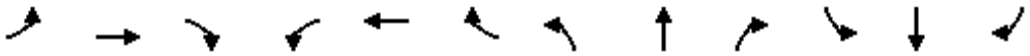
Appendix C:

Existing HCM Worksheets

AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	1211	0	0	1043	35	0	0	0	82	0	39
Future Volume (vph)	9	1211	0	0	1043	35	0	0	0	82	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5					6.5	6.5	
Lane Util. Factor	1.00	0.95			0.95					1.00	1.00	
Frt	1.00	1.00			1.00					1.00	0.85	
Flt Protected	0.95	1.00			1.00					0.95	1.00	
Satd. Flow (prot)	1711	3421			3405					1711	1531	
Flt Permitted	0.25	1.00			1.00					0.76	1.00	
Satd. Flow (perm)	454	3421			3405					1363	1531	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	1211	0	0	1043	35	0	0	0	82	0	39
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	35	0
Lane Group Flow (vph)	9	1211	0	0	1077	0	0	0	0	82	4	0
Turn Type	Perm	NA		Perm	NA		Perm			Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	95.8	95.8			95.8					11.2	11.2	
Effective Green, g (s)	95.8	95.8			95.8					11.2	11.2	
Actuated g/C Ratio	0.80	0.80			0.80					0.09	0.09	
Clearance Time (s)	6.5	6.5			6.5					6.5	6.5	
Vehicle Extension (s)	0.2	0.2			0.2					3.0	3.0	
Lane Grp Cap (vph)	362	2731			2718					127	142	
v/s Ratio Prot		c0.35			0.32						0.00	
v/s Ratio Perm	0.02									c0.06		
v/c Ratio	0.02	0.44			0.40					0.65	0.03	
Uniform Delay, d1	2.5	3.8			3.6					52.5	49.4	
Progression Factor	1.00	1.00			1.00					1.00	1.00	
Incremental Delay, d2	0.1	0.5			0.4					10.7	0.1	
Delay (s)	2.6	4.3			4.0					63.2	49.5	
Level of Service	A	A			A					E	D	
Approach Delay (s)		4.3			4.0			0.0			58.8	
Approach LOS		A			A			A			E	

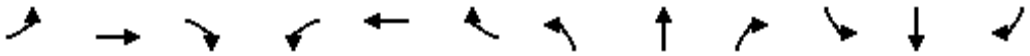
Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1852	300	123	1390	123	79
Future Volume (vph)	1852	300	123	1390	123	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	4.0	6.0	6.5
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)	3421	1531	1711	3421	1711	1531
Flt Permitted	1.00	1.00	0.06	1.00	0.95	1.00
Satd. Flow (perm)	3421	1531	112	3421	1711	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1852	300	123	1390	123	79
RTOR Reduction (vph)	0	56	0	0	0	9
Lane Group Flow (vph)	1852	244	123	1390	123	70
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases		6	2			4
Actuated Green, G (s)	103.7	103.7	123.9	123.9	16.1	27.3
Effective Green, g (s)	103.7	103.7	123.9	123.9	16.1	27.3
Actuated g/C Ratio	0.69	0.69	0.83	0.83	0.11	0.18
Clearance Time (s)	6.5	6.5	6.5	4.0	6.0	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2365	1058	211	2825	183	278
v/s Ratio Prot	c0.54		0.04	c0.41	c0.07	0.02
v/s Ratio Perm		0.16	0.44			0.03
v/c Ratio	0.78	0.23	0.58	0.49	0.67	0.25
Uniform Delay, d1	15.6	8.5	26.8	3.8	64.4	52.6
Progression Factor	0.86	0.79	1.58	0.97	1.00	1.00
Incremental Delay, d2	0.9	0.2	3.6	0.5	9.3	0.5
Delay (s)	14.2	6.8	45.9	4.2	73.7	53.1
Level of Service	B	A	D	A	E	D
Approach Delay (s)	13.2			7.6	65.7	
Approach LOS	B			A	E	

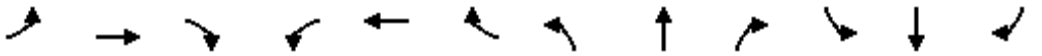
Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	143	7	167	384	596	119	831	29	69	1309	299
Future Volume (vph)	42	143	7	167	384	596	119	831	29	69	1309	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.5	6.0		6.0	6.0	4.0	6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1849		1770	1863	1583	1770	3521		1770	3441	
Flt Permitted	0.10	1.00		0.65	1.00	1.00	0.06	1.00		0.19	1.00	
Satd. Flow (perm)	180	1849		1218	1863	1583	102	3521		363	3441	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	155	8	182	417	648	129	903	32	75	1423	325
RTOR Reduction (vph)	0	1	0	0	0	0	0	2	0	0	13	0
Lane Group Flow (vph)	46	162	0	182	417	648	129	933	0	75	1735	0
Turn Type	pm+pt	NA		Perm	NA	Free	Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8		Free	2			6		
Actuated Green, G (s)	49.6	49.6		34.9	34.9	150.0	72.7	72.7		87.9	87.9	
Effective Green, g (s)	49.6	49.6		34.9	34.9	150.0	72.7	72.7		87.9	87.9	
Actuated g/C Ratio	0.33	0.33		0.23	0.23	1.00	0.48	0.48		0.59	0.59	
Clearance Time (s)	6.5	6.0		6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	5.0	4.0		4.0	4.0		0.2	0.2		4.0	0.2	
Lane Grp Cap (vph)	146	611		283	433	1583	49	1706		299	2016	
v/s Ratio Prot	0.02	0.09			c0.22			0.27		0.02	c0.50	
v/s Ratio Perm	0.09			0.15		c0.41	c1.26			0.13		
v/c Ratio	0.32	0.26		0.64	0.96	0.41	2.63	0.55		0.25	0.86	
Uniform Delay, d1	38.8	36.8		51.9	56.9	0.0	38.6	27.1		16.6	25.9	
Progression Factor	1.00	1.00		1.01	0.99	1.00	1.59	1.61		0.90	1.24	
Incremental Delay, d2	2.6	0.3		4.1	28.2	0.6	788.5	1.2		0.4	3.3	
Delay (s)	41.4	37.1		56.3	84.6	0.6	850.1	44.8		15.3	35.5	
Level of Service	D	D		E	F	A	F	D		B	D	
Approach Delay (s)		38.1			36.8			142.4			34.7	
Approach LOS		D			D			F			C	

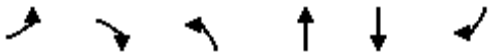
Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	12	84	39	19	34	167	890	8	21	1365	97
Future Volume (vph)	55	12	84	39	19	34	167	890	8	21	1365	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1801	1531	1711	1627		1711	3417		1711	3387	
Flt Permitted	0.72	1.00	1.00	0.75	1.00		0.12	1.00		0.32	1.00	
Satd. Flow (perm)	1301	1801	1531	1350	1627		224	3417		571	3387	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	12	84	39	19	34	167	890	8	21	1365	97
RTOR Reduction (vph)	0	0	77	0	31	0	0	0	0	0	2	0
Lane Group Flow (vph)	55	12	7	39	22	0	167	898	0	21	1460	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			4		5	2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)	11.7	11.7	11.7	11.7	11.7		125.3	125.3		103.8	103.8	
Effective Green, g (s)	11.7	11.7	11.7	11.7	11.7		125.3	125.3		103.8	103.8	
Actuated g/C Ratio	0.08	0.08	0.08	0.08	0.08		0.84	0.84		0.69	0.69	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		5.0	0.2		0.2	0.2	
Lane Grp Cap (vph)	101	140	119	105	126		340	2854		395	2343	
v/s Ratio Prot		0.01			0.01		c0.05	0.26			c0.43	
v/s Ratio Perm	c0.04		0.00	0.03			0.36			0.04		
v/c Ratio	0.54	0.09	0.06	0.37	0.17		0.49	0.31		0.05	0.62	
Uniform Delay, d1	66.6	64.2	64.0	65.7	64.6		10.2	2.8		7.4	12.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		5.65	0.77		0.67	0.38	
Incremental Delay, d2	5.9	0.3	0.2	2.2	0.7		2.2	0.3		0.1	0.7	
Delay (s)	72.5	64.5	64.2	67.9	65.3		59.8	2.4		5.1	5.4	
Level of Service	E	E	E	E	E		E	A		A	A	
Approach Delay (s)		67.2			66.4			11.4			5.4	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

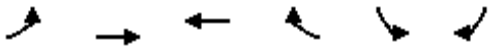
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	10	173	1044	1207	281
Future Volume (vph)	21	10	173	1044	1207	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3319	1531	1711	3421	3421	1531
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	3319	1531	359	3421	3421	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	10	173	1044	1207	281
RTOR Reduction (vph)	0	10	0	0	0	61
Lane Group Flow (vph)	21	0	173	1044	1207	220
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	4.3	4.3	133.7	133.7	117.5	117.5
Effective Green, g (s)	4.3	4.3	133.7	133.7	117.5	117.5
Actuated g/C Ratio	0.03	0.03	0.89	0.89	0.78	0.78
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	95	43	411	3049	2679	1199
v/s Ratio Prot	c0.01		0.03	c0.31	c0.35	
v/s Ratio Perm		0.00	0.35			0.14
v/c Ratio	0.22	0.01	0.42	0.34	0.45	0.18
Uniform Delay, d1	71.2	70.8	2.8	1.3	5.4	4.1
Progression Factor	1.00	1.00	2.13	0.75	0.94	2.14
Incremental Delay, d2	1.2	0.1	0.6	0.3	0.4	0.3
Delay (s)	72.4	70.8	6.5	1.2	5.6	9.1
Level of Service	E	E	A	A	A	A
Approach Delay (s)	71.9			2.0	6.2	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

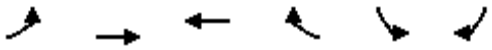
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↰	↱
Traffic Volume (veh/h)	0	514	257	0	219	520
Future Volume (Veh/h)	0	514	257	0	219	520
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	514	257	0	219	520
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		584	547			
pX, platoon unblocked	0.94				0.94	0.94
vC, conflicting volume	257				428	128
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				278	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				66	49
cM capacity (veh/h)	1412				651	1024

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	171	171	171	128	128	219	520
Volume Left	0	0	0	0	0	219	0
Volume Right	0	0	0	0	0	0	520
cSH	1700	1700	1700	1700	1700	651	1024
Volume to Capacity	0.10	0.10	0.10	0.08	0.08	0.34	0.51
Queue Length 95th (ft)	0	0	0	0	0	37	74
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	13.3	12.1
Lane LOS						B	B
Approach Delay (s)	0.0			0.0		12.4	
Approach LOS						B	

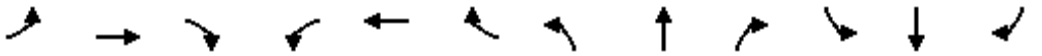
Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	356	984	29	113	134
Future Volume (vph)	39	356	984	29	113	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1711	1801	1794		1711	1531
Flt Permitted	0.18	1.00	1.00		0.95	1.00
Satd. Flow (perm)	315	1801	1794		1711	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	39	356	984	29	113	134
RTOR Reduction (vph)	0	0	1	0	0	116
Lane Group Flow (vph)	39	356	1012	0	113	18
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		6	2		4	
Permitted Phases	6		2		4	4
Actuated Green, G (s)	53.3	53.3	53.3		10.2	10.2
Effective Green, g (s)	53.3	53.3	53.3		10.2	10.2
Actuated g/C Ratio	0.71	0.71	0.71		0.14	0.14
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5
Vehicle Extension (s)	5.0	5.0	5.0		3.0	3.0
Lane Grp Cap (vph)	223	1279	1274		232	208
v/s Ratio Prot		0.20	c0.56		c0.07	
v/s Ratio Perm	0.12					0.01
v/c Ratio	0.17	0.28	0.79		0.49	0.09
Uniform Delay, d1	3.6	3.9	7.2		30.0	28.3
Progression Factor	0.70	0.68	1.00		1.00	1.00
Incremental Delay, d2	1.7	0.5	5.2		1.6	0.2
Delay (s)	4.2	3.2	12.4		31.6	28.5
Level of Service	A	A	B		C	C
Approach Delay (s)		3.3	12.4		29.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

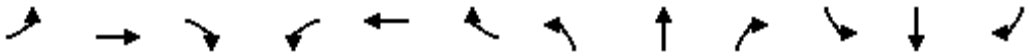
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	163	23	14	578	6	32	4	12	0	0	100
Future Volume (vph)	32	163	23	14	578	6	32	4	12	0	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0				6.0
Lane Util. Factor	1.00	1.00			0.95			1.00				1.00
Frt	1.00	0.98			1.00			0.97				0.86
Flt Protected	0.95	1.00			1.00			0.97				1.00
Satd. Flow (prot)	1711	1767			3412			1684				1558
Flt Permitted	0.43	1.00			0.95			0.97				1.00
Satd. Flow (perm)	766	1767			3238			1684				1558
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	32	163	23	14	578	6	32	4	12	0	0	100
RTOR Reduction (vph)	0	3	0	0	0	0	0	11	0	0	0	88
Lane Group Flow (vph)	32	183	0	0	598	0	0	37	0	0	0	12
Turn Type	pm+pt	NA		Perm	NA		Perm	NA				pm+ov
Protected Phases	1	2			2			4				1
Permitted Phases	2			2			4					4
Actuated Green, G (s)	66.8	61.2			61.2			5.2				10.8
Effective Green, g (s)	66.8	61.2			61.2			5.2				10.8
Actuated g/C Ratio	0.74	0.68			0.68			0.06				0.12
Clearance Time (s)	6.0	6.0			6.0			6.0				6.0
Vehicle Extension (s)	4.0	0.2			0.2			3.0				4.0
Lane Grp Cap (vph)	627	1201			2201			97				290
v/s Ratio Prot	0.00	0.10										c0.00
v/s Ratio Perm	0.03				c0.18			0.02				0.01
v/c Ratio	0.05	0.15			0.27			0.38				0.04
Uniform Delay, d1	3.0	5.1			5.7			40.8				35.0
Progression Factor	1.00	1.00			1.00			1.00				1.00
Incremental Delay, d2	0.0	0.3			0.3			2.5				0.1
Delay (s)	3.1	5.4			6.0			43.3				35.1
Level of Service	A	A			A			D				D
Approach Delay (s)		5.1			6.0			43.3			35.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	41.9%	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												
Traffic Volume (vph)	0	1595	0	0	0	0	0	0	0	84	0	0
Future Volume (vph)	0	1595	0	0	0	0	0	0	0	84	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0								6.5	6.5	
Lane Util. Factor		0.91								0.95	0.95	
Frt		1.00								1.00	1.00	
Flt Protected		1.00								0.95	0.95	
Satd. Flow (prot)		5085								1681	1681	
Flt Permitted		1.00								0.95	0.95	
Satd. Flow (perm)		5085								1681	1681	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1734	0	0	0	0	0	0	0	91	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	44	44	0
Lane Group Flow (vph)	0	1734	0	0	0	0	0	0	0	1	2	0
Turn Type		NA							Free	Perm	NA	
Protected Phases		2									4	
Permitted Phases									Free	4		
Actuated Green, G (s)		161.6								4.9	4.9	
Effective Green, g (s)		162.6								5.9	5.9	
Actuated g/C Ratio		0.90								0.03	0.03	
Clearance Time (s)		6.0								7.5	7.5	
Vehicle Extension (s)		0.2								3.0	3.0	
Lane Grp Cap (vph)		4593								55	55	
v/s Ratio Prot		c0.34										
v/s Ratio Perm										0.00	0.00	
v/c Ratio		0.38								0.03	0.03	
Uniform Delay, d1		1.3								84.3	84.3	
Progression Factor		1.00								1.47	1.40	
Incremental Delay, d2		0.2								0.0	0.1	
Delay (s)		1.5								123.8	118.2	
Level of Service		A								F	F	
Approach Delay (s)		1.5			0.0			0.0			121.0	
Approach LOS		A			A			A			F	

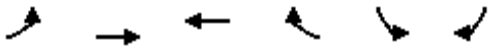
Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑↑	↰↰	
Traffic Volume (vph)	0	0	0	1481	232	0
Future Volume (vph)	0	0	0	1481	232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)				1.0	6.5	
Lane Util. Factor				0.86	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6408	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6408	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1610	252	0
RTOR Reduction (vph)	0	0	0	0	219	0
Lane Group Flow (vph)	0	0	0	1610	33	0
Turn Type				NA	Prot	
Protected Phases				Free!	1!	
Permitted Phases						
Actuated Green, G (s)				180.0	22.5	
Effective Green, g (s)				180.0	23.5	
Actuated g/C Ratio				1.00	0.13	
Clearance Time (s)					7.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				6408	448	
v/s Ratio Prot				0.25	0.01	
v/s Ratio Perm						
v/c Ratio				0.25	0.07	
Uniform Delay, d1				0.0	68.7	
Progression Factor				1.00	6.30	
Incremental Delay, d2				0.1	0.0	
Delay (s)				0.1	432.5	
Level of Service				A	F	
Approach Delay (s)	0.0			0.1	432.5	
Approach LOS	A			A	F	

Intersection Summary			
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

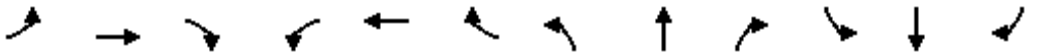
! Phase conflict between lane groups.

c Critical Lane Group



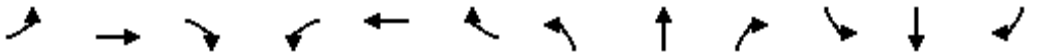
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	88	393	546	0	239	48
Future Volume (vph)	88	393	546	0	239	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	5.0	7.0	7.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863		1770	1583
Flt Permitted	0.33	1.00	1.00		0.95	1.00
Satd. Flow (perm)	608	1863	1863		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	427	593	0	260	52
RTOR Reduction (vph)	0	0	0	0	0	42
Lane Group Flow (vph)	96	427	593	0	260	10
Turn Type	pm+pt	NA	NA		Prot	Prot
Protected Phases	1	6	2		4	4
Permitted Phases	6					
Actuated Green, G (s)	105.1	105.1	92.2		29.5	29.5
Effective Green, g (s)	105.1	105.1	92.2		29.5	29.5
Actuated g/C Ratio	0.71	0.71	0.62		0.20	0.20
Clearance Time (s)	5.0	7.0	7.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		7.0	7.0
Lane Grp Cap (vph)	495	1326	1163		353	316
v/s Ratio Prot	0.01	c0.23	c0.32		c0.15	0.01
v/s Ratio Perm	0.13					
v/c Ratio	0.19	0.32	0.51		0.74	0.03
Uniform Delay, d1	8.9	7.9	15.3		55.4	47.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.6	1.6		11.7	0.2
Delay (s)	9.1	8.6	16.9		67.1	47.7
Level of Service	A	A	B		E	D
Approach Delay (s)		8.7	16.9		63.9	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	147.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



