6			26.8			26.3	16.4
Level of Service	C	A			C			C			C	B
Approach Delay (s)		20.4			26.6			26.8			19.1	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.1%	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)	469	537	21	136	610	213	26	532	221	176	451	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	23	148	663	232	28	578	240	191	490	827
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	0	188
Lane Group Flow (vph)	510	584	23	148	663	191	28	578	240	191	490	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	0.67	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	26.8	1.0	0.5	1.7	0.3	0.1
Delay (s)	53.1	21.0	18.4	37.0	26.1	14.1	61.1	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			23.7			16.3	
Approach LOS		D			C			C			B	

Intersection Summary

HCM Average Control Delay	24.5	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	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	729	48	43	1473	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)	792	52	47	1601	77	90
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	792	52	47	1601	77	90
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	36.4	36.4	3.4	43.5	8.4	8.4
Effective Green, g (s)	38.4	38.4	3.1	45.5	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)	1979	979	88	2345	245	219
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	28.8	4.4	24.1	24.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	6.1	0.7	0.3	0.5
Delay (s)	6.1	4.7	34.9	5.1	24.4	24.9
Level of Service	A	A	C	A	C	C
Approach Delay (s)	6.0			6.0	24.6	
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)	62.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	707	19	54	1265	171	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	768	21	59	1375	186	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	768	21	59	1375	186	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	0.90	0.25		0.46			1.00	0.49
Uniform Delay, d1	35.5	13.3	10.3	34.8	17.8	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	8.6	0.8		0.7			51.3	0.8
Delay (s)	136.5	14.5	10.3	50.7	26.3	12.2		21.5			77.1	21.7
Level of Service	F	B	B	D	C	B		C			E	C
Approach Delay (s)		27.1			25.6			21.5			53.4	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	109	948	10	7	1220	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	1030	11	8	1326	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	1030	11	8	1326	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	89.6	89.6	0.7	75.4	75.4	0.7	2.9		20.3	22.1	22.1
Effective Green, g (s)	14.9	91.6	91.6	0.7	77.4	77.4	0.9	2.9		20.3	22.3	22.3
Actuated g/C Ratio	0.11	0.70	0.70	0.01	0.59	0.59	0.01	0.02		0.15	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)	201	1115	1103	9	1883	932	12	36		530	316	268
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	0.59	0.92	0.01	0.89	0.70	0.14	0.42	0.11		0.76	0.01	0.76
Uniform Delay, d1	55.4	17.0	6.1	65.4	19.0	12.1	65.0	63.0		53.3	45.4	52.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	12.9	0.0	230.5	1.4	0.1	35.8	1.4		6.5	0.0	12.4
Delay (s)	61.3	29.8	6.1	295.8	20.4	12.2	100.9	64.4		59.8	45.4	64.4
Level of Service	E	C	A	F	C	B	F	E		E	D	E
Approach Delay (s)		32.8			21.2			84.7			61.3	
Approach LOS		C			C			F			E	

Intersection Summary

HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	131.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1200	64	13	1202	32	70	5	30	42	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	0.72	1.00			0.72	1.00
Satd. Flow (perm)	1770	1600	1583	1770	3200	1583	1349	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	1304	70	14	1307	35	76	5	33	46	4	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	1304	70	14	1307	35	76	38	0	0	50	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	128	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			57.7	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	27.3	0.0	161.3	0.3	0.0	7.2	0.8			2.0	3.0
Delay (s)	72.3	40.4	2.7	228.4	7.1	4.1	66.0	57.7			59.7	61.3
Level of Service	E	D	A	F	A	A	E	E			E	E
Approach Delay (s)		40.0			9.3			63.3			60.7	
Approach LOS		D			A			E			E	

Intersection Summary

HCM Average Control Delay	28.0	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	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1131	140	211	1030	217	385
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)	1229	152	229	1120	236	418
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1229	152	229	1120	236	418
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)	49.3	49.3	12.3	65.3	36.5	36.5
Effective Green, g (s)	51.3	51.3	12.0	67.3	36.2	36.2
Actuated g/C Ratio	0.46	0.46	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)	1472	728	369	1931	575	507
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	0.82
Uniform Delay, d1	26.4	18.0	47.6	13.5	29.3	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	0.4	0.5	10.5
Delay (s)	30.6	18.1	50.4	13.8	29.8	45.2
Level of Service	C	B	D	B	C	D
Approach Delay (s)	29.2			20.0	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)	111.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1395	121	157	1159	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	1516	132	171	1260	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	1516	132	171	1268	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	0.40			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	4.0	0.8			0.8	13.2		2.3	2.3
Delay (s)	76.0	19.7	10.2	81.5	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	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1454	114	157	1241	1	73	2	116	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	1580	124	171	1349	1	79	2	126	1	1	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	2	1580	124	171	1350	0	0	81	126	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	99.0	99.0	12.8	110.5			15.8	15.8		5.3	5.3
Effective Green, g (s)	1.0	101.0	101.0	12.5	112.5			15.5	15.5		5.0	5.0
Actuated g/C Ratio	0.01	0.67	0.67	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	2155	1066	273	2400			184	161		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	0.12	0.63	0.56			0.44	0.78		0.03	0.04
Uniform Delay, d1	74.1	15.8	8.7	66.5	8.1			63.2	65.6		70.2	70.2
Progression Factor	1.19	1.57	1.08	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	4.6	1.6	0.2	3.8	1.0			1.2	20.8		0.2	0.2
Delay (s)	92.6	26.4	9.5	70.3	9.1			64.4	86.4		70.3	70.4
Level of Service	F	C	A	E	A			E	F		E	E
Approach Delay (s)		25.3			16.0			77.8			70.4	
Approach LOS		C			B			E			E	