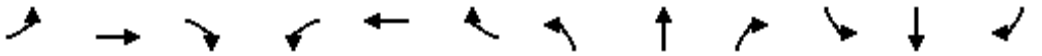
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	384	1	297	656	351	52	572	36	177	658	252
Future Volume (vph)	234	384	1	297	656	351	52	572	36	177	658	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3538		1770	3539	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3538		1770	3539	1583	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	254	417	1	323	713	382	57	622	39	192	715	274
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	203
Lane Group Flow (vph)	254	418	0	323	713	382	57	622	39	192	715	71
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						Free			4			8
Actuated Green, G (s)	15.9	47.6		31.9	63.6	150.0	8.5	34.3	34.3	13.2	39.0	39.0
Effective Green, g (s)	16.9	50.6		32.9	66.6	150.0	9.5	36.3	36.3	14.2	41.0	39.0
Actuated g/C Ratio	0.11	0.34		0.22	0.44	1.00	0.06	0.24	0.24	0.09	0.27	0.26
Clearance Time (s)	5.0	7.0		5.0	7.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	3.0	3.0	2.5	3.0	3.0
Lane Grp Cap (vph)	386	1193		388	1571	1583	112	856	383	324	967	411
v/s Ratio Prot	0.07	0.12		c0.18	c0.20		0.03	0.18		c0.06	c0.20	
v/s Ratio Perm						0.24			0.02			0.04
v/c Ratio	0.66	0.35		0.83	0.45	0.24	0.51	0.73	0.10	0.59	0.74	0.17
Uniform Delay, d1	63.8	37.3		55.9	29.0	0.0	68.0	52.3	44.2	65.1	49.6	43.0
Progression Factor	1.00	1.00		0.84	0.63	1.00	1.00	1.00	1.00	1.09	1.21	2.45
Incremental Delay, d2	3.6	0.8		12.9	0.9	0.3	2.6	3.1	0.1	2.2	2.7	0.2
Delay (s)	67.4	38.2		60.2	19.0	0.3	70.6	55.4	44.3	73.3	62.6	105.5
Level of Service	E	D		E	B	A	E	E	D	E	E	F
Approach Delay (s)		49.2			23.4			56.0			74.3	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	621	37	57	1213	888	10	16	44	639	3	221
Future Volume (vph)	180	621	37	57	1213	888	10	16	44	639	3	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	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	0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3221	1615	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3221	1615	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)	196	675	40	62	1318	965	11	17	48	695	3	240
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	45	0	0	0
Lane Group Flow (vph)	196	675	24	62	1318	965	11	17	3	466	232	240
Turn Type	Prot	NA	Perm	Prot	NA	Free	Split	NA	Perm	Split	NA	Free
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			Free
Actuated Green, G (s)	18.5	87.0	87.0	9.3	77.8	150.0	5.9	5.9	5.9	24.8	24.8	150.0
Effective Green, g (s)	19.5	89.0	89.0	10.3	79.8	150.0	7.9	7.9	7.9	26.8	26.8	150.0
Actuated g/C Ratio	0.13	0.59	0.59	0.07	0.53	1.00	0.05	0.05	0.05	0.18	0.18	1.00
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	230	2099	939	121	1882	1583	93	98	83	575	288	1583
v/s Ratio Prot	c0.11	0.19		0.04	c0.37		0.01	0.01		c0.14	0.14	
v/s Ratio Perm			0.01			c0.61			0.00			0.15
v/c Ratio	0.85	0.32	0.03	0.51	0.70	0.61	0.12	0.17	0.03	0.81	0.81	0.15
Uniform Delay, d1	63.8	15.3	12.6	67.4	26.2	0.0	67.7	67.9	67.4	59.2	59.1	0.0
Progression Factor	1.12	0.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.6	0.4	0.0	3.6	2.2	1.8	0.6	0.8	0.1	8.5	15.0	0.2
Delay (s)	95.4	7.4	12.6	71.1	28.4	1.8	68.3	68.8	67.6	67.6	74.1	0.2
Level of Service	F	A	B	E	C	A	E	E	E	E	E	A
Approach Delay (s)		26.6			18.6			67.9			52.0	
Approach LOS		C			B			E			D	

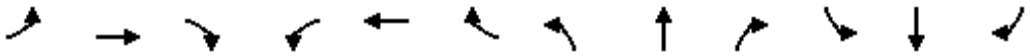
Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	46	58	129	86	623	0	1380	13	590	2562	140
Future Volume (vph)	58	46	58	129	86	623	0	1380	13	590	2562	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		2.5		4.0	2.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	0.88		0.91		0.97	0.91	
Frt	1.00	0.92		1.00	1.00	0.85		1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1711	1649		1711	1801	2694		5167		3319	4878	
Flt Permitted	0.63	1.00		0.59	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1140	1649		1059	1801	2694		5167		3319	4878	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	61	48	61	136	91	656	0	1453	14	621	2697	147
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	61	109	0	136	91	656	0	1466	0	621	2841	0
Turn Type	Perm	NA		Perm	NA	pm+ov		NA		Prot	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)	24.2	24.2		24.2	24.2	67.4		63.1		43.2	112.3	
Effective Green, g (s)	27.2	27.2		27.2	27.2	71.4		67.1		45.2	116.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.48		0.45		0.30	0.78	
Clearance Time (s)	7.0	7.0		7.0	7.0	6.0		6.5		6.0	6.5	
Vehicle Extension (s)	5.0	5.0		5.0	5.0	5.0		0.2		5.0	0.2	
Lane Grp Cap (vph)	206	299		192	326	1282		2311		1000	3782	
v/s Ratio Prot		0.07			0.05	0.15		0.28		0.19	c0.58	
v/s Ratio Perm	0.05			c0.13		0.09						
v/c Ratio	0.30	0.36		0.71	0.28	0.51		0.63		0.62	0.75	
Uniform Delay, d1	53.1	53.8		57.7	52.9	27.2		32.0		45.0	9.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.09	0.19	
Incremental Delay, d2	1.7	1.6		14.0	1.0	0.7		1.3		0.9	0.7	
Delay (s)	54.8	55.4		71.7	53.9	27.9		33.3		49.8	2.4	
Level of Service	D	E		E	D	C		C		D	A	
Approach Delay (s)		55.2			37.3			33.3			10.9	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.5
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												
Traffic Volume (vph)	133	5	57	86	1	182	14	2026	21	46	3149	55
Future Volume (vph)	133	5	57	86	1	182	14	2026	21	46	3149	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.5	4.5	2.5		4.5	2.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	*0.90		1.00	0.91	
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1552			1716	1531	1711	4854		1711	4903	
Flt Permitted	0.63	1.00			0.67	1.00	0.04	1.00		0.05	1.00	
Satd. Flow (perm)	1143	1552			1206	1531	72	4854		95	4903	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	136	5	58	88	1	186	14	2067	21	47	3213	56
RTOR Reduction (vph)	0	48	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	136	15	0	0	89	186	14	2087	0	47	3268	0
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	23.3	23.3			23.3	32.1	100.2	96.9		111.2	102.4	
Effective Green, g (s)	26.3	26.3			26.3	38.1	106.2	100.9		116.2	106.4	
Actuated g/C Ratio	0.18	0.18			0.18	0.25	0.71	0.67		0.77	0.71	
Clearance Time (s)	7.0	7.0			7.0	7.5	7.5	6.5		7.5	6.5	
Vehicle Extension (s)	5.0	5.0			5.0	5.0	5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)	200	272			211	388	119	3265		200	3477	
v/s Ratio Prot		0.01				c0.04	0.00	0.43		0.02	c0.67	
v/s Ratio Perm	c0.12				0.07	0.08	0.08			0.16		
v/c Ratio	0.68	0.06			0.42	0.48	0.12	0.64		0.23	0.94	
Uniform Delay, d1	57.9	51.5			55.1	47.5	28.0	14.1		11.3	19.0	
Progression Factor	1.00	1.00			1.00	1.00	1.89	1.88		1.00	1.00	
Incremental Delay, d2	11.6	0.2			2.8	1.9	0.8	0.8		1.3	6.5	
Delay (s)	69.5	51.7			57.9	49.5	53.7	27.3		12.5	25.5	
Level of Service	E	D			E	D	D	C		B	C	
Approach Delay (s)		63.9			52.2			27.5			25.4	
Approach LOS		E			D			C			C	

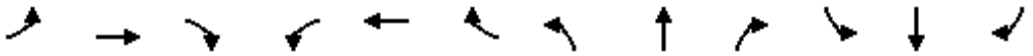
Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	94	21	2071	162	49	2287
Future Volume (vph)	94	21	2071	162	49	2287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		2.5	2.0	2.5	2.5
Lane Util. Factor	0.97		0.91	1.00	1.00	0.91
Frt	0.97		1.00	0.85	1.00	1.00
Flt Protected	0.96		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3265		4916	1531	1711	4916
Flt Permitted	0.96		1.00	1.00	0.07	1.00
Satd. Flow (perm)	3265		4916	1531	124	4916
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	100	22	2203	172	52	2433
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	109	0	2203	172	52	2433
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	3		2 4 9	3		6 4 9
Permitted Phases	3			2 4 9	6 4 9	
Actuated Green, G (s)	12.3		155.2	167.5	155.2	155.2
Effective Green, g (s)	15.3		159.2	170.5	159.2	159.2
Actuated g/C Ratio	0.09		0.88	0.95	0.88	0.88
Clearance Time (s)	6.0			6.0		
Vehicle Extension (s)	4.0			4.0		
Lane Grp Cap (vph)	277		4347	1467	109	4347
v/s Ratio Prot	c0.03		0.45	0.01		c0.49
v/s Ratio Perm				0.10	0.42	
v/c Ratio	0.39		0.51	0.12	0.48	0.56
Uniform Delay, d1	78.0		2.2	0.3	2.1	2.4
Progression Factor	1.00		0.91	1.00	1.49	1.16
Incremental Delay, d2	1.3		0.1	0.0	2.8	0.1
Delay (s)	79.2		2.1	0.3	5.9	2.9
Level of Service	E		A	A	A	A
Approach Delay (s)	79.2		2.0			2.9
Approach LOS	E		A			A

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

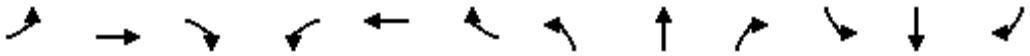
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	8	48	733	17	110	48	1860	147	95	2079	8
Future Volume (vph)	16	8	48	733	17	110	48	1860	147	95	2079	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1800	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	5.0	3.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1801	1531	3113	1566	1531	1711	4606		1711	4913	
Flt Permitted	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	1801	1531	3113	1566	1531	1711	4606		1711	4913	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	16	8	49	756	18	113	49	1918	152	98	2143	8
RTOR Reduction (vph)	0	0	0	0	0	87	0	5	0	0	0	0
Lane Group Flow (vph)	16	8	49	514	260	26	49	2065	0	98	2151	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	5		6	2	
Permitted Phases			3			4						
Actuated Green, G (s)	9.8	9.8	9.8	39.5	39.5	39.5	9.3	89.9		13.3	94.9	
Effective Green, g (s)	11.8	11.8	11.8	41.5	41.5	41.5	12.3	92.9		15.3	96.9	
Actuated g/C Ratio	0.07	0.07	0.07	0.23	0.23	0.23	0.07	0.52		0.09	0.54	
Clearance Time (s)	6.5	6.5	6.5	7.0	7.0	7.0	6.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	112	118	100	717	361	352	116	2377		145	2644	
v/s Ratio Prot	0.01	0.00		0.17	c0.17		0.03	c0.45		0.06	c0.44	
v/s Ratio Perm			c0.03			0.02						
v/c Ratio	0.14	0.07	0.49	0.72	0.72	0.07	0.42	0.87		0.68	0.81	
Uniform Delay, d1	79.3	78.9	81.2	63.8	63.9	54.2	80.4	38.2		79.9	34.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.16	1.02		0.95	0.89	
Incremental Delay, d2	0.6	0.2	3.7	3.4	6.9	0.1	2.2	4.2		10.2	2.5	
Delay (s)	79.9	79.2	84.9	67.3	70.8	54.3	95.4	43.2		86.4	33.0	
Level of Service	E	E	F	E	E	D	F	D		F	C	
Approach Delay (s)		83.2			66.7			44.4			35.3	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

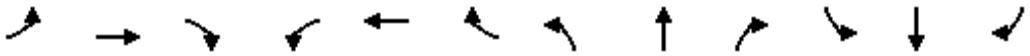
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	0	62	1	0	0	34	1950	2	1	2119	3
Future Volume (vph)	36	0	62	1	0	0	34	1950	2	1	2119	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0		3.0	3.0		6.0	3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.91			1.00		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1617			1711		1711	5174		1711	4915	
Flt Permitted		0.88			0.56		0.06	1.00		0.08	1.00	
Satd. Flow (perm)		1446			1006		115	5174		143	4915	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	0	65	1	0	0	36	2053	2	1	2231	3
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	1	0	36	2055	0	1	2234	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		16.9			16.9		150.1	150.1		150.1	150.1	
Effective Green, g (s)		16.9			16.9		153.1	153.1		150.1	153.1	
Actuated g/C Ratio		0.09			0.09		0.85	0.85		0.83	0.85	
Clearance Time (s)		7.0			7.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)		135			94		97	4400		119	4180	
v/s Ratio Prot								0.40			c0.45	
v/s Ratio Perm		c0.06			0.00		0.31			0.01		
v/c Ratio		0.64			0.01		0.37	0.47		0.01	0.53	
Uniform Delay, d1		78.6			74.0		2.9	3.3		2.5	3.7	
Progression Factor		1.00			1.00		1.67	0.82		1.00	1.00	
Incremental Delay, d2		11.1			0.1		6.3	0.2		0.1	0.5	
Delay (s)		89.7			74.0		11.2	3.0		2.6	4.2	
Level of Service		F			E		B	A		A	A	
Approach Delay (s)		89.7			74.0			3.1			4.2	
Approach LOS		F			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	17	11	45	3	43	4	1355	627	276	2133	22
Future Volume (vph)	48	17	11	45	3	43	4	1355	627	276	2133	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0		4.0	8.0	4.0	9.0	2.5	4.5	6.0	2.5	
Lane Util. Factor		1.00		0.91	0.91	1.00	1.00	0.86	1.00	0.97	0.91	
Frt		0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1713		3113	1575	1531	1711	6194	1531	3319	4908	
Flt Permitted		0.97		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1713		3113	1575	1531	1711	6194	1531	3319	4908	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	49	18	11	46	3	44	4	1397	646	285	2199	23
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	201	0	0	0
Lane Group Flow (vph)	0	78	0	33	16	2	4	1397	445	285	2222	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)		14.4		6.6	6.6	6.6	1.4	124.8	124.8	22.7	146.1	
Effective Green, g (s)		14.4		10.6	6.6	10.6	1.4	128.8	126.8	25.7	150.1	
Actuated g/C Ratio		0.07		0.05	0.03	0.05	0.01	0.64	0.63	0.13	0.75	
Clearance Time (s)		8.0		8.0	8.0	8.0	9.0	6.5	6.5	9.0	6.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	0.2	0.2	3.0	0.2	
Lane Grp Cap (vph)		123		164	51	81	11	3988	970	426	3683	
v/s Ratio Prot		c0.05		c0.01	0.01		0.00	0.23		c0.09	c0.45	
v/s Ratio Perm						0.00			0.29			
v/c Ratio		0.63		0.20	0.31	0.03	0.36	0.35	0.46	0.67	0.60	
Uniform Delay, d1		90.2		90.6	94.5	89.8	98.9	16.4	18.9	83.1	11.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.17	
Incremental Delay, d2		10.2		0.6	3.5	0.1	19.3	0.2	1.6	3.2	0.6	
Delay (s)		100.5		91.3	98.0	90.0	118.1	16.6	20.4	78.3	2.5	
Level of Service		F		F	F	F	F	B	C	E	A	
Approach Delay (s)		100.5			91.8			18.0			11.1	
Approach LOS		F			F			B			B	

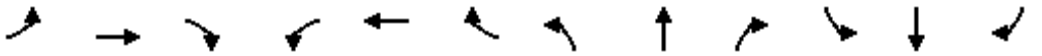
Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	22	20	8	0	12	19	1302	125	418	2398	11
Future Volume (vph)	7	22	20	8	0	12	19	1302	125	418	2398	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0		8.0	8.0		9.0	7.0		9.0	7.0	
Lane Util. Factor		1.00		0.97	1.00		1.00	0.86		0.97	0.91	
Frt		0.94		1.00	0.85		1.00	0.99		1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689		3319	1531		1711	6113		3319	4912	
Flt Permitted		0.95		0.78	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1611		2708	1531		1711	6113		3319	4912	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	7	22	20	8	0	12	19	1329	128	427	2447	11
RTOR Reduction (vph)	0	14	0	0	11	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	35	0	8	1	0	19	1452	0	427	2458	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		11.6		11.6	11.6		6.6	131.4		33.0	157.8	
Effective Green, g (s)		11.6		11.6	11.6		6.6	131.4		33.0	157.8	
Actuated g/C Ratio		0.06		0.06	0.06		0.03	0.66		0.16	0.79	
Clearance Time (s)		8.0		8.0	8.0		9.0	7.0		9.0	7.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		93		157	88		56	4016		547	3875	
v/s Ratio Prot					0.00		0.01	0.24		c0.13	c0.50	
v/s Ratio Perm		c0.02		0.00								
v/c Ratio		0.37		0.05	0.01		0.34	0.36		0.78	0.63	
Uniform Delay, d1		90.7		89.0	88.8		94.6	15.4		80.0	8.9	
Progression Factor		1.00		1.00	1.00		0.83	0.84		0.88	0.66	
Incremental Delay, d2		5.2		0.3	0.1		7.1	0.2		3.8	0.4	
Delay (s)		96.0		89.3	88.9		85.3	13.2		74.4	6.2	
Level of Service		F		F	F		F	B		E	A	
Approach Delay (s)		96.0			89.0			14.2			16.3	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

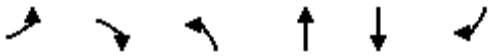
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	83	212	393	209	108	143	1081	116	19	2155	195
Future Volume (vph)	102	83	212	393	209	108	143	1081	116	19	2155	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	6.0	3.5	3.5	6.0	3.5	5.5
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.86	1.00	1.00	0.91	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	0.98	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1557	3223	1531	3113	1626	1531	1711	6194	1531	1711	4916	1531
Flt Permitted	0.95	0.98	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1557	3223	1531	3113	1626	1531	1711	6194	1531	1711	4916	1531
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	106	86	221	409	218	112	149	1126	121	20	2245	203
RTOR Reduction (vph)	0	0	114	0	0	90	0	0	29	0	0	60
Lane Group Flow (vph)	63	129	107	368	259	23	149	1126	92	20	2245	143
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	3		4	4		1	6	4	5	2	3
Permitted Phases			3			4			6			2
Actuated Green, G (s)	19.4	19.4	19.4	37.1	37.1	37.1	23.2	106.6	143.7	5.4	88.8	108.2
Effective Green, g (s)	23.4	23.4	23.4	41.1	41.1	41.1	26.2	110.6	151.7	8.4	92.8	112.2
Actuated g/C Ratio	0.12	0.12	0.12	0.21	0.21	0.21	0.13	0.55	0.76	0.04	0.46	0.56
Clearance Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	9.0	7.5	7.5	9.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2	3.0	3.0	0.2	3.0
Lane Grp Cap (vph)	182	377	179	639	334	314	224	3425	1161	71	2281	900
v/s Ratio Prot	0.04	0.04		0.12	c0.16		c0.09	0.18	0.02	0.01	c0.46	0.02
v/s Ratio Perm			c0.07			0.02			0.04			0.08
v/c Ratio	0.35	0.34	0.60	0.58	0.78	0.07	0.67	0.33	0.08	0.28	0.98	0.16
Uniform Delay, d1	81.3	81.2	83.8	71.6	75.1	64.1	82.7	24.4	6.2	92.9	52.9	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.41	0.67	2.31	1.10	0.95	0.60
Incremental Delay, d2	1.1	0.5	5.3	1.3	10.7	0.1	6.9	0.2	0.0	1.9	14.5	0.1
Delay (s)	82.4	81.8	89.1	72.9	85.8	64.2	123.6	16.7	14.3	104.4	64.5	12.8
Level of Service	F	F	F	E	F	E	F	B	B	F	E	B
Approach Delay (s)		85.8			76.1			27.9			60.6	
Approach LOS		F			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	55.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



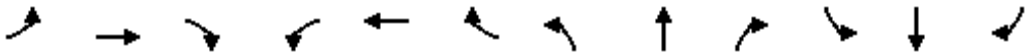
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	56	1075	2064	0
Future Volume (vph)	0	0	56	1075	2064	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11
Total Lost time (s)			5.5	4.0	8.0	
Lane Util. Factor			0.97	0.91	0.95	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	1.00	
Satd. Flow (prot)			3433	5085	3421	
Flt Permitted			0.95	1.00	1.00	
Satd. Flow (perm)			3433	5085	3421	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	58	1120	2150	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	58	1120	2150	0
Turn Type			Prot	NA	NA	
Protected Phases			1	Free	2	
Permitted Phases					2	
Actuated Green, G (s)			10.7	200.0	175.8	
Effective Green, g (s)			10.7	200.0	175.8	
Actuated g/C Ratio			0.05	1.00	0.88	
Clearance Time (s)			5.5		8.0	
Vehicle Extension (s)			5.0		0.2	
Lane Grp Cap (vph)			183	5085	3007	
v/s Ratio Prot			0.02	0.22	c0.63	
v/s Ratio Perm						
v/c Ratio			0.32	0.22	0.71	
Uniform Delay, d1			91.1	0.0	3.9	
Progression Factor			0.73	1.00	1.00	
Incremental Delay, d2			2.0	0.1	1.5	
Delay (s)			68.7	0.1	5.4	
Level of Service			E	A	A	
Approach Delay (s)	0.0			3.5	5.4	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	0	28	17	0	25	8	1243	15	21	2487	12
Future Volume (vph)	18	0	28	17	0	25	8	1243	15	21	2487	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	11	11	11
Total Lost time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		0.92			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1620			1711	1531	1770	5076		1711	4912	
Flt Permitted		0.87			0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1429			1647	1531	1770	5076		1711	4912	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	19	0	30	18	0	27	9	1337	16	23	2674	13
RTOR Reduction (vph)	0	46	0	0	0	25	0	0	0	0	0	0
Lane Group Flow (vph)	0	3	0	0	18	2	9	1353	0	23	2687	0
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)		7.8			7.8	7.8	1.9	87.7		6.0	91.8	
Effective Green, g (s)		7.8			7.8	7.8	1.9	87.7		6.0	91.8	
Actuated g/C Ratio		0.06			0.06	0.06	0.02	0.73		0.05	0.76	
Clearance Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0			5.0	5.0	5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		92			107	99	28	3709		85	3757	
v/s Ratio Prot							0.01	0.27		c0.01	c0.55	
v/s Ratio Perm		0.00			c0.01	0.00						
v/c Ratio		0.03			0.17	0.02	0.32	0.36		0.27	0.72	
Uniform Delay, d1		52.6			53.0	52.5	58.4	5.9		54.9	7.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.93	0.84	
Incremental Delay, d2		0.3			1.6	0.2	13.4	0.3		3.2	1.1	
Delay (s)		52.9			54.6	52.7	71.8	6.2		54.5	7.2	
Level of Service		D			D	D	E	A		D	A	
Approach Delay (s)		52.9			53.4			6.6			7.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	55	1167	93	160	2276
Future Volume (vph)	68	55	1167	93	160	2276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1711	1531	4861		1711	4916
Flt Permitted	0.95	1.00	1.00		0.18	1.00
Satd. Flow (perm)	1711	1531	4861		320	4916
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	68	55	1167	93	160	2276
RTOR Reduction (vph)	0	51	4	0	0	0
Lane Group Flow (vph)	68	4	1256	0	160	2276
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			6		5	2
Permitted Phases	4	4			2	
Actuated Green, G (s)	9.7	9.7	81.7		96.8	96.8
Effective Green, g (s)	9.7	9.7	81.7		96.8	96.8
Actuated g/C Ratio	0.08	0.08	0.68		0.81	0.81
Clearance Time (s)	7.5	7.5	6.0		6.0	6.0
Vehicle Extension (s)	4.0	4.0	0.2		4.0	0.2
Lane Grp Cap (vph)	138	123	3309		363	3965
v/s Ratio Prot			0.26		0.03	c0.46
v/s Ratio Perm	c0.04	0.00			0.32	
v/c Ratio	0.49	0.04	0.38		0.44	0.57
Uniform Delay, d1	52.8	50.8	8.2		3.7	4.2
Progression Factor	1.00	1.00	0.99		1.00	1.00
Incremental Delay, d2	3.7	0.2	0.3		1.2	0.6
Delay (s)	56.5	51.0	8.4		4.9	4.8
Level of Service	E	D	A		A	A
Approach Delay (s)	54.1		8.4			4.8
Approach LOS	D		A			A

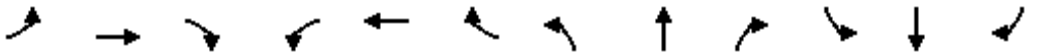
Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	1833	0	0	2400	0	0	0	666	0	0	647
Future Volume (vph)	0	1833	0	0	2400	0	0	0	666	0	0	647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.5			2.0				2.0			3.5
Lane Util. Factor		0.86			0.91				1.00			0.88
Frt		1.00			1.00				0.86			0.85
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		6194			4916				1558			2694
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		6194			4916				1558			2694
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1890	0	0	2474	0	0	0	687	0	0	667
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1890	0	0	2474	0	0	0	687	0	0	667
Turn Type		NA			NA				Free			Prot
Protected Phases		2			Free							8
Permitted Phases		2							Free			8
Actuated Green, G (s)		92.5			180.0				180.0			64.5
Effective Green, g (s)		96.5			180.0				180.0			67.5
Actuated g/C Ratio		0.54			1.00				1.00			0.38
Clearance Time (s)		6.5										6.5
Vehicle Extension (s)		0.2										4.0
Lane Grp Cap (vph)		3320			4916				1558			1010
v/s Ratio Prot		c0.31			0.50							c0.25
v/s Ratio Perm									0.44			
v/c Ratio		0.57			0.50				0.44			0.66
Uniform Delay, d1		27.9			0.0				0.0			46.7
Progression Factor		1.00			1.00				1.00			1.00
Incremental Delay, d2		0.7			0.3				0.9			1.8
Delay (s)		28.6			0.3				0.9			48.5
Level of Service		C			A				A			D
Approach Delay (s)		28.6			0.3			0.9			48.5	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

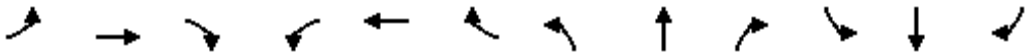
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	345	40	32	666	79	17	98	29	140	560	323
Future Volume (vph)	121	345	40	32	666	79	17	98	29	140	560	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.5	6.5		6.5	6.5	7.0	6.5	6.5		7.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3485		1770	1863	1583	1770	1798		1770	1863	1583
Flt Permitted	0.09	1.00		0.51	1.00	1.00	0.29	1.00		0.53	1.00	1.00
Satd. Flow (perm)	162	3485		945	1863	1583	544	1798		993	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)	132	375	43	35	724	86	18	107	32	152	609	351
RTOR Reduction (vph)	0	7	0	0	0	46	0	9	0	0	0	188
Lane Group Flow (vph)	132	411	0	35	724	40	18	130	0	152	609	163
Turn Type	pm+pt	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	Perm
Protected Phases	3	8			4	1		2		1	6	
Permitted Phases	8			4		4	2			6		6
Actuated Green, G (s)	56.5	56.5		40.5	40.5	52.1	31.9	31.9		50.5	50.5	50.5
Effective Green, g (s)	56.5	56.5		40.5	40.5	52.1	31.9	31.9		50.5	50.5	50.5
Actuated g/C Ratio	0.47	0.47		0.34	0.34	0.43	0.27	0.27		0.42	0.42	0.42
Clearance Time (s)	5.5	6.5		6.5	6.5	7.0	6.5	6.5		7.0	6.5	6.5
Vehicle Extension (s)	3.0	5.0		5.0	5.0	3.0	0.2	0.2		3.0	0.2	0.2
Lane Grp Cap (vph)	216	1640		318	628	687	144	477		492	784	666
v/s Ratio Prot	c0.05	0.12			c0.39	0.01		0.07		0.03	c0.33	
v/s Ratio Perm	0.23			0.04		0.02	0.03			0.10		0.10
v/c Ratio	0.61	0.25		0.11	1.15	0.06	0.12	0.27		0.31	0.78	0.24
Uniform Delay, d1	26.1	19.0		27.4	39.8	19.7	33.5	34.9		22.3	29.9	22.4
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	5.0	0.2		0.3	86.1	0.0	1.8	1.4		0.4	7.4	0.9
Delay (s)	31.1	19.2		27.7	125.8	19.7	35.2	36.3		22.7	37.3	23.3
Level of Service	C	B		C	F	B	D	D		C	D	C
Approach Delay (s)		22.1			111.0			36.2			30.9	
Approach LOS		C			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

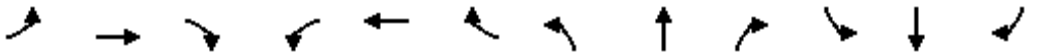
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	27	25	17	165	14	162	2	76	37	199	315	4
Future Volume (vph)	27	25	17	165	14	162	2	76	37	199	315	4
Peak Hour 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
Hourly flow rate (vph)	27	25	17	165	14	162	2	76	37	199	315	4

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	69	165	176	115	199	319
Volume Left (vph)	27	165	0	2	199	0
Volume Right (vph)	17	0	162	37	0	4
Hadj (s)	-0.04	0.53	-0.61	-0.16	0.53	0.03
Departure Headway (s)	6.7	6.9	5.8	6.3	6.5	5.9
Degree Utilization, x	0.13	0.32	0.28	0.20	0.36	0.53
Capacity (veh/h)	489	494	590	536	538	589
Control Delay (s)	10.7	11.9	9.8	10.9	11.8	14.1
Approach Delay (s)	10.7	10.8		10.9	13.2	
Approach LOS	B	B		B	B	

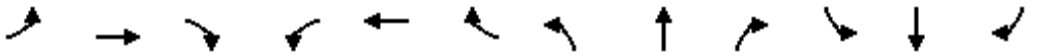
Intersection Summary				
Delay	12.0			
Level of Service	B			
Intersection Capacity Utilization	42.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	382	31	7	255	26	0	0	260	14	3	8
Future Volume (Veh/h)	1	382	31	7	255	26	0	0	260	14	3	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	1	382	31	7	255	26	0	0	260	14	3	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		175										
pX, platoon unblocked												
vC, conflicting volume	255			413			508	668	206	735	697	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	255			413			508	668	206	735	697	98
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	67	93	99	99
cM capacity (veh/h)	1307			1142			439	375	800	206	361	939

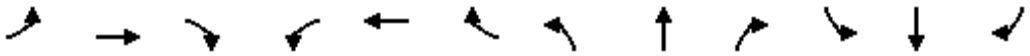
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2
Volume Total	192	222	7	102	102	77	260	17	8
Volume Left	1	0	7	0	0	0	0	14	0
Volume Right	0	31	0	0	0	26	260	0	8
cSH	1307	1700	1142	1700	1700	1700	800	223	939
Volume to Capacity	0.00	0.13	0.01	0.06	0.06	0.05	0.33	0.08	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	35	6	1
Control Delay (s)	0.0	0.0	8.2	0.0	0.0	0.0	11.7	22.4	8.9
Lane LOS	A		A				B	C	A
Approach Delay (s)	0.0		0.2				11.7	18.1	
Approach LOS							B	C	

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	935	277	52	873	157	111	80	27	273	284	94
Future Volume (vph)	81	935	277	52	873	157	111	80	27	273	284	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	1863	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.55	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1026	1863	1583	903	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	1016	301	57	949	171	121	87	29	297	309	102
RTOR Reduction (vph)	0	0	129	0	0	85	0	0	26	0	0	79
Lane Group Flow (vph)	88	1016	172	57	949	86	121	87	3	297	309	23
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	1	6		5	2		3	8		7	4	1
Permitted Phases			6			2	8		8	4		4
Actuated Green, G (s)	13.7	81.3	81.3	7.5	75.1	75.1	29.2	14.7	14.7	41.2	20.7	34.4
Effective Green, g (s)	13.7	81.3	81.3	7.5	75.1	75.1	29.2	14.7	14.7	41.2	20.7	34.4
Actuated g/C Ratio	0.09	0.54	0.54	0.05	0.50	0.50	0.19	0.10	0.10	0.27	0.14	0.23
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	4.0	0.2	0.2	4.0	0.2	0.2	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	161	1918	857	171	1771	792	271	182	155	366	488	431
v/s Ratio Prot	c0.05	c0.29		0.02	0.27		0.04	0.05		c0.11	0.09	0.00
v/s Ratio Perm			0.11			0.05	0.04		0.00	c0.11		0.01
v/c Ratio	0.55	0.53	0.20	0.33	0.54	0.11	0.45	0.48	0.02	0.81	0.63	0.05
Uniform Delay, d1	65.2	22.1	17.7	68.8	25.6	19.8	52.2	64.0	61.1	48.0	61.1	45.1
Progression Factor	1.00	1.00	1.00	1.29	0.18	0.01	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	1.1	0.5	1.2	0.9	0.2	1.6	2.7	0.1	13.4	3.0	0.1
Delay (s)	69.9	23.1	18.2	89.8	5.4	0.3	53.8	66.7	61.2	61.4	64.1	45.2
Level of Service	E	C	B	F	A	A	D	E	E	E	E	D
Approach Delay (s)		25.0			8.8			59.4			60.2	
Approach LOS		C			A			E			E	

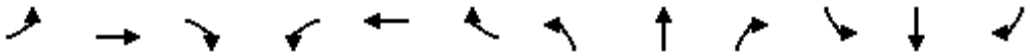
Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	76	330	113	16	453	151	168	53	19	50	13	24
Future Volume (vph)	76	330	113	16	453	151	168	53	19	50	13	24
Peak Hour 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
Hourly flow rate (vph)	76	330	113	16	453	151	168	53	19	50	13	24

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	241	278	243	378	240	87
Volume Left (vph)	76	0	16	0	168	50
Volume Right (vph)	0	113	0	151	19	24
Hadj (s)	0.19	-0.25	0.07	-0.25	0.13	-0.02
Departure Headway (s)	6.9	6.4	6.6	6.3	6.8	7.3
Degree Utilization, x	0.46	0.50	0.45	0.66	0.46	0.18
Capacity (veh/h)	502	542	527	551	489	435
Control Delay (s)	14.4	14.4	13.7	19.5	15.5	11.8
Approach Delay (s)	14.4		17.2		15.5	11.8
Approach LOS	B		C		C	B

Intersection Summary				
Delay	15.6			
Level of Service	C			
Intersection Capacity Utilization	60.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	551	28	8	265	33	6	19	21	22	25	63
Future Volume (Veh/h)	163	551	28	8	265	33	6	19	21	22	25	63
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	163	551	28	8	265	33	6	19	21	22	25	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		177										
pX, platoon unblocked												
vC, conflicting volume	298			579			1071	1205	290	930	1202	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	298			579			1071	1205	290	930	1202	105
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			99			95	88	97	87	84	93
cM capacity (veh/h)	1260			991			129	158	707	176	158	929

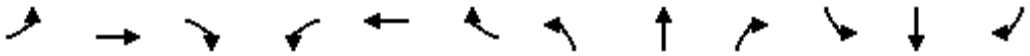
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	438	304	74	132	99	16	30	34	76
Volume Left	163	0	8	0	0	6	0	22	0
Volume Right	0	28	0	0	33	0	21	0	63
cSH	1260	1700	991	1700	1700	145	339	169	514
Volume to Capacity	0.13	0.18	0.01	0.08	0.06	0.11	0.09	0.20	0.15
Queue Length 95th (ft)	11	0	1	0	0	9	7	18	13
Control Delay (s)	3.9	0.0	1.0	0.0	0.0	32.8	16.7	31.7	13.2
Lane LOS	A		A			D	C	D	B
Approach Delay (s)	2.3		0.2			22.1		19.0	
Approach LOS						C		C	

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	44.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	235	208	72	206	278	163
Future Volume (vph)	235	208	72	206	278	163
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	235	208	72	206	278	163

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	235	208	48	230	332	109
Volume Left (vph)	235	0	0	0	278	0
Volume Right (vph)	0	208	0	206	0	0
Hadj (s)	0.53	-0.67	0.03	-0.59	0.45	0.03
Departure Headway (s)	7.0	5.8	6.6	6.0	6.7	6.3
Degree Utilization, x	0.46	0.33	0.09	0.38	0.62	0.19
Capacity (veh/h)	493	590	516	576	522	548
Control Delay (s)	14.5	10.5	9.0	11.4	18.9	9.6
Approach Delay (s)	12.6		11.0		16.6	
Approach LOS	B		B		C	

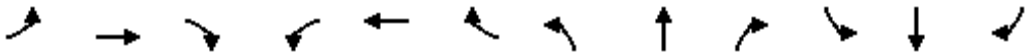
Intersection Summary			
Delay	13.7		
Level of Service	B		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	278	19	57	0	6	17	22	49	3	22	134	106
Future Volume (vph)	278	19	57	0	6	17	22	49	3	22	134	106
Peak Hour 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
Hourly flow rate (vph)	278	19	57	0	6	17	22	49	3	22	134	106