Intersection Summary

HCM Average Control Delay	24.4	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	65.6%	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	1509	1356	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	1640	1474	46	2	47
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	66	1640	1474	46	2	47
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.2	33.8	27.6	27.6	7.0	7.0
Effective Green, g (s)	2.2	33.8	27.6	27.6	7.0	7.0
Actuated g/C Ratio	0.05	0.69	0.57	0.57	0.14	0.14
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)	80	2216	1810	895	254	227
v/s Ratio Prot	0.04	c0.51	c0.46		0.00	
v/s Ratio Perm				0.03		c0.03
v/c Ratio	0.82	0.74	0.81	0.05	0.01	0.21
Uniform Delay, d1	23.1	4.7	8.5	4.7	17.9	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.2	1.4	2.9	0.0	0.0	0.5
Delay (s)	70.3	6.1	11.5	4.8	17.9	18.9
Level of Service	E	A	B	A	B	B
Approach Delay (s)		8.6	11.3		18.9	
Approach LOS		A	B		B	

Intersection Summary

HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	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)	482	542	186	690	727	127	234	880	513	95	942	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	750	790	138	254	957	558	103	1024	407
RTOR Reduction (vph)	0	0	8	0	0	16	0	0	0	0	0	10
Lane Group Flow (vph)	524	589	194	750	790	122	254	957	558	103	1024	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	29.0	41.0	22.4	29.6	39.9	12.0	42.5	122.2	10.3	40.8	62.6
Effective Green, g (s)	21.5	30.3	43.6	22.1	30.9	39.9	11.7	43.8	122.2	10.0	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	878	559	902	895	511	329	1268	1563	145	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			c0.36			0.17
v/c Ratio	0.87	0.67	0.35	0.83	0.88	0.24	0.77	0.75	0.36	0.71	0.84	0.49
Uniform Delay, d1	49.0	41.5	28.9	48.3	43.9	30.1	53.9	34.5	0.0	54.7	36.9	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	6.6	10.5	0.2	10.7	4.2	0.6	15.1	7.1	0.5
Delay (s)	61.5	43.6	29.2	54.8	54.4	30.3	64.7	38.7	0.6	69.8	44.0	19.9
Level of Service	E	D	C	D	D	C	E	D	A	E	D	B
Approach Delay (s)		48.5			52.6			30.4			39.4	
Approach LOS		D			D			C			D	

Intersection Summary

HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	122.2	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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	716	512	1	6	519	126	0	1	1	168	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	557	1	7	564	137	0	1	1	183	1	864
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	778	558	0	7	701	0	0	2	0	0	184	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			13.5	45.5
Effective Green, g (s)	32.0	54.5		0.8	23.3			5.7			13.5	45.5
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)	1214	2131		16	878			109			262	866
v/s Ratio Prot	0.23	0.16		0.00	c0.21			c0.00			0.10	c0.35
v/s Ratio Perm												0.19
v/c Ratio	0.64	0.26		0.44	0.80			0.02			0.70	1.00
Uniform Delay, d1	24.4	8.5		44.6	31.4			39.8			36.6	22.4
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	5.1			0.1			8.2	29.8
Delay (s)	25.6	8.6		62.6	36.5			39.8			44.8	52.2
Level of Service	C	A		E	D			D			D	D
Approach Delay (s)		18.5			36.8			39.8			50.9	
Approach LOS		B			D			D			D	

Intersection Summary

HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	739	602	18	306	653	359	36	715	282	204	707	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	20	333	710	390	39	777	307	222	768	522
RTOR Reduction (vph)	0	0	0	0	0	11	0	0	0	0	0	79
Lane Group Flow (vph)	803	654	20	333	710	379	39	777	307	222	768	443
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	0.05	0.83	0.83	0.64	0.81	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	39.2	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	61.7	4.9	0.8	2.4	1.2	0.0
Delay (s)	43.4	26.6	21.9	47.3	38.6	22.5	100.9	32.0	26.6	37.2	22.7	9.7
Level of Service	D	C	C	D	D	C	F	C	C	D	C	A
Approach Delay (s)		35.7			36.2			32.9			20.3	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	31.1	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+Project 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	1226	vph	1419	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	341		394	
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	694	pcphpl	804	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	694	pcphpl	804	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	11.6	pc/mi/ln	13.4	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 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	1209	vph	1067	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	336		296	
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	685	pcphpl	604	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	685	pcphpl	604	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	11.4	pc/mi/ln	10.1	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+Project 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	596	vph	715	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	166		199	
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	334	pcphpl	401	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	334	pcphpl	401	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+Project 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	497	vph	559	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	135		152	
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	278	pcphpl	312	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	278	pcphpl	312	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	4.9	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+Project 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	779	vph	608	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	212		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	429	pcphpl	335	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	429	pcphpl	335	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+Project 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	1571	vph	1399	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	436		389	
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	890	pcphpl	792	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	890	pcphpl	792	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	13.2	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: 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	1511	vph	1398	vph
Peak-hour factor, PHF	0.90		0.90	
Peak 15-minute volume, v15	420		388	
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	856	pcphpl	792	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	856	pcphpl	792	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	14.3	pc/mi/ln	13.2	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: 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	516	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	289	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	485	pcphpl	289	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+Project 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	1033	vph	1031	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	281		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	569	pcphpl	568	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	569	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	9.9	pc/mi/ln	9.9	pc/mi/ln

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