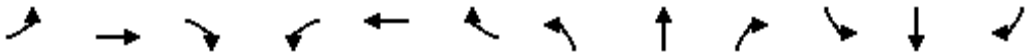
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	288	67	3	20	47	28	89	173
Volume Left (vph)	278	0	0	0	22	0	22	0
Volume Right (vph)	0	57	0	17	0	3	0	106
Hadj (s)	0.52	-0.57	0.03	-0.56	0.27	-0.04	0.16	-0.39
Departure Headway (s)	5.9	4.8	5.8	5.2	6.1	5.8	5.8	5.2
Degree Utilization, x	0.47	0.09	0.00	0.03	0.08	0.04	0.14	0.25
Capacity (veh/h)	587	710	575	638	553	581	588	653
Control Delay (s)	12.9	7.1	7.7	7.2	8.4	7.9	8.5	8.8
Approach Delay (s)	11.8		7.2		8.2		8.7	
Approach LOS	B		A		A		A	

Intersection Summary				
Delay	10.1			
Level of Service	B			
Intersection Capacity Utilization	43.1%	ICU Level of Service	A	
Analysis Period (min)	15			



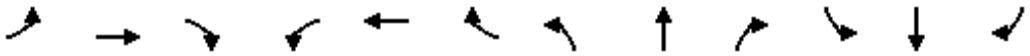
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	1224	200	0	0	0	0	1618	213	0	3340	0
Future Volume (vph)	255	1224	200	0	0	0	0	1618	213	0	3340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0	5.0					6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00					0.86	1.00		0.86	
Frt	1.00	1.00	0.85					1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1770	5085	1583					6408	1583		6408	
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)	1770	5085	1583					6408	1583		6408	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1330	217	0	0	0	0	1759	232	0	3630	0
RTOR Reduction (vph)	0	0	42	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	277	1330	175	0	0	0	0	1759	189	0	3630	0
Turn Type	Perm	NA	Perm					NA	Perm		NA	
Protected Phases		4						5			2	
Permitted Phases	4		4						5			
Actuated Green, G (s)	39.0	39.0	39.0					117.0	117.0		128.0	
Effective Green, g (s)	41.0	41.0	41.0					117.0	117.0		128.0	
Actuated g/C Ratio	0.23	0.23	0.23					0.65	0.65		0.71	
Clearance Time (s)	7.0	7.0	7.0					6.0	6.0		6.0	
Vehicle Extension (s)	5.0	5.0	5.0					0.2	0.2		0.2	
Lane Grp Cap (vph)	403	1158	360					4165	1028		4556	
v/s Ratio Prot		c0.26						0.27			c0.57	
v/s Ratio Perm	0.16		0.11						0.12			
v/c Ratio	0.69	1.15	0.48					0.42	0.18		0.80	
Uniform Delay, d1	63.6	69.5	60.3					15.2	12.5		17.3	
Progression Factor	1.07	1.06	1.10					1.00	1.00		0.24	
Incremental Delay, d2	5.9	76.8	2.0					0.3	0.4		0.9	
Delay (s)	74.0	150.6	68.3					15.5	12.9		5.1	
Level of Service	E	F	E					B	B		A	
Approach Delay (s)		129.1			0.0			15.2			5.1	
Approach LOS		F			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	81.2%	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												
Traffic Volume (vph)	0	0	0	281	1355	77	0	1873	0	0	3059	140
Future Volume (vph)	0	0	0	281	1355	77	0	1873	0	0	3059	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)				5.0	5.0	5.0		6.0			6.0	
Lane Util. Factor				1.00	0.86	1.00		0.86			0.86	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1770	6408	1583		6408			6366	
Flt Permitted				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (perm)				1770	6408	1583		6408			6366	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	305	1473	84	0	2036	0	0	3325	152
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	305	1473	42	0	2036	0	0	3474	0
Turn Type				Perm	NA	Perm		NA			NA	
Protected Phases					4			2			5	
Permitted Phases				4		4						
Actuated Green, G (s)				39.0	39.0	39.0		128.0			128.0	
Effective Green, g (s)				41.0	41.0	41.0		128.0			128.0	
Actuated g/C Ratio				0.23	0.23	0.23		0.71			0.71	
Clearance Time (s)				7.0	7.0	7.0		6.0			6.0	
Vehicle Extension (s)				6.0	6.0	6.0		0.2			0.2	
Lane Grp Cap (vph)				403	1459	360		4556			4526	
v/s Ratio Prot					c0.23			0.32			c0.55	
v/s Ratio Perm				0.17		0.03						
v/c Ratio				0.76	1.01	0.12		0.45			0.77	
Uniform Delay, d1				64.8	69.5	55.1		11.0			16.5	
Progression Factor				0.76	0.78	0.49		0.51			0.47	
Incremental Delay, d2				10.1	25.7	0.4		0.3			0.5	
Delay (s)				59.5	79.6	27.6		5.9			8.3	
Level of Service				E	E	C		A			A	
Approach Delay (s)		0.0			74.0			5.9			8.3	
Approach LOS		A			E			A			A	

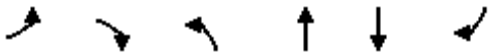
Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	4	40	12	1	35	13	1736	5	19	3290	12
Future Volume (Veh/h)	9	4	40	12	1	35	13	1736	5	19	3290	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	9	4	40	12	1	35	13	1736	5	19	3290	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											781	
pX, platoon unblocked	0.30	0.30	0.30	0.30	0.30		0.30					
vC, conflicting volume	3974	5101	1103	2941	5104	581	3302			1741		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2727	6527	0	0	6539	581	460			1741		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	88	0	0	92	96			95		
cM capacity (veh/h)	0	0	322	0	0	457	325			357		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	53	48	13	694	694	352	19	1316	1316	670
Volume Left	9	12	13	0	0	0	19	0	0	0
Volume Right	40	35	0	0	0	5	0	0	0	12
cSH	0	0	325	1700	1700	1700	357	1700	1700	1700
Volume to Capacity	Err	Err	0.04	0.41	0.41	0.21	0.05	0.77	0.77	0.39
Queue Length 95th (ft)	Err	Err	3	0	0	0	4	0	0	0
Control Delay (s)	Err	Err	16.5	0.0	0.0	0.0	15.6	0.0	0.0	0.0
Lane LOS	F	F	C				C			
Approach Delay (s)	Err	Err	0.1				0.1			
Approach LOS	F	F								

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	75.0%	ICU Level of Service	D	
Analysis Period (min)	15			



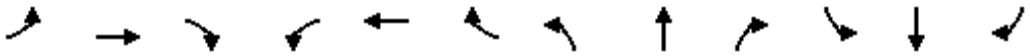
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	199	68	21	1759	3253	72
Future Volume (vph)	199	68	21	1759	3253	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	5.5	5.5	5.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5069	
Flt Permitted	0.95	1.00	0.03	1.00	1.00	
Satd. Flow (perm)	1770	1583	55	5085	5069	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	74	23	1912	3536	78
RTOR Reduction (vph)	0	62	0	0	1	0
Lane Group Flow (vph)	216	12	23	1912	3613	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4	6			
Actuated Green, G (s)	27.2	27.2	139.8	139.8	127.9	
Effective Green, g (s)	28.2	28.2	141.8	141.8	129.9	
Actuated g/C Ratio	0.16	0.16	0.79	0.79	0.72	
Clearance Time (s)	6.5	6.5	7.5	6.5	6.5	
Vehicle Extension (s)	5.0	5.0	4.0	0.2	0.2	
Lane Grp Cap (vph)	277	248	104	4005	3658	
v/s Ratio Prot	c0.12		0.01	c0.38	c0.71	
v/s Ratio Perm		0.01	0.17			
v/c Ratio	0.78	0.05	0.22	0.48	0.99	
Uniform Delay, d1	72.9	64.5	52.7	6.5	24.3	
Progression Factor	1.00	1.00	3.56	0.88	0.60	
Incremental Delay, d2	15.0	0.2	1.4	0.4	7.7	
Delay (s)	87.9	64.6	188.6	6.1	22.3	
Level of Service	F	E	F	A	C	
Approach Delay (s)	82.0			8.3	22.3	
Approach LOS	F			A	C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	2	45	1	19	13	1825	63	58	3532	0
Future Volume (vph)	0	0	2	45	1	19	13	1825	63	58	3532	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5		7.5	7.0		7.5	7.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.86			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1558			1672		1711	4891		1711	4916	
Flt Permitted		1.00			0.79		0.03	1.00		0.09	1.00	
Satd. Flow (perm)		1558			1371		52	4891		163	4916	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	2	45	1	19	13	1825	63	58	3532	0
RTOR Reduction (vph)	0	2	0	0	9	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	56	0	13	1887	0	58	3532	0
Turn Type		NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		13.6			13.6		141.4	139.0		147.4	142.0	
Effective Green, g (s)		13.6			13.6		141.4	139.0		147.4	142.0	
Actuated g/C Ratio		0.08			0.08		0.79	0.77		0.82	0.79	
Clearance Time (s)		7.5			7.5		7.5	7.0		7.5	7.0	
Vehicle Extension (s)		4.0			4.0		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		117			103		62	3776		179	3878	
v/s Ratio Prot		0.00					0.00	0.39		c0.01	c0.72	
v/s Ratio Perm					c0.04		0.16			0.25		
v/c Ratio		0.00			0.54		0.21	0.50		0.32	0.91	
Uniform Delay, d1		76.9			80.2		27.4	7.6		4.9	14.2	
Progression Factor		1.00			1.00		1.50	1.15		0.58	0.74	
Incremental Delay, d2		0.0			7.1		1.5	0.4		0.5	2.1	
Delay (s)		76.9			87.3		42.6	9.1		3.3	12.7	
Level of Service		E			F		D	A		A	B	
Approach Delay (s)		76.9			87.3			9.4			12.5	
Approach LOS		E			F			A			B	

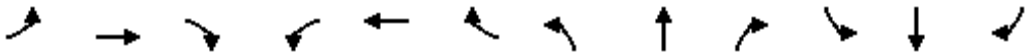
Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



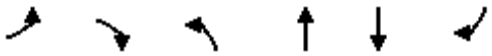
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	4	626	1	5	0	1408	2	7	3162	20
Future Volume (vph)	3	0	4	626	1	5	0	1408	2	7	3162	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.0		5.0	5.0	5.0			4.0		4.0	4.0	
Lane Util. Factor	1.00		1.00	0.91	0.91			0.91		1.00	0.91	
Frt	1.00		0.85	1.00	1.00			1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95	0.95			1.00		0.95	1.00	
Satd. Flow (prot)	1770		1583	3221	1611			5084		1770	5080	
Flt Permitted	0.27		1.00	0.95	0.95			1.00		0.14	1.00	
Satd. Flow (perm)	494		1583	3221	1611			5084		264	5080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	4	680	1	5	0	1530	2	8	3437	22
RTOR Reduction (vph)	0	0	3	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	3	0	1	476	209	0	0	1532	0	8	3459	0
Turn Type	Perm		Perm	Perm	NA			NA		Perm	NA	
Protected Phases					8			6			2	
Permitted Phases	4		4	8						2		
Actuated Green, G (s)	28.0		28.0	28.0	28.0			138.0		138.0	138.0	
Effective Green, g (s)	30.0		30.0	30.0	30.0			141.0		141.0	141.0	
Actuated g/C Ratio	0.17		0.17	0.17	0.17			0.78		0.78	0.78	
Clearance Time (s)	7.0		7.0	7.0	7.0			7.0		7.0	7.0	
Vehicle Extension (s)	5.0		5.0	5.0	5.0			0.2		0.2	0.2	
Lane Grp Cap (vph)	82		263	536	268			3982		206	3979	
v/s Ratio Prot								0.30			c0.68	
v/s Ratio Perm	0.01		0.00	c0.15	0.13					0.03		
v/c Ratio	0.04		0.00	0.89	0.78			0.38		0.04	0.87	
Uniform Delay, d1	62.9		62.5	73.4	71.8			6.0		4.4	13.2	
Progression Factor	1.00		1.00	1.00	1.00			0.12		0.13	0.79	
Incremental Delay, d2	0.4		0.0	17.4	15.7			0.2		0.2	1.7	
Delay (s)	63.3		62.5	90.7	87.5			1.0		0.7	12.1	
Level of Service	E		E	F	F			A		A	B	
Approach Delay (s)		62.8			89.7			1.0			12.1	
Approach LOS		E			F			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



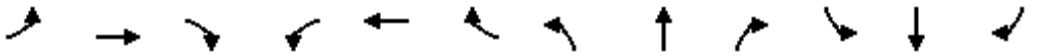
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	6	25	12	5	3	13	1398	5	1	3152	3
Future Volume (vph)	27	6	25	12	5	3	13	1398	5	1	3152	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.5			6.5		6.5	4.0		6.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.94			0.98		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1715			1772		1770	5083		1770	5085	
Flt Permitted		0.84			0.78		0.03	1.00		0.15	1.00	
Satd. Flow (perm)		1478			1433		52	5083		274	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	7	27	13	5	3	14	1520	5	1	3426	3
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	63	0	0	21	0	14	1525	0	1	3429	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		13.8			13.8		145.5	143.1		142.9	141.8	
Effective Green, g (s)		14.8			14.8		147.5	146.1		144.9	144.8	
Actuated g/C Ratio		0.08			0.08		0.82	0.81		0.81	0.80	
Clearance Time (s)		7.5			7.5		7.5	7.0		7.5	7.0	
Vehicle Extension (s)		4.0			4.0		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		121			117		75	4125		238	4090	
v/s Ratio Prot							c0.00	0.30		0.00	c0.67	
v/s Ratio Perm		c0.04			0.01		0.15			0.00		
v/c Ratio		0.52			0.18		0.19	0.37		0.00	0.84	
Uniform Delay, d1		79.2			76.9		22.5	4.6		3.7	10.6	
Progression Factor		1.00			1.00		3.11	2.14		0.69	0.27	
Incremental Delay, d2		5.2			1.0		1.1	0.2		0.0	1.6	
Delay (s)		84.4			78.0		71.2	10.0		2.5	4.4	
Level of Service		F			E		E	A		A	A	
Approach Delay (s)		84.4			78.0			10.5			4.4	
Approach LOS		F			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	112	78	18	1665	2838	6
Future Volume (vph)	112	78	18	1665	2838	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	5.5	5.5	7.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5084	
Flt Permitted	0.95	1.00	0.03	1.00	1.00	
Satd. Flow (perm)	1770	1583	52	5085	5084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	85	20	1810	3085	7
RTOR Reduction (vph)	0	46	0	0	0	0
Lane Group Flow (vph)	122	39	20	1810	3092	0
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			1	6	2	
Permitted Phases	4	4	6			
Actuated Green, G (s)	18.6	18.6	147.9	147.9	137.2	
Effective Green, g (s)	19.6	19.6	147.9	150.9	140.2	
Actuated g/C Ratio	0.11	0.11	0.82	0.84	0.78	
Clearance Time (s)	6.5	6.5	7.0	7.0	7.0	
Vehicle Extension (s)	4.0	4.0	3.0	0.2	0.2	
Lane Grp Cap (vph)	192	172	78	4262	3959	
v/s Ratio Prot			0.01	c0.36	c0.61	
v/s Ratio Perm	c0.07	0.02	0.21			
v/c Ratio	0.64	0.22	0.26	0.42	0.78	
Uniform Delay, d1	76.8	73.3	20.1	3.7	11.2	
Progression Factor	1.00	1.00	3.53	0.60	1.00	
Incremental Delay, d2	7.5	0.9	1.7	0.3	1.6	
Delay (s)	84.3	74.2	72.8	2.5	12.8	
Level of Service	F	E	E	A	B	
Approach Delay (s)	80.1			3.2	12.8	
Approach LOS	F			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

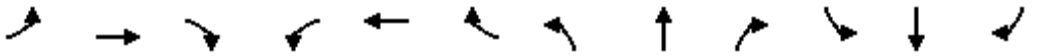


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	21	22	70	5	17	6	2090	100	242	2692	42
Future Volume (vph)	43	21	22	70	5	17	6	2090	100	242	2692	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.5	6.5	6.5	6.5		7.5	4.0	4.0	7.5	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt		1.00	0.85	1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1802	1583	1770	1644		1770	5085	1583	1770	5085	1583
Flt Permitted		0.78	1.00	0.71	1.00		0.04	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)		1461	1583	1325	1644		75	5085	1583	78	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	23	24	76	5	18	7	2272	109	263	2926	46
RTOR Reduction (vph)	0	0	22	0	17	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	70	2	76	7	0	7	2272	109	263	2926	36
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)		11.5	11.5	11.5	11.5		101.2	100.0	100.0	124.0	115.3	115.3
Effective Green, g (s)		12.5	12.5	12.5	12.5		101.2	103.0	103.0	124.0	118.3	118.3
Actuated g/C Ratio		0.08	0.08	0.08	0.08		0.67	0.69	0.69	0.83	0.79	0.79
Clearance Time (s)		7.5	7.5	7.5	7.5		7.5	7.0	7.0	7.5	7.0	7.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		121	131	110	137		64	3491	1086	250	4010	1248
v/s Ratio Prot					0.00		0.00	0.45		c0.12	0.58	
v/s Ratio Perm		0.05	0.00	c0.06			0.07		0.07	c0.76		0.02
v/c Ratio		0.58	0.02	0.69	0.05		0.11	0.65	0.10	1.05	0.73	0.03
Uniform Delay, d1		66.2	63.1	66.9	63.3		10.6	13.3	7.9	52.1	7.9	3.4
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		6.6	0.0	17.1	0.1		0.8	1.0	0.2	71.2	1.2	0.0
Delay (s)		72.8	63.1	83.9	63.4		11.4	14.3	8.1	123.3	9.1	3.5
Level of Service		E	E	F	E		B	B	A	F	A	A
Approach Delay (s)		70.3			79.2			14.0			18.3	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

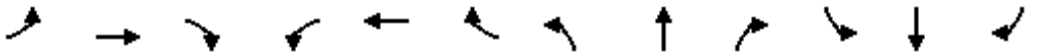
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	208	55	1825	325	89	2717
Future Volume (vph)	208	55	1825	325	89	2717
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	6.0	5.0	4.0	4.0	6.0	4.0
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	2787	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	2787	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	60	1984	353	97	2953
RTOR Reduction (vph)	0	4	0	57	0	0
Lane Group Flow (vph)	226	56	1984	296	97	2953
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	4	5	6	4	5	2
Permitted Phases		4		6		
Actuated Green, G (s)	18.9	34.1	125.9	144.8	15.2	147.1
Effective Green, g (s)	19.9	36.1	128.9	150.8	15.2	150.1
Actuated g/C Ratio	0.11	0.20	0.72	0.84	0.08	0.83
Clearance Time (s)	7.0	6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)	4.0	3.0	0.2	4.0	3.0	0.2
Lane Grp Cap (vph)	379	317	3641	2396	149	4240
v/s Ratio Prot	c0.07	0.02	0.39	0.02	0.05	c0.58
v/s Ratio Perm		0.02		0.09		
v/c Ratio	0.60	0.18	0.54	0.12	0.65	0.70
Uniform Delay, d1	76.2	59.6	11.9	2.6	79.8	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.3	0.6	0.0	9.8	1.0
Delay (s)	79.2	59.9	12.5	2.7	89.6	6.9
Level of Service	E	E	B	A	F	A
Approach Delay (s)	75.1		11.0			9.5
Approach LOS	E		B			A

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	136	104	192	51	91	140	1404	336	270	2510	150
Future Volume (vph)	21	136	104	192	51	91	140	1404	336	270	2510	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1610	3063		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1610	3063		3433	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	148	113	209	55	99	152	1526	365	293	2728	163
RTOR Reduction (vph)	0	0	64	0	83	0	0	0	162	0	0	35
Lane Group Flow (vph)	23	148	49	209	71	0	152	1526	203	293	2728	128
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3	6	4	4		6	2		1	5	
Permitted Phases			3						2			5
Actuated Green, G (s)	10.0	10.0	23.0	27.8	27.8		13.0	93.1	93.1	21.0	98.1	98.1
Effective Green, g (s)	11.0	11.0	29.0	28.8	28.8		16.0	96.1	96.1	21.0	101.1	101.1
Actuated g/C Ratio	0.06	0.06	0.17	0.17	0.17		0.09	0.56	0.56	0.12	0.58	0.58
Clearance Time (s)	5.0	5.0	7.0	5.0	5.0		7.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		3.0	3.0	3.0	4.0	3.0	3.0
Lane Grp Cap (vph)	112	118	265	268	510		317	2826	879	214	2973	925
v/s Ratio Prot	0.01	c0.08	0.02	c0.13	0.02		0.04	0.30		c0.17	c0.54	
v/s Ratio Perm			0.01						0.13			0.08
v/c Ratio	0.21	1.25	0.18	0.78	0.14		0.48	0.54	0.23	1.37	0.92	0.14
Uniform Delay, d1	76.8	81.0	61.8	69.0	61.5		74.5	24.4	19.6	76.0	32.2	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	166.2	0.3	14.1	0.2		1.1	0.7	0.6	193.0	5.8	0.3
Delay (s)	78.0	247.2	62.1	83.1	61.7		75.6	25.1	20.2	268.9	38.0	16.5
Level of Service	E	F	E	F	E		E	C	C	F	D	B
Approach Delay (s)		159.8			74.0			28.0			58.1	
Approach LOS		F			E			C			E	

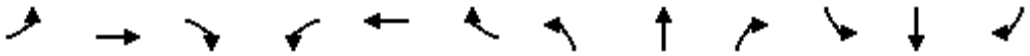
Intersection Summary			
HCM 2000 Control Delay	53.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	172.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	1074	24	208	959	346	26	0	93	985	0	97
Future Volume (vph)	137	1074	24	208	959	346	26	0	93	985	0	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	9.0		7.0	9.0	9.0	8.5		8.5	8.0		8.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00		0.88	0.97		1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3319	3410		3319	3421	1531	1711		2694	3319		1531
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3319	3410		3319	3421	1531	1711		2694	3319		1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	137	1074	24	208	959	346	26	0	93	985	0	97
RTOR Reduction (vph)	0	1	0	0	0	162	0	0	79	0	0	68
Lane Group Flow (vph)	137	1097	0	208	959	184	26	0	14	985	0	29
Turn Type	Prot	NA		Prot	NA	Perm	Prot		pt+ov	Prot		Perm
Protected Phases	1	6		5	2		3		3 5	4		
Permitted Phases						2						4
Actuated Green, G (s)	11.5	49.3		14.7	52.5	52.5	8.2		22.9	45.3		45.3
Effective Green, g (s)	11.5	49.3		14.7	52.5	52.5	8.2		22.9	45.3		45.3
Actuated g/C Ratio	0.08	0.33		0.10	0.35	0.35	0.05		0.15	0.30		0.30
Clearance Time (s)	7.0	9.0		7.0	9.0	9.0	8.5			8.0		8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		3.0
Lane Grp Cap (vph)	254	1120		325	1197	535	93		411	1002		462
v/s Ratio Prot	0.04	c0.32		c0.06	c0.28		c0.02		0.01	c0.30		
v/s Ratio Perm						0.12						0.02
v/c Ratio	0.54	0.98		0.64	0.80	0.34	0.28		0.03	0.98		0.06
Uniform Delay, d1	66.7	49.9		65.1	44.0	36.0	68.1		54.1	52.0		37.3
Progression Factor	1.11	0.80		1.20	0.75	0.47	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.8	20.0		3.8	5.1	1.6	1.6		0.0	24.2		0.1
Delay (s)	75.9	59.7		81.8	38.3	18.6	69.7		54.2	76.1		37.3
Level of Service	E	E		F	D	B	E		D	E		D
Approach Delay (s)		61.5			39.8			57.6			72.7	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

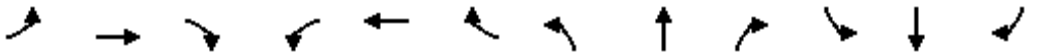
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	18	25	141	70	35	92	1561	65	18	3651	167
Future Volume (vph)	21	18	25	141	70	35	92	1561	65	18	3651	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		7.0	7.0		6.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.86		1.00	0.86	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1801	1531	1711	1711		3319	6157		1711	6154	
Flt Permitted	0.59	1.00	1.00	0.75	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1055	1801	1531	1343	1711		3319	6157		1711	6154	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	18	25	141	70	35	92	1561	65	18	3651	167
RTOR Reduction (vph)	0	0	22	0	11	0	0	2	0	0	3	0
Lane Group Flow (vph)	21	18	3	141	94	0	92	1624	0	18	3815	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		6	2		1	5	
Permitted Phases	4		4	8								
Actuated Green, G (s)	24.3	24.3	24.3	24.3	24.3		20.4	131.6		5.1	115.3	
Effective Green, g (s)	24.3	24.3	24.3	24.3	24.3		20.4	131.6		5.1	115.3	
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14		0.11	0.73		0.03	0.64	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	7.0		6.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	142	243	206	181	230		376	4501		48	3941	
v/s Ratio Prot		0.01			0.05		0.03	c0.26		0.01	c0.62	
v/s Ratio Perm	0.02		0.00	c0.11								
v/c Ratio	0.15	0.07	0.02	0.78	0.41		0.24	0.36		0.38	0.97	
Uniform Delay, d1	68.7	68.0	67.5	75.3	71.3		72.8	8.8		85.9	30.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.32	0.59	
Incremental Delay, d2	0.5	0.1	0.0	18.8	1.2		0.3	0.2		2.2	4.7	
Delay (s)	69.2	68.2	67.5	94.1	72.4		73.1	9.1		115.9	22.8	
Level of Service	E	E	E	F	E		E	A		F	C	
Approach Delay (s)		68.2			84.8			12.5			23.3	
Approach LOS		E			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

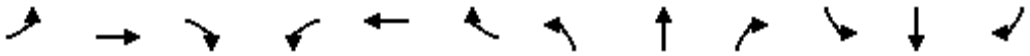


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	270	68	112	215	170	42	1553	22	0	3656	0
Future Volume (vph)	395	270	68	112	215	170	42	1553	22	0	3656	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.0			7.0	
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.86			0.81	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00			1.00	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1557	3213	1531	1557	3269	1531	1711	6181			7293	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)	1557	3213	1531	1557	3269	1531	1711	6181			7293	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	395	270	68	112	215	170	42	1553	22	0	3656	0
RTOR Reduction (vph)	0	0	60	0	0	115	0	1	0	0	0	0
Lane Group Flow (vph)	217	448	8	101	226	55	42	1574	0	0	3656	0
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA			NA	
Protected Phases	3	3	3	4	4	4	1	6			2	
Permitted Phases												
Actuated Green, G (s)	21.5	21.5	21.5	16.8	16.8	16.8	10.1	117.7			99.1	
Effective Green, g (s)	21.5	21.5	21.5	16.8	16.8	16.8	10.1	117.7			99.1	
Actuated g/C Ratio	0.12	0.12	0.12	0.09	0.09	0.09	0.06	0.65			0.55	
Clearance Time (s)	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.0			7.0	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	0.2			0.2	
Lane Grp Cap (vph)	185	383	182	145	305	142	96	4041			4015	
v/s Ratio Prot	0.14	c0.14	0.01	0.06	c0.07	0.04	0.02	c0.25			c0.50	
v/s Ratio Perm												
v/c Ratio	1.17	1.17	0.04	0.70	0.74	0.39	0.44	0.39			0.91	
Uniform Delay, d1	79.2	79.2	70.2	79.1	79.5	76.8	82.2	14.5			36.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.87			1.00	
Incremental Delay, d2	120.5	100.9	0.1	14.6	9.9	2.4	6.2	0.3			4.1	
Delay (s)	199.7	180.1	70.3	93.7	89.4	79.1	78.9	27.4			40.6	
Level of Service	F	F	E	F	F	E	E	C			D	
Approach Delay (s)		175.7			86.7			28.7			40.6	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1059	0	3	1101	98	0	1	3	42	0	15
Future Volume (vph)	25	1059	0	3	1101	98	0	1	3	42	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99			0.89		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1711	3421		1711	3379			1598		1711	1531	
Flt Permitted	0.22	1.00		0.26	1.00			1.00		0.76	1.00	
Satd. Flow (perm)	402	3421		472	3379			1598		1360	1531	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	1059	0	3	1101	98	0	1	3	42	0	15
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	14	0
Lane Group Flow (vph)	25	1059	0	3	1197	0	0	1	0	42	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	98.9	98.9		98.9	98.9			8.1		8.1	8.1	
Effective Green, g (s)	98.9	98.9		98.9	98.9			8.1		8.1	8.1	
Actuated g/C Ratio	0.82	0.82		0.82	0.82			0.07		0.07	0.07	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	0.2	0.2		0.2	0.2			3.0		3.0	3.0	
Lane Grp Cap (vph)	331	2819		389	2784			107		91	103	
v/s Ratio Prot		0.31			c0.35			0.00			0.00	
v/s Ratio Perm	0.06			0.01						c0.03		
v/c Ratio	0.08	0.38		0.01	0.43			0.01		0.46	0.01	
Uniform Delay, d1	2.0	2.7		1.9	2.9			52.2		53.9	52.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4		0.0	0.5			0.0		3.7	0.0	
Delay (s)	2.4	3.1		1.9	3.4			52.3		57.5	52.2	
Level of Service	A	A		A	A			D		E	D	
Approach Delay (s)		3.1			3.4			52.3			56.1	
Approach LOS		A			A			D			E	

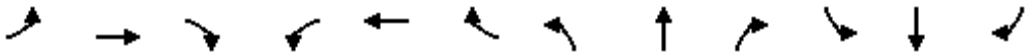
Intersection Summary			
HCM 2000 Control Delay	4.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1415	111	72	1512	276	165
Future Volume (vph)	1415	111	72	1512	276	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.0	6.5
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)	3421	1531	1711	3421	1711	1531
Flt Permitted	1.00	1.00	0.11	1.00	0.95	1.00
Satd. Flow (perm)	3421	1531	201	3421	1711	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1415	111	72	1512	276	165
RTOR Reduction (vph)	0	33	0	0	0	25
Lane Group Flow (vph)	1415	78	72	1512	276	140
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases		6	2			4
Actuated Green, G (s)	92.5	92.5	108.4	108.4	29.1	38.5
Effective Green, g (s)	92.5	92.5	108.4	108.4	29.1	38.5
Actuated g/C Ratio	0.62	0.62	0.72	0.72	0.19	0.26
Clearance Time (s)	6.5	6.5	6.5	6.5	6.0	6.5
Vehicle Extension (s)	0.2	0.2	5.0	0.2	5.0	5.0
Lane Grp Cap (vph)	2109	944	239	2472	331	392
v/s Ratio Prot	c0.41		0.02	c0.44	c0.16	0.02
v/s Ratio Perm		0.05	0.20			0.07
v/c Ratio	0.67	0.08	0.30	0.61	0.83	0.36
Uniform Delay, d1	18.8	11.6	13.0	10.3	58.1	45.6
Progression Factor	1.57	2.33	0.39	0.67	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.1	0.9	18.0	1.2
Delay (s)	30.8	27.1	6.2	7.8	76.1	46.8
Level of Service	C	C	A	A	E	D
Approach Delay (s)	30.5			7.7	65.1	
Approach LOS	C			A	E	

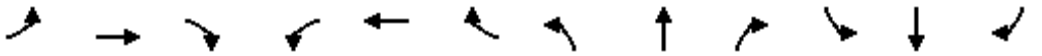
Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	892	23	64	225	284	74	936	66	187	1035	275
Future Volume (vph)	217	892	23	64	225	284	74	936	66	187	1035	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.5	6.0		6.0	6.0	4.0	6.5	6.5		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1863	1583	1770	3504		1770	3428	
Flt Permitted	0.28	1.00		0.13	1.00	1.00	0.13	1.00		0.10	1.00	
Satd. Flow (perm)	525	1856		250	1863	1583	249	3504		179	3428	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	970	25	70	245	309	80	1017	72	203	1125	299
RTOR Reduction (vph)	0	1	0	0	0	0	0	3	0	0	16	0
Lane Group Flow (vph)	236	994	0	70	245	309	80	1086	0	203	1408	0
Turn Type	pm+pt	NA		Perm	NA	Free	Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8		Free	2			6		
Actuated Green, G (s)	54.0	54.0		29.8	29.8	150.0	59.5	59.5		84.0	84.0	
Effective Green, g (s)	54.0	54.0		29.8	29.8	150.0	59.5	59.5		84.0	84.0	
Actuated g/C Ratio	0.36	0.36		0.20	0.20	1.00	0.40	0.40		0.56	0.56	
Clearance Time (s)	6.5	6.0		6.0	6.0		6.5	6.5		6.0	6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		4.0	0.2	
Lane Grp Cap (vph)	335	668		49	370	1583	98	1389		291	1919	
v/s Ratio Prot	0.08	c0.54			0.13			0.31		0.08	c0.41	
v/s Ratio Perm	0.17			0.28		0.20	c0.32			0.31		
v/c Ratio	0.70	1.49		1.43	0.66	0.20	0.82	0.78		0.70	0.73	
Uniform Delay, d1	37.0	48.0		60.1	55.5	0.0	40.4	39.6		30.1	24.6	
Progression Factor	1.00	1.00		0.95	0.94	1.00	1.34	1.35		2.07	0.58	
Incremental Delay, d2	7.1	227.8		271.7	4.4	0.2	49.0	4.3		6.1	2.0	
Delay (s)	44.1	275.8		328.6	56.6	0.2	103.1	57.6		68.4	16.4	
Level of Service	D	F		F	E	A	F	E		E	B	
Approach Delay (s)		231.4			59.2			60.7			22.9	
Approach LOS		F			E			E			C	

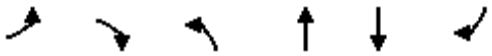
Intersection Summary			
HCM 2000 Control Delay	92.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	62	420	16	32	14	272	923	20	41	947	134
Future Volume (vph)	139	62	420	16	32	14	272	923	20	41	947	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1801	1531	1711	1718		1711	3410		1711	3358	
Flt Permitted	0.73	1.00	1.00	0.72	1.00		0.19	1.00		0.30	1.00	
Satd. Flow (perm)	1309	1801	1531	1290	1718		337	3410		546	3358	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	139	62	420	16	32	14	272	923	20	41	947	134
RTOR Reduction (vph)	0	0	320	0	12	0	0	1	0	0	5	0
Lane Group Flow (vph)	139	62	100	16	34	0	272	942	0	41	1076	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			4		5	2			6	
Permitted Phases	8		8	4			2			6		
Actuated Green, G (s)	23.1	23.1	23.1	23.1	23.1		113.9	113.9		88.9	88.9	
Effective Green, g (s)	23.1	23.1	23.1	23.1	23.1		113.9	113.9		88.9	88.9	
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15		0.76	0.76		0.59	0.59	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		5.0	0.2		0.2	0.2	
Lane Grp Cap (vph)	201	277	235	198	264		429	2589		323	1990	
v/s Ratio Prot		0.03			0.02		c0.08	0.28			0.32	
v/s Ratio Perm	c0.11		0.07	0.01			c0.40			0.08		
v/c Ratio	0.69	0.22	0.43	0.08	0.13		0.63	0.36		0.13	0.54	
Uniform Delay, d1	60.1	55.6	57.5	54.4	54.8		11.1	6.0		13.5	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		3.09	0.34		0.31	0.31	
Incremental Delay, d2	9.8	0.4	1.2	0.2	0.2		4.0	0.4		0.5	0.6	
Delay (s)	69.9	56.0	58.7	54.5	55.0		38.5	2.4		4.6	6.3	
Level of Service	E	E	E	D	D		D	A		A	A	
Approach Delay (s)		60.9			54.9			10.5			6.2	
Approach LOS		E			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

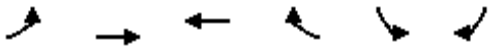
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	168	124	5	1047	1373	10
Future Volume (vph)	168	124	5	1047	1373	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3319	1531	1711	3421	3421	1531
Flt Permitted	0.95	1.00	0.16	1.00	1.00	1.00
Satd. Flow (perm)	3319	1531	293	3421	3421	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	124	5	1047	1373	10
RTOR Reduction (vph)	0	113	0	0	0	2
Lane Group Flow (vph)	168	11	5	1047	1373	8
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	13.0	13.0	125.0	125.0	117.8	117.8
Effective Green, g (s)	13.0	13.0	125.0	125.0	117.8	117.8
Actuated g/C Ratio	0.09	0.09	0.83	0.83	0.79	0.79
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	287	132	255	2850	2686	1202
v/s Ratio Prot	c0.05		0.00	c0.31	c0.40	
v/s Ratio Perm		0.01	0.02			0.01
v/c Ratio	0.59	0.08	0.02	0.37	0.51	0.01
Uniform Delay, d1	65.9	63.0	3.7	3.0	5.8	3.5
Progression Factor	1.00	1.00	0.23	0.17	2.25	2.65
Incremental Delay, d2	3.0	0.3	0.0	0.3	0.6	0.0
Delay (s)	68.9	63.3	0.9	0.8	13.6	9.2
Level of Service	E	E	A	A	B	A
Approach Delay (s)	66.5			0.8	13.6	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

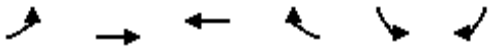
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↰	↱
Traffic Volume (veh/h)	0	643	245	0	120	343
Future Volume (Veh/h)	0	643	245	0	120	343
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	643	245	0	120	343
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		584	547			
pX, platoon unblocked	0.97				0.97	0.97
vC, conflicting volume	245				459	122
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	156				377	30
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				79	66
cM capacity (veh/h)	1377				578	1006

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	214	214	214	122	122	120	343
Volume Left	0	0	0	0	0	120	0
Volume Right	0	0	0	0	0	0	343
cSH	1700	1700	1700	1700	1700	578	1006
Volume to Capacity	0.13	0.13	0.13	0.07	0.07	0.21	0.34
Queue Length 95th (ft)	0	0	0	0	0	19	38
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	12.8	10.4
Lane LOS						B	B
Approach Delay (s)	0.0			0.0		11.1	
Approach LOS						B	

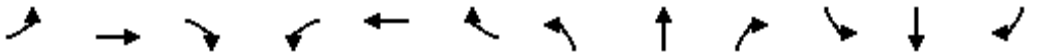
Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	137	668	550	121	71	83
Future Volume (vph)	137	668	550	121	71	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1711	1801	1757		1711	1531
Flt Permitted	0.37	1.00	1.00		0.95	1.00
Satd. Flow (perm)	669	1801	1757		1711	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	137	668	550	121	71	83
RTOR Reduction (vph)	0	0	8	0	0	75
Lane Group Flow (vph)	137	668	663	0	71	8
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		6	2		4	4
Permitted Phases	6		2			4
Actuated Green, G (s)	56.1	56.1	56.1		7.4	7.4
Effective Green, g (s)	56.1	56.1	56.1		7.4	7.4
Actuated g/C Ratio	0.75	0.75	0.75		0.10	0.10
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5
Vehicle Extension (s)	5.0	5.0	5.0		3.0	3.0
Lane Grp Cap (vph)	500	1347	1314		168	151
v/s Ratio Prot		0.37	c0.38		c0.04	0.01
v/s Ratio Perm	0.20					
v/c Ratio	0.27	0.50	0.50		0.42	0.05
Uniform Delay, d1	3.0	3.8	3.8		31.8	30.6
Progression Factor	1.87	2.66	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.1	1.4		1.7	0.2
Delay (s)	5.7	10.2	5.2		33.5	30.8
Level of Service	A	B	A		C	C
Approach Delay (s)		9.4	5.2		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

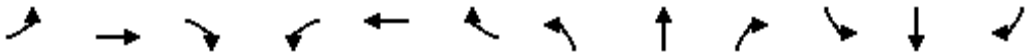
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	360	21	1	350	9	13	6	13	0	0	227
Future Volume (vph)	159	360	21	1	350	9	13	6	13	0	0	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0				6.0
Lane Util. Factor	1.00	1.00			0.95			1.00				1.00
Frt	1.00	0.99			1.00			0.95				0.86
Flt Protected	0.95	1.00			1.00			0.98				1.00
Satd. Flow (prot)	1711	1786			3408			1668				1558
Flt Permitted	0.54	1.00			0.95			0.98				1.00
Satd. Flow (perm)	967	1786			3253			1668				1558
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	159	360	21	1	350	9	13	6	13	0	0	227
RTOR Reduction (vph)	0	1	0	0	1	0	0	12	0	0	0	194
Lane Group Flow (vph)	159	380	0	0	359	0	0	20	0	0	0	33
Turn Type	pm+pt	NA		Perm	NA		Perm	NA				pm+ov
Protected Phases	1	2			2			4				1
Permitted Phases	2			2			4					4
Actuated Green, G (s)	67.4	59.0			59.0			4.6				13.0
Effective Green, g (s)	67.4	59.0			59.0			4.6				13.0
Actuated g/C Ratio	0.75	0.66			0.66			0.05				0.14
Clearance Time (s)	6.0	6.0			6.0			6.0				6.0
Vehicle Extension (s)	4.0	1.0			1.0			3.0				4.0
Lane Grp Cap (vph)	793	1170			2132			85				328
v/s Ratio Prot	c0.02	c0.21										0.01
v/s Ratio Perm	0.13				0.11			0.01				0.01
v/c Ratio	0.20	0.32			0.17			0.23				0.10
Uniform Delay, d1	3.1	6.8			6.0			41.0				33.4
Progression Factor	1.25	1.32			1.00			1.00				1.00
Incremental Delay, d2	0.2	0.7			0.2			1.4				0.2
Delay (s)	4.1	9.7			6.2			42.4				33.6
Level of Service	A	A			A			D				C
Approach Delay (s)		8.0			6.2			42.4			33.6	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



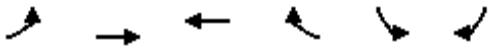
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2001	0	0	0	0	0	0	0	84	0	0
Future Volume (vph)	0	2001	0	0	0	0	0	0	0	84	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0								6.5	6.5	
Lane Util. Factor		0.91								0.95	0.95	
Frt		1.00								1.00	1.00	
Flt Protected		1.00								0.95	0.95	
Satd. Flow (prot)		5085								1681	1681	
Flt Permitted		1.00								0.95	0.95	
Satd. Flow (perm)		5085								1681	1681	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2175	0	0	0	0	0	0	0	91	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	29	29	0
Lane Group Flow (vph)	0	2175	0	0	0	0	0	0	0	16	17	0
Turn Type		NA							Free	Perm	NA	
Protected Phases		2									4	
Permitted Phases									Free	4		
Actuated Green, G (s)		159.9								6.6	6.6	
Effective Green, g (s)		160.9								7.6	7.6	
Actuated g/C Ratio		0.89								0.04	0.04	
Clearance Time (s)		6.0								7.5	7.5	
Vehicle Extension (s)		0.2								3.0	3.0	
Lane Grp Cap (vph)		4545								70	70	
v/s Ratio Prot		c0.43										
v/s Ratio Perm										0.01	0.01	
v/c Ratio		0.48								0.23	0.25	
Uniform Delay, d1		1.8								83.4	83.4	
Progression Factor		1.00								0.35	0.35	
Incremental Delay, d2		0.4								1.2	1.3	
Delay (s)		2.1								30.5	30.3	
Level of Service		A								C	C	
Approach Delay (s)		2.1			0.0			0.0			30.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑↑	↰↰	
Traffic Volume (vph)	0	0	0	1689	89	0
Future Volume (vph)	0	0	0	1689	89	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)				1.0	6.5	
Lane Util. Factor				0.86	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6408	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6408	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1836	97	0
RTOR Reduction (vph)	0	0	0	0	77	0
Lane Group Flow (vph)	0	0	0	1836	20	0
Turn Type				NA	Prot	
Protected Phases				Free!	1!	
Permitted Phases						
Actuated Green, G (s)				180.0	35.5	
Effective Green, g (s)				180.0	36.5	
Actuated g/C Ratio				1.00	0.20	
Clearance Time (s)					7.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				6408	696	
v/s Ratio Prot				0.29	0.01	
v/s Ratio Perm						
v/c Ratio				0.29	0.03	
Uniform Delay, d1				0.0	57.5	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	0.0	
Delay (s)				0.1	57.6	
Level of Service				A	E	
Approach Delay (s)	0.0			0.1	57.6	
Approach LOS	A			A	E	

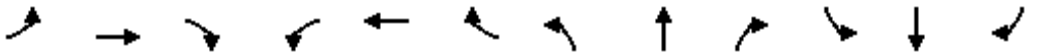
Intersection Summary			
HCM 2000 Control Delay	3.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group



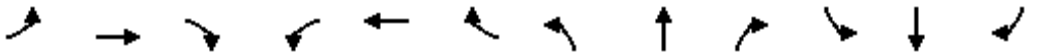
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	118	879	604	0	356	56
Future Volume (vph)	118	879	604	0	356	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	5.0	7.0	7.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1863		1770	1583
Flt Permitted	0.27	1.00	1.00		0.95	1.00
Satd. Flow (perm)	502	1863	1863		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	955	657	0	387	61
RTOR Reduction (vph)	0	0	0	0	0	41
Lane Group Flow (vph)	128	955	657	0	387	20
Turn Type	pm+pt	NA	NA		Prot	Prot
Protected Phases	1	6	2		4	4
Permitted Phases	6					
Actuated Green, G (s)	105.0	105.0	90.9		35.0	35.0
Effective Green, g (s)	105.0	105.0	90.9		35.0	35.0
Actuated g/C Ratio	0.69	0.69	0.59		0.23	0.23
Clearance Time (s)	5.0	7.0	7.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		7.0	7.0
Lane Grp Cap (vph)	419	1278	1106		404	362
v/s Ratio Prot	0.02	c0.51	0.35		c0.22	0.01
v/s Ratio Perm	0.19					
v/c Ratio	0.31	0.75	0.59		0.96	0.06
Uniform Delay, d1	12.6	15.5	19.5		58.3	46.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	4.0	2.4		35.2	0.2
Delay (s)	13.0	19.5	21.8		93.4	46.3
Level of Service	B	B	C		F	D
Approach Delay (s)		18.7	21.8		87.0	
Approach LOS		B	C		F	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	153.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



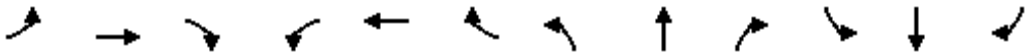
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	487	21	167	467	295	53	515	21	320	792	295
Future Volume (vph)	336	487	21	167	467	295	53	515	21	320	792	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3517		1770	3539	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3517		1770	3539	1583	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	365	529	23	182	508	321	58	560	23	348	861	321
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	227
Lane Group Flow (vph)	365	550	0	182	508	321	58	560	23	348	861	94
Turn Type	Prot	NA		Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases						Free			4			8
Actuated Green, G (s)	20.8	55.3		19.1	53.6	150.0	8.6	34.6	34.6	18.0	44.0	44.0
Effective Green, g (s)	21.8	58.3		20.1	56.6	150.0	9.6	36.6	36.6	19.0	46.0	44.0
Actuated g/C Ratio	0.15	0.39		0.13	0.38	1.00	0.06	0.24	0.24	0.13	0.31	0.29
Clearance Time (s)	5.0	7.0		5.0	7.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	3.0	3.0	2.5	3.0	3.0
Lane Grp Cap (vph)	498	1366		237	1335	1583	113	863	386	434	1085	464
v/s Ratio Prot	c0.11	c0.16		0.10	0.14		0.03	0.16		c0.10	c0.24	
v/s Ratio Perm						c0.20			0.01			0.06
v/c Ratio	0.73	0.40		0.77	0.38	0.20	0.51	0.65	0.06	0.80	0.79	0.20
Uniform Delay, d1	61.3	33.2		62.7	34.0	0.0	67.9	50.9	43.5	63.7	47.6	39.8
Progression Factor	1.00	1.00		1.16	0.63	1.00	1.00	1.00	1.00	0.91	1.19	3.03
Incremental Delay, d2	5.2	0.9		12.2	0.8	0.3	2.9	1.7	0.1	9.1	3.7	0.2
Delay (s)	66.5	34.1		85.0	22.2	0.3	70.9	52.6	43.6	67.0	60.5	120.9
Level of Service	E	C		F	C	A	E	D	D	E	E	F
Approach Delay (s)		47.0			26.5			53.9			74.7	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	53.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
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	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	845	23	27	730	532	17	30	65	960	8	178
Future Volume (vph)	229	845	23	27	730	532	17	30	65	960	8	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0	2.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.91	0.91	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	0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3221	1616	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3221	1616	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)	249	918	25	29	793	578	18	33	71	1043	9	193
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	66	0	0	0
Lane Group Flow (vph)	249	918	13	29	793	578	18	33	5	699	353	193
Turn Type	Prot	NA	Perm	Prot	NA	Free	Split	NA	Perm	Split	NA	Free
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			Free
Actuated Green, G (s)	24.9	73.5	73.5	5.5	54.1	150.0	8.4	8.4	8.4	39.6	39.6	150.0
Effective Green, g (s)	25.9	75.5	75.5	6.5	56.1	150.0	10.4	10.4	10.4	41.6	41.6	150.0
Actuated g/C Ratio	0.17	0.50	0.50	0.04	0.37	1.00	0.07	0.07	0.07	0.28	0.28	1.00
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	305	1781	796	76	1323	1583	122	129	109	893	448	1583
v/s Ratio Prot	c0.14	0.26		0.02	c0.22		0.01	0.02		0.22	c0.22	
v/s Ratio Perm			0.01			c0.37			0.00			0.12
v/c Ratio	0.82	0.52	0.02	0.38	0.60	0.37	0.15	0.26	0.05	0.78	0.79	0.12
Uniform Delay, d1	59.8	25.0	18.6	69.8	37.9	0.0	65.6	66.1	65.2	50.0	50.1	0.0
Progression Factor	0.89	0.58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	1.0	0.0	3.2	2.0	0.7	0.6	1.1	0.2	4.5	8.9	0.2
Delay (s)	68.1	15.5	18.7	73.0	39.9	0.7	66.2	67.2	65.3	54.6	59.0	0.2
Level of Service	E	B	B	E	D	A	E	E	E	D	E	A
Approach Delay (s)		26.6			24.4			66.0			47.4	
Approach LOS		C			C			E			D	

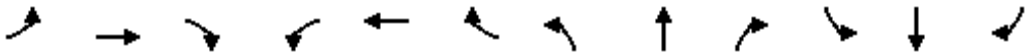
Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	52	29	58	74	876	0	1822	17	576	1760	110
Future Volume (vph)	72	52	29	58	74	876	0	1822	17	576	1760	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		2.0		4.0	2.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	0.88		0.91		0.97	0.91	
Frt	1.00	0.95		1.00	1.00	0.85		1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1711	1703		1711	1801	2694		5167		3319	4872	
Flt Permitted	0.64	1.00		0.61	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (perm)	1147	1703		1098	1801	2694		5167		3319	4872	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	76	55	31	61	78	922	0	1918	18	606	1853	116
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	76	86	0	61	78	922	0	1936	0	606	1966	0
Turn Type	Perm	NA		Perm	NA	pm+ov		NA		Prot	NA	
Protected Phases		4			8	5		6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)	16.5	16.5		16.5	16.5	60.0		71.0		43.5	120.5	
Effective Green, g (s)	19.5	19.5		19.5	19.5	64.0		75.0		45.5	124.5	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.43		0.50		0.30	0.83	
Clearance Time (s)	7.0	7.0		7.0	7.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0	5.0		0.2		5.0	0.2	
Lane Grp Cap (vph)	149	221		142	234	1149		2583		1006	4043	
v/s Ratio Prot		0.05			0.04	c0.24		c0.37		0.18	0.40	
v/s Ratio Perm	0.07			0.06		0.10						
v/c Ratio	0.51	0.39		0.43	0.33	0.80		0.75		0.60	0.49	
Uniform Delay, d1	60.8	59.8		60.1	59.3	37.5		30.0		44.5	3.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		0.85	1.89	
Incremental Delay, d2	5.8	2.4		4.3	1.8	4.7		2.0		1.0	0.3	
Delay (s)	66.6	62.2		64.4	61.1	42.2		32.0		38.8	7.2	
Level of Service	E	E		E	E	D		C		D	A	
Approach Delay (s)		64.2			44.9			32.0			14.6	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.6%	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												
Traffic Volume (vph)	133	5	29	57	2	322	39	2711	20	189	2360	160
Future Volume (vph)	133	5	29	57	2	322	39	2711	20	189	2360	160
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	4.5	4.5	2.5		4.5	2.5	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	*0.90		1.00	0.91	
Frt	1.00	0.87			1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1569			1718	1531	1711	4857		1711	4869	
Flt Permitted	0.71	1.00			0.72	1.00	0.04	1.00		0.04	1.00	
Satd. Flow (perm)	1277	1569			1294	1531	79	4857		75	4869	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	136	5	30	58	2	329	40	2766	20	193	2408	163
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	136	10	0	0	60	329	40	2786	0	193	2568	0
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6			2	2	
Actuated Green, G (s)	22.2	22.2			22.2	40.7	95.3	88.3		114.3	99.8	
Effective Green, g (s)	25.2	25.2			25.2	46.7	101.3	92.3		117.3	103.8	
Actuated g/C Ratio	0.17	0.17			0.17	0.31	0.68	0.62		0.78	0.69	
Clearance Time (s)	7.0	7.0			7.0	7.5	7.5	6.5		7.5	6.5	
Vehicle Extension (s)	5.0	5.0			5.0	5.0	5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)	214	263			217	476	162	2988		293	3369	
v/s Ratio Prot		0.01				c0.10	0.02	c0.57		0.09	c0.53	
v/s Ratio Perm	0.11				0.05	0.12	0.15			0.42		
v/c Ratio	0.64	0.04			0.28	0.69	0.25	0.93		0.66	0.76	
Uniform Delay, d1	58.1	52.3			54.4	45.3	14.5	26.0		48.4	15.1	
Progression Factor	1.00	1.00			1.00	1.00	0.98	0.88		1.00	1.00	
Incremental Delay, d2	8.3	0.1			1.5	5.4	1.1	4.7		7.0	1.7	
Delay (s)	66.4	52.4			55.9	50.8	15.3	27.7		55.4	16.7	
Level of Service	E	D			E	D	B	C		E	B	
Approach Delay (s)		63.6			51.6			27.5			19.4	
Approach LOS		E			D			C			B	

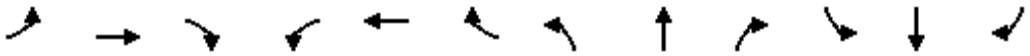
Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	203	42	2089	327	12	1763
Future Volume (vph)	203	42	2089	327	12	1763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		2.5	2.0	2.5	2.5
Lane Util. Factor	0.97		0.91	1.00	1.00	0.91
Frt	0.97		1.00	0.85	1.00	1.00
Flt Protected	0.96		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3268		4916	1531	1711	4916
Flt Permitted	0.96		1.00	1.00	0.06	1.00
Satd. Flow (perm)	3268		4916	1531	115	4916
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	216	45	2222	348	13	1876
RTOR Reduction (vph)	11	0	0	0	0	0
Lane Group Flow (vph)	250	0	2222	348	13	1876
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	3		2 4 9	3		6 4 9
Permitted Phases	3			2 4 9	6 4 9	
Actuated Green, G (s)	20.7		146.8	167.5	146.8	146.8
Effective Green, g (s)	23.7		150.8	170.5	150.8	150.8
Actuated g/C Ratio	0.13		0.84	0.95	0.84	0.84
Clearance Time (s)	6.0			6.0		
Vehicle Extension (s)	4.0			4.0		
Lane Grp Cap (vph)	430		4118	1467	96	4118
v/s Ratio Prot	c0.08		c0.45	0.03		0.38
v/s Ratio Perm				0.19	0.11	
v/c Ratio	0.58		0.54	0.24	0.14	0.46
Uniform Delay, d1	73.5		4.3	0.3	2.7	3.8
Progression Factor	1.00		0.83	1.00	0.54	0.41
Incremental Delay, d2	2.4		0.1	0.1	0.7	0.1
Delay (s)	75.8		3.7	0.4	2.1	1.7
Level of Service	E		A	A	A	A
Approach Delay (s)	75.8		3.3			1.7
Approach LOS	E		A			A

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

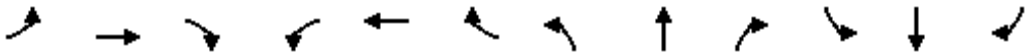
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	16	70	422	25	260	35	1887	219	214	1959	10
Future Volume (vph)	38	16	70	422	25	260	35	1887	219	214	1959	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1800	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	5.0	3.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1801	1531	3113	1573	1531	1711	4584		1711	4912	
Flt Permitted	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	1801	1531	3113	1573	1531	1711	4584		1711	4912	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	39	16	72	435	26	268	36	1945	226	221	2020	10
RTOR Reduction (vph)	0	0	0	0	0	229	0	7	0	0	0	0
Lane Group Flow (vph)	39	16	72	304	157	39	36	2164	0	221	2030	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	5		6	2	
Permitted Phases			3			4						
Actuated Green, G (s)	13.8	13.8	13.8	24.4	24.4	24.4	8.1	93.0		21.3	107.2	
Effective Green, g (s)	15.8	15.8	15.8	26.4	26.4	26.4	11.1	96.0		23.3	109.2	
Actuated g/C Ratio	0.09	0.09	0.09	0.15	0.15	0.15	0.06	0.53		0.13	0.61	
Clearance Time (s)	6.5	6.5	6.5	7.0	7.0	7.0	6.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	150	158	134	456	230	224	105	2444		221	2979	
v/s Ratio Prot	0.02	0.01		0.10	c0.10		0.02	c0.47		c0.13	0.41	
v/s Ratio Perm			c0.05			0.03						
v/c Ratio	0.26	0.10	0.54	0.67	0.68	0.18	0.34	0.89		1.00	0.68	
Uniform Delay, d1	76.6	75.6	78.6	72.6	72.8	67.3	81.0	37.1		78.3	23.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.11	0.49		1.23	1.57	
Incremental Delay, d2	0.9	0.3	4.1	3.7	8.1	0.4	1.7	4.5		56.8	1.1	
Delay (s)	77.6	75.8	82.7	76.3	80.9	67.6	91.5	22.6		152.8	38.4	
Level of Service	E	E	F	E	F	E	F	C		F	D	
Approach Delay (s)		80.3			74.1			23.7			49.6	
Approach LOS		F			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

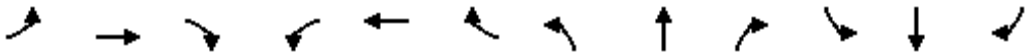
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	0	29	0	0	5	40	2080	1	0	2114	5
Future Volume (vph)	26	0	29	0	0	5	40	2080	1	0	2114	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0		3.0	3.0			3.0	
Lane Util. Factor		1.00			1.00		1.00	0.91			0.91	
Frt		0.93			0.86		1.00	1.00			1.00	
Flt Protected		0.98			1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1633			1558		1711	5174			4914	
Flt Permitted		0.85			1.00		0.07	1.00			1.00	
Satd. Flow (perm)		1418			1558		121	5174			4914	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	0	31	0	0	5	42	2189	1	0	2225	5
RTOR Reduction (vph)	0	18	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	40	0	0	0	0	42	2190	0	0	2230	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		10.1			10.1		156.9	156.9			156.9	
Effective Green, g (s)		10.1			10.1		159.9	159.9			159.9	
Actuated g/C Ratio		0.06			0.06		0.89	0.89			0.89	
Clearance Time (s)		7.0			7.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0			4.0		0.2	0.2			0.2	
Lane Grp Cap (vph)		79			87		107	4596			4365	
v/s Ratio Prot					0.00			0.42			c0.45	
v/s Ratio Perm		c0.03					0.35					
v/c Ratio		0.51			0.00		0.39	0.48			0.51	
Uniform Delay, d1		82.5			80.2		1.7	1.9			2.1	
Progression Factor		1.00			1.00		5.20	4.14			1.66	
Incremental Delay, d2		6.8			0.0		5.7	0.2			0.4	
Delay (s)		89.4			80.2		14.7	8.3			3.8	
Level of Service		F			F		B	A			A	
Approach Delay (s)		89.4			80.2			8.4			3.8	
Approach LOS		F			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

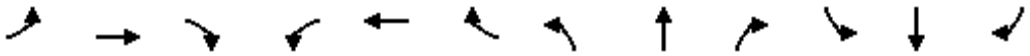
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	4	10	447	0	291	5	2069	37	25	1662	64
Future Volume (vph)	45	4	10	447	0	291	5	2069	37	25	1662	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0		4.0	8.0	4.0	9.0	2.5	4.5	6.0	2.5	
Lane Util. Factor		1.00		0.91	0.91	1.00	1.00	0.86	1.00	0.97	0.91	
Frt		0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.96		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1695		3113	1557	1531	1711	6194	1531	3319	4888	
Flt Permitted		0.96		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1695		3113	1557	1531	1711	6194	1531	3319	4888	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	4	10	461	0	300	5	2133	38	26	1713	66
RTOR Reduction (vph)	0	0	0	0	0	238	0	0	15	0	2	0
Lane Group Flow (vph)	0	60	0	309	152	62	5	2133	23	26	1777	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)		11.7		26.5	26.5	26.5	3.0	105.8	105.8	4.5	107.3	
Effective Green, g (s)		11.7		30.5	26.5	30.5	3.0	109.8	107.8	7.5	111.3	
Actuated g/C Ratio		0.06		0.17	0.15	0.17	0.02	0.61	0.60	0.04	0.62	
Clearance Time (s)		8.0		8.0	8.0	8.0	9.0	6.5	6.5	9.0	6.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	0.2	0.2	3.0	0.2	
Lane Grp Cap (vph)		110		527	229	259	28	3778	916	138	3022	
v/s Ratio Prot		c0.04		c0.10	0.10		0.00	c0.34		0.01	c0.36	
v/s Ratio Perm						0.04			0.01			
v/c Ratio		0.55		0.59	0.66	0.24	0.18	0.56	0.02	0.19	0.59	
Uniform Delay, d1		81.6		68.9	72.5	64.7	87.3	20.9	14.7	83.3	20.6	
Progression Factor		1.00		1.00	1.00	1.00	0.76	0.29	1.00	0.80	1.75	
Incremental Delay, d2		5.4		1.7	7.1	0.5	2.7	0.6	0.0	0.6	0.8	
Delay (s)		87.0		70.6	79.6	65.2	69.4	6.6	14.7	67.2	36.9	
Level of Service		F		E	E	E	E	A	B	E	D	
Approach Delay (s)		87.0			70.3			6.8			37.3	
Approach LOS		F			E			A			D	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

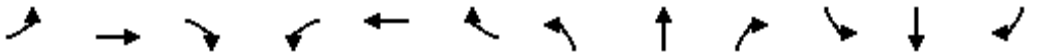
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	17	154	21	427	10	2394	1	8	1596	21
Future Volume (vph)	3	0	17	154	21	427	10	2394	1	8	1596	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0		8.0	8.0		9.0	7.0		9.0	7.0	
Lane Util. Factor		1.00		0.97	1.00		1.00	0.86		0.97	0.91	
Frt		0.89		1.00	0.86		1.00	1.00		1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1582		3319	1543		1711	6194		3319	4906	
Flt Permitted		0.54		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		853		2600	1543		1711	6194		3319	4906	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	3	0	17	157	21	436	10	2443	1	8	1629	21
RTOR Reduction (vph)	0	16	0	0	108	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	4	0	157	349	0	10	2444	0	8	1649	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		34.0		34.0	34.0		3.9	118.6		3.4	118.1	
Effective Green, g (s)		34.0		34.0	34.0		3.9	118.6		3.4	118.1	
Actuated g/C Ratio		0.19		0.19	0.19		0.02	0.66		0.02	0.66	
Clearance Time (s)		8.0		8.0	8.0		9.0	7.0		9.0	7.0	
Vehicle Extension (s)		5.0		5.0	5.0		5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		161		491	291		37	4081		62	3218	
v/s Ratio Prot					c0.23		c0.01	c0.39		0.00	0.34	
v/s Ratio Perm		0.00		0.06								
v/c Ratio		0.02		0.32	1.20		0.27	0.60		0.13	0.51	
Uniform Delay, d1		59.5		63.0	73.0		86.6	17.3		86.8	16.0	
Progression Factor		1.00		1.00	1.00		1.26	0.14		0.99	0.40	
Incremental Delay, d2		0.1		0.8	118.1		6.9	0.6		1.5	0.4	
Delay (s)		59.6		63.8	191.1		115.7	3.1		87.1	6.9	
Level of Service		E		E	F		F	A		F	A	
Approach Delay (s)		59.6			158.6			3.5			7.3	
Approach LOS		E			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

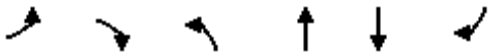
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	200	148	377	129	84	218	2463	264	76	1303	150
Future Volume (vph)	193	200	148	377	129	84	218	2463	264	76	1303	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	3.5	3.5	3.5	6.0	3.5	3.5	6.0	3.5	5.5
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.86	1.00	1.00	0.91	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	0.99	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1557	3237	1531	3113	1618	1531	1711	6194	1531	1711	4916	1531
Flt Permitted	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1557	3237	1531	3113	1618	1531	1711	6194	1531	1711	4916	1531
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	201	208	154	393	134	88	227	2566	275	79	1357	156
RTOR Reduction (vph)	0	0	132	0	0	73	0	0	56	0	0	79
Lane Group Flow (vph)	133	276	22	346	181	15	227	2566	219	79	1357	77
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	3		4	4		1	6	4	5	2	3
Permitted Phases			3			4			6			2
Actuated Green, G (s)	22.0	22.0	22.0	27.2	27.2	27.2	36.0	85.7	112.9	13.6	63.3	85.3
Effective Green, g (s)	26.0	26.0	26.0	31.2	31.2	31.2	39.0	89.7	120.9	16.6	67.3	89.3
Actuated g/C Ratio	0.14	0.14	0.14	0.17	0.17	0.17	0.22	0.50	0.67	0.09	0.37	0.50
Clearance Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	9.0	7.5	7.5	9.0	7.5	7.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2	3.0	3.0	0.2	3.0
Lane Grp Cap (vph)	224	467	221	539	280	265	370	3086	1028	157	1838	806
v/s Ratio Prot	c0.09	0.09		0.11	c0.11		c0.13	c0.41	0.04	0.05	0.28	0.01
v/s Ratio Perm			0.01			0.01			0.11			0.04
v/c Ratio	0.59	0.59	0.10	0.64	0.65	0.06	0.61	0.83	0.21	0.50	0.74	0.10
Uniform Delay, d1	72.1	72.0	66.8	69.2	69.3	62.1	63.7	38.7	11.3	77.8	48.7	24.0
Progression Factor	1.00	1.00	1.00	0.95	0.95	3.06	1.25	0.93	1.67	1.09	0.97	0.69
Incremental Delay, d2	4.2	2.0	0.2	2.6	5.0	0.1	2.4	2.2	0.1	2.5	2.7	0.1
Delay (s)	76.2	74.0	67.1	68.6	71.1	190.4	82.1	38.3	19.0	87.3	49.9	16.7
Level of Service	E	E	E	E	E	F	F	D	B	F	D	B
Approach Delay (s)		72.6			86.7			39.8			48.5	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



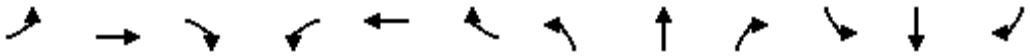
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	171	2357	1029	0
Future Volume (vph)	0	0	171	2357	1029	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	11
Total Lost time (s)			5.5	4.0	8.0	
Lane Util. Factor			0.97	0.91	0.95	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	1.00	
Satd. Flow (prot)			3433	5085	3421	
Flt Permitted			0.95	1.00	1.00	
Satd. Flow (perm)			3433	5085	3421	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	178	2455	1072	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	178	2455	1072	0
Turn Type			Prot	NA	NA	
Protected Phases			1	Free	2	
Permitted Phases					2	
Actuated Green, G (s)			16.5	180.0	150.0	
Effective Green, g (s)			16.5	180.0	150.0	
Actuated g/C Ratio			0.09	1.00	0.83	
Clearance Time (s)			5.5		8.0	
Vehicle Extension (s)			5.0		0.2	
Lane Grp Cap (vph)			314	5085	2850	
v/s Ratio Prot			0.05	0.48	0.31	
v/s Ratio Perm						
v/c Ratio			0.57	0.48	0.38	
Uniform Delay, d1			78.3	0.0	3.6	
Progression Factor			0.92	1.00	1.00	
Incremental Delay, d2			3.4	0.3	0.4	
Delay (s)			75.1	0.3	4.0	
Level of Service			E	A	A	
Approach Delay (s)	0.0			5.4	4.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	9	25	0	20	17	2409	39	26	1383	10
Future Volume (vph)	7	0	9	25	0	20	17	2409	39	26	1383	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	11	11	11
Total Lost time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt		0.93			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1629			1711	1531	1770	5073		1711	4910	
Flt Permitted		0.84			0.75	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406			1343	1531	1770	5073		1711	4910	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	8	0	10	27	0	22	18	2590	42	28	1487	11
RTOR Reduction (vph)	0	17	0	0	0	21	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	27	1	18	2632	0	28	1498	0
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8						
Actuated Green, G (s)		6.8			6.8	6.8	4.0	88.4		6.3	90.7	
Effective Green, g (s)		6.8			6.8	6.8	4.0	88.4		6.3	90.7	
Actuated g/C Ratio		0.06			0.06	0.06	0.03	0.74		0.05	0.76	
Clearance Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		5.0			5.0	5.0	5.0	0.2		5.0	0.2	
Lane Grp Cap (vph)		79			76	86	59	3737		89	3711	
v/s Ratio Prot							0.01	c0.52		c0.02	0.31	
v/s Ratio Perm		0.00			c0.02	0.00						
v/c Ratio		0.01			0.36	0.01	0.31	0.70		0.31	0.40	
Uniform Delay, d1		53.4			54.5	53.4	56.6	8.6		54.8	5.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.97	0.92	
Incremental Delay, d2		0.1			5.9	0.1	6.0	1.1		4.1	0.3	
Delay (s)		53.6			60.4	53.6	62.7	9.8		57.1	5.0	
Level of Service		D			E	D	E	A		E	A	
Approach Delay (s)		53.6			57.3			10.1			6.0	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	69	2374	97	90	1355
Future Volume (vph)	59	69	2374	97	90	1355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	0.91		1.00	0.91
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1711	1531	4887		1711	4916
Flt Permitted	0.95	1.00	1.00		0.04	1.00
Satd. Flow (perm)	1711	1531	4887		81	4916
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	59	69	2374	97	90	1355
RTOR Reduction (vph)	0	64	2	0	0	0
Lane Group Flow (vph)	59	5	2469	0	90	1355
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			6		5	2
Permitted Phases	4	4			2	
Actuated Green, G (s)	9.1	9.1	83.0		97.4	97.4
Effective Green, g (s)	9.1	9.1	83.0		97.4	97.4
Actuated g/C Ratio	0.08	0.08	0.69		0.81	0.81
Clearance Time (s)	7.5	7.5	6.0		6.0	6.0
Vehicle Extension (s)	4.0	4.0	0.2		4.0	0.2
Lane Grp Cap (vph)	129	116	3380		179	3990
v/s Ratio Prot			c0.51		c0.04	0.28
v/s Ratio Perm	c0.03	0.00			0.37	
v/c Ratio	0.46	0.05	0.73		0.50	0.34
Uniform Delay, d1	53.1	51.4	11.5		19.9	2.9
Progression Factor	1.00	1.00	1.23		1.00	1.00
Incremental Delay, d2	3.5	0.2	1.1		3.0	0.2
Delay (s)	56.6	51.6	15.3		22.9	3.2
Level of Service	E	D	B		C	A
Approach Delay (s)	53.9		15.3			4.4
Approach LOS	D		B			A

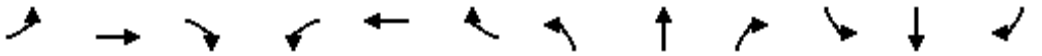
Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	1814	0	0	1749	0	0	0	1108	0	0	707
Future Volume (vph)	0	1814	0	0	1749	0	0	0	1108	0	0	707
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.5			2.0				2.0			3.5
Lane Util. Factor		0.86			0.91				1.00			0.88
Frt		1.00			1.00				0.86			0.85
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		6194			4916				1558			2694
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		6194			4916				1558			2694
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1870	0	0	1803	0	0	0	1142	0	0	729
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1870	0	0	1803	0	0	0	1142	0	0	729
Turn Type		NA			NA				Free			Prot
Protected Phases		2			Free							8
Permitted Phases									Free			8
Actuated Green, G (s)		80.5			180.0				180.0			76.5
Effective Green, g (s)		84.5			180.0				180.0			79.5
Actuated g/C Ratio		0.47			1.00				1.00			0.44
Clearance Time (s)		6.5										6.5
Vehicle Extension (s)		0.2										4.0
Lane Grp Cap (vph)		2907			4916				1558			1189
v/s Ratio Prot		0.30			0.37							0.27
v/s Ratio Perm									c0.73			
v/c Ratio		0.64			0.37				0.73			0.61
Uniform Delay, d1		36.3			0.0				0.0			38.5
Progression Factor		1.00			1.00				1.00			1.00
Incremental Delay, d2		1.1			0.2				3.1			1.1
Delay (s)		37.4			0.2				3.1			39.6
Level of Service		D			A				A			D
Approach Delay (s)		37.4			0.2			3.1			39.6	
Approach LOS		D			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

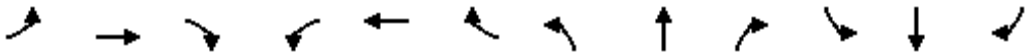
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	458	18	24	435	129	53	359	78	107	267	161
Future Volume (vph)	234	458	18	24	435	129	53	359	78	107	267	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.5	6.5		6.5	6.5	4.0	6.5	6.5		4.0	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3519		1770	1863	1583	1770	1813		1770	1863	1583
Flt Permitted	0.11	1.00		0.46	1.00	1.00	0.58	1.00		0.22	1.00	1.00
Satd. Flow (perm)	210	3519		858	1863	1583	1085	1813		401	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)	254	498	20	26	473	140	58	390	85	116	290	175
RTOR Reduction (vph)	0	2	0	0	0	93	0	7	0	0	0	94
Lane Group Flow (vph)	254	516	0	26	473	47	58	468	0	116	290	81
Turn Type	pm+pt	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	Perm
Protected Phases	3	8			4	1		2		1	6	
Permitted Phases	8			4		4	2			6		6
Actuated Green, G (s)	51.5	51.5		30.0	30.0	39.9	41.6	41.6		55.5	55.5	55.5
Effective Green, g (s)	51.5	51.5		30.0	30.0	39.9	41.6	41.6		55.5	55.5	55.5
Actuated g/C Ratio	0.43	0.43		0.25	0.25	0.33	0.35	0.35		0.46	0.46	0.46
Clearance Time (s)	5.5	6.5		6.5	6.5	4.0	6.5	6.5		4.0	6.5	6.5
Vehicle Extension (s)	3.0	5.0		5.0	5.0	3.0	0.2	0.2		3.0	0.2	0.2
Lane Grp Cap (vph)	298	1510		214	465	526	376	628		298	861	732
v/s Ratio Prot	c0.11	0.15			c0.25	0.01		c0.26		c0.03	0.16	
v/s Ratio Perm	0.25			0.03		0.02	0.05			0.15		0.05
v/c Ratio	0.85	0.34		0.12	1.02	0.09	0.15	0.75		0.39	0.34	0.11
Uniform Delay, d1	31.7	22.9		34.8	45.0	27.5	27.1	34.5		21.7	20.5	18.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	20.3	0.3		0.5	46.1	0.1	0.9	7.9		0.8	1.1	0.3
Delay (s)	52.0	23.2		35.3	91.1	27.6	27.9	42.4		22.5	21.6	18.6
Level of Service	D	C		D	F	C	C	D		C	C	B
Approach Delay (s)		32.7			75.0			40.8			20.9	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

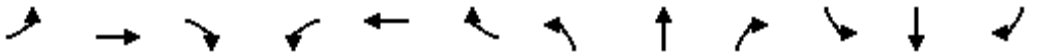
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	27	30	12	103	60	300	1	68	40	171	146	23
Future Volume (vph)	27	30	12	103	60	300	1	68	40	171	146	23
Peak Hour 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
Hourly flow rate (vph)	27	30	12	103	60	300	1	68	40	171	146	23

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total (vph)	69	103	360	109	171	169
Volume Left (vph)	27	103	0	1	171	0
Volume Right (vph)	12	0	300	40	0	23
Hadj (s)	0.01	0.53	-0.55	-0.18	0.53	-0.06
Departure Headway (s)	6.5	6.5	5.4	6.3	6.7	6.1
Degree Utilization, x	0.12	0.19	0.54	0.19	0.32	0.28
Capacity (veh/h)	506	530	645	529	511	562
Control Delay (s)	10.4	9.8	13.3	10.8	11.5	10.3
Approach Delay (s)	10.4	12.5		10.8	10.9	
Approach LOS	B	B		B	B	

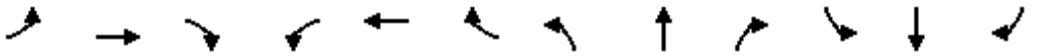
Intersection Summary				
Delay	11.6			
Level of Service	B			
Intersection Capacity Utilization	49.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	378	60	5	484	34	0	1	132	3	5	2
Future Volume (Veh/h)	7	378	60	5	484	34	0	1	132	3	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	7	378	60	5	484	34	0	1	132	3	5	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		175										
pX, platoon unblocked												
vC, conflicting volume	484			438			598	916	219	846	963	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	484			438			598	916	219	846	963	178
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	83	99	98	100
cM capacity (veh/h)	1075			1118			376	268	785	210	251	834

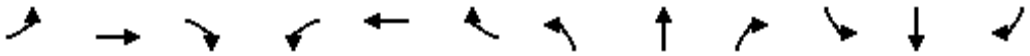
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1	SB 2
Volume Total	196	249	5	194	194	131	133	8	2
Volume Left	7	0	5	0	0	0	0	3	0
Volume Right	0	60	0	0	0	34	132	0	2
cSH	1075	1700	1118	1700	1700	1700	774	234	834
Volume to Capacity	0.01	0.15	0.00	0.11	0.11	0.08	0.17	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	15	3	0
Control Delay (s)	0.4	0.0	8.2	0.0	0.0	0.0	10.6	20.9	9.3
Lane LOS	A		A				B	C	A
Approach Delay (s)	0.2		0.1				10.6	18.6	
Approach LOS							B	C	

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	Err%	ICU Level of Service		H
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	898	126	41	871	132	271	172	18	228	120	84
Future Volume (vph)	80	898	126	41	871	132	271	172	18	228	120	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	1863	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.65	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1214	1863	1583	975	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	976	137	45	947	143	295	187	20	248	130	91
RTOR Reduction (vph)	0	0	76	0	0	87	0	0	15	0	0	63
Lane Group Flow (vph)	87	976	61	45	947	56	295	187	5	248	130	28
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	1	6		5	2		3	8		7	4	1
Permitted Phases			6			2	8		8	4		4
Actuated Green, G (s)	12.6	63.9	63.9	7.1	58.4	58.4	53.9	34.1	34.1	52.1	33.2	45.8
Effective Green, g (s)	12.6	63.9	63.9	7.1	58.4	58.4	53.9	34.1	34.1	52.1	33.2	45.8
Actuated g/C Ratio	0.08	0.43	0.43	0.05	0.39	0.39	0.36	0.23	0.23	0.35	0.22	0.31
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	4.0	0.2	0.2	4.0	0.2	0.2	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	148	1507	674	162	1377	616	509	423	359	438	783	551
v/s Ratio Prot	c0.05	c0.28		0.01	c0.27		c0.08	0.10		0.07	0.04	0.00
v/s Ratio Perm			0.04			0.04	c0.13		0.00	0.13		0.01
v/c Ratio	0.59	0.65	0.09	0.28	0.69	0.09	0.58	0.44	0.01	0.57	0.17	0.05
Uniform Delay, d1	66.2	34.1	25.7	69.0	38.2	29.0	36.9	49.8	44.9	37.3	47.2	36.8
Progression Factor	1.00	1.00	1.00	1.57	0.31	0.16	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	2.2	0.3	1.1	2.4	0.2	1.9	1.0	0.0	2.0	0.5	0.1
Delay (s)	73.1	36.3	26.0	109.2	14.3	4.8	38.9	50.8	44.9	39.3	47.7	36.8
Level of Service	E	D	C	F	B	A	D	D	D	D	D	D
Approach Delay (s)		37.8			16.9			43.5			41.2	
Approach LOS		D			B			D			D	

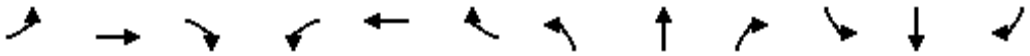
Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	564	252	14	288	42	172	10	12	195	94	82
Future Volume (vph)	21	564	252	14	288	42	172	10	12	195	94	82
Peak Hour 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
Hourly flow rate (vph)	21	564	252	14	288	42	172	10	12	195	94	82

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	303	534	158	186	194	371
Volume Left (vph)	21	0	14	0	172	195
Volume Right (vph)	0	252	0	42	12	82
Hadj (s)	0.07	-0.30	0.08	-0.12	0.17	0.01
Departure Headway (s)	7.7	7.3	8.2	8.0	8.2	7.4
Degree Utilization, x	0.65	1.00	0.36	0.41	0.44	0.76
Capacity (veh/h)	464	534	412	432	411	479
Control Delay (s)	22.4	66.4	14.6	15.3	17.4	29.9
Approach Delay (s)	50.4		15.0		17.4	29.9
Approach LOS	F		B		C	D

Intersection Summary				
Delay	35.4			
Level of Service	E			
Intersection Capacity Utilization	63.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	381	14	5	635	27	12	40	20	18	31	109
Future Volume (Veh/h)	150	381	14	5	635	27	12	40	20	18	31	109
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	150	381	14	5	635	27	12	40	20	18	31	109
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		177										
pX, platoon unblocked												
vC, conflicting volume	662			395			1034	1360	198	1189	1354	225
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	662			395			1034	1360	198	1189	1354	225
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			89	67	98	80	75	86
cM capacity (veh/h)	922			1160			113	123	811	92	124	778

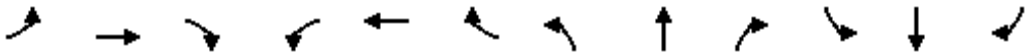
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	340	204	164	318	186	32	40	34	124
Volume Left	150	0	5	0	0	12	0	18	0
Volume Right	0	14	0	0	27	0	20	0	109
cSH	922	1700	1160	1700	1700	119	213	104	469
Volume to Capacity	0.16	0.12	0.00	0.19	0.11	0.27	0.19	0.32	0.27
Queue Length 95th (ft)	14	0	0	0	0	25	17	31	26
Control Delay (s)	5.2	0.0	0.3	0.0	0.0	46.0	25.7	55.0	15.4
Lane LOS	A		A			E	D	F	C
Approach Delay (s)	3.3		0.1			34.7		23.8	
Approach LOS						D		C	

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	48.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	188	409	138	441	220	63
Future Volume (vph)	188	409	138	441	220	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	188	409	138	441	220	63

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	188	409	92	487	241	42
Volume Left (vph)	188	0	0	0	220	0
Volume Right (vph)	0	409	0	441	0	0
Hadj (s)	0.53	-0.67	0.03	-0.60	0.49	0.03
Departure Headway (s)	7.5	6.3	6.9	6.3	7.8	7.3
Degree Utilization, x	0.39	0.71	0.18	0.85	0.52	0.09
Capacity (veh/h)	464	554	501	562	440	466
Control Delay (s)	14.0	22.1	10.2	33.7	17.7	9.8
Approach Delay (s)	19.5		30.0		16.5	
Approach LOS	C		D		C	

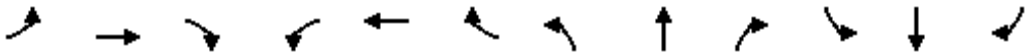
Intersection Summary			
Delay	23.1		
Level of Service	C		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	304	32	23	1	13	12	107	208	8	9	55	120
Future Volume (vph)	304	32	23	1	13	12	107	208	8	9	55	120
Peak Hour 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
Hourly flow rate (vph)	304	32	23	1	13	12	107	208	8	9	55	120

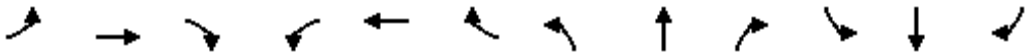
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	320	39	8	19	211	112	37	148
Volume Left (vph)	304	0	1	0	107	0	9	0
Volume Right (vph)	0	23	0	12	0	8	0	120
Hadj (s)	0.51	-0.38	0.10	-0.42	0.29	-0.02	0.16	-0.54
Departure Headway (s)	6.4	5.5	6.5	6.0	6.2	5.9	6.3	5.6
Degree Utilization, x	0.57	0.06	0.01	0.03	0.36	0.18	0.06	0.23
Capacity (veh/h)	544	621	506	548	557	580	537	606
Control Delay (s)	16.3	7.7	8.4	8.0	11.5	9.0	8.5	9.1
Approach Delay (s)	15.3		8.1		10.7		8.9	
Approach LOS	C		A		B		A	

Intersection Summary				
Delay	12.1			
Level of Service	B			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A	
Analysis Period (min)	15			



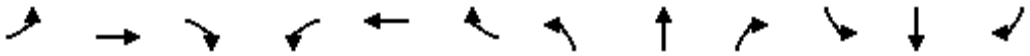
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	1506	192	0	0	0	0	2700	228	0	2102	0
Future Volume (vph)	387	1506	192	0	0	0	0	2700	228	0	2102	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0	5.0					6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00					0.86	1.00		0.86	
Frt	1.00	1.00	0.85					1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1770	5085	1583					6408	1583		6408	
Flt Permitted	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)	1770	5085	1583					6408	1583		6408	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	1637	209	0	0	0	0	2935	248	0	2285	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	40	0	0	0
Lane Group Flow (vph)	421	1637	173	0	0	0	0	2935	208	0	2285	0
Turn Type	Perm	NA	Perm					NA	Perm		NA	
Protected Phases		4						5			2	
Permitted Phases	4		4						5			
Actuated Green, G (s)	59.0	59.0	59.0					97.0	97.0		108.0	
Effective Green, g (s)	61.0	61.0	61.0					97.0	97.0		108.0	
Actuated g/C Ratio	0.34	0.34	0.34					0.54	0.54		0.60	
Clearance Time (s)	7.0	7.0	7.0					6.0	6.0		6.0	
Vehicle Extension (s)	5.0	5.0	5.0					0.2	0.2		0.2	
Lane Grp Cap (vph)	599	1723	536					3453	853		3844	
v/s Ratio Prot		c0.32						c0.46			c0.36	
v/s Ratio Perm	0.24		0.11						0.13			
v/c Ratio	0.70	0.95	0.32					0.85	0.24		0.59	
Uniform Delay, d1	51.6	58.0	44.2					35.3	22.0		22.4	
Progression Factor	1.06	1.06	1.09					1.00	1.00		0.40	
Incremental Delay, d2	4.2	11.3	0.7					2.8	0.7		0.6	
Delay (s)	59.2	72.8	48.8					38.1	22.7		9.5	
Level of Service	E	E	D					D	C		A	
Approach Delay (s)		68.0			0.0			36.9			9.5	
Approach LOS		E			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	180	1426	172	0	3087	0	0	1922	256
Future Volume (vph)	0	0	0	180	1426	172	0	3087	0	0	1922	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)				5.0	5.0	5.0		6.0			6.0	
Lane Util. Factor				1.00	0.86	1.00		0.86			0.86	
Frt				1.00	1.00	0.85		1.00			0.98	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1770	6408	1583		6408			6295	
Flt Permitted				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (perm)				1770	6408	1583		6408			6295	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	196	1550	187	0	3355	0	0	2089	278
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	196	1550	150	0	3355	0	0	2356	0
Turn Type				Perm	NA	Perm		NA			NA	
Protected Phases					4			2			5	
Permitted Phases				4		4						
Actuated Green, G (s)				58.0	58.0	58.0		109.0			109.0	
Effective Green, g (s)				60.0	60.0	60.0		109.0			109.0	
Actuated g/C Ratio				0.33	0.33	0.33		0.61			0.61	
Clearance Time (s)				7.0	7.0	7.0		6.0			6.0	
Vehicle Extension (s)				6.0	6.0	6.0		0.2			0.2	
Lane Grp Cap (vph)				590	2136	527		3880			3811	
v/s Ratio Prot					c0.24			c0.52			0.37	
v/s Ratio Perm				0.11		0.09						
v/c Ratio				0.33	0.73	0.29		0.86			0.62	
Uniform Delay, d1				45.0	52.8	44.2		29.4			22.4	
Progression Factor				0.61	0.66	0.50		0.38			1.34	
Incremental Delay, d2				0.9	1.7	0.8		1.5			0.5	
Delay (s)				28.2	36.6	22.7		12.8			30.4	
Level of Service				C	D	C		B			C	
Approach Delay (s)		0.0			34.4			12.8			30.4	
Approach LOS		A			C			B			C	

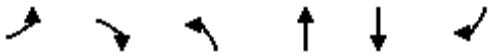
Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	0	20	3	0	32	35	3252	11	30	2336	53
Future Volume (Veh/h)	21	0	20	3	0	32	35	3252	11	30	2336	53
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	21	0	20	3	0	32	35	3252	11	30	2336	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											781	
pX, platoon unblocked	0.63	0.63	0.63	0.63	0.63		0.63					
vC, conflicting volume	3608	5756	805	4186	5776	1090	2389			3263		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3090	6485	0	4004	6519	1090	1162			3263		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	97	0	100	85	91			66		
cM capacity (veh/h)	2	0	686	0	0	210	378			88		

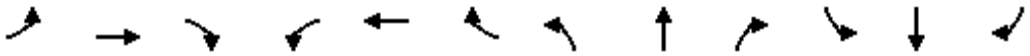
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	41	35	35	1301	1301	661	30	934	934	520
Volume Left	21	3	35	0	0	0	30	0	0	0
Volume Right	20	32	0	0	0	11	0	0	0	53
cSH	4	4	378	1700	1700	1700	88	1700	1700	1700
Volume to Capacity	11.37	7.78	0.09	0.77	0.77	0.39	0.34	0.55	0.55	0.31
Queue Length 95th (ft)	Err	Err	8	0	0	0	33	0	0	0
Control Delay (s)	Err	Err	15.5	0.0	0.0	0.0	65.4	0.0	0.0	0.0
Lane LOS	F	F	C				F			
Approach Delay (s)	Err	Err	0.2				0.8			
Approach LOS	F	F								

Intersection Summary				
Average Delay	131.6			
Intersection Capacity Utilization	78.4%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	28	74	3231	2391	150
Future Volume (vph)	181	28	74	3231	2391	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	5.5	5.5	5.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5040	
Flt Permitted	0.95	1.00	0.03	1.00	1.00	
Satd. Flow (perm)	1770	1583	57	5085	5040	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	30	80	3512	2599	163
RTOR Reduction (vph)	0	25	0	0	3	0
Lane Group Flow (vph)	197	5	80	3512	2759	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4	6			
Actuated Green, G (s)	26.1	26.1	140.9	140.9	123.2	
Effective Green, g (s)	27.1	27.1	142.9	142.9	125.2	
Actuated g/C Ratio	0.15	0.15	0.79	0.79	0.70	
Clearance Time (s)	6.5	6.5	7.5	6.5	6.5	
Vehicle Extension (s)	5.0	5.0	4.0	0.2	0.2	
Lane Grp Cap (vph)	266	238	161	4036	3505	
v/s Ratio Prot	c0.11		0.03	c0.69	0.55	
v/s Ratio Perm		0.00	0.36			
v/c Ratio	0.74	0.02	0.50	0.87	0.79	
Uniform Delay, d1	73.1	65.1	44.4	12.4	18.4	
Progression Factor	1.00	1.00	1.95	0.79	1.27	
Incremental Delay, d2	12.6	0.1	2.1	1.8	1.6	
Delay (s)	85.6	65.2	88.8	11.6	25.0	
Level of Service	F	E	F	B	C	
Approach Delay (s)	82.9			13.3	25.0	
Approach LOS	F			B	C	

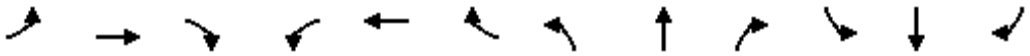
Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	3	104	0	43	0	3405	141	98	2378	1
Future Volume (vph)	4	1	3	104	0	43	0	3405	141	98	2378	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			7.0		7.5	7.0	
Lane Util. Factor		1.00			1.00			0.91		1.00	0.91	
Frt		0.95			0.96			0.99		1.00	1.00	
Flt Protected		0.98			0.97			1.00		0.95	1.00	
Satd. Flow (prot)		1668			1670			4886		1711	4915	
Flt Permitted		0.86			0.79			1.00		0.03	1.00	
Satd. Flow (perm)		1476			1358			4886		52	4915	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	1	3	104	0	43	0	3405	141	98	2378	1
RTOR Reduction (vph)	0	3	0	0	64	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	83	0	0	3544	0	98	2379	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		16.1			16.1			131.7		149.4	149.4	
Effective Green, g (s)		16.1			16.1			131.7		149.4	149.4	
Actuated g/C Ratio		0.09			0.09			0.73		0.83	0.83	
Clearance Time (s)		7.5			7.5			7.0		7.5	7.0	
Vehicle Extension (s)		3.0			3.0			0.2		3.0	0.2	
Lane Grp Cap (vph)		132			121			3574		137	4079	
v/s Ratio Prot								c0.73		0.04	c0.48	
v/s Ratio Perm		0.00			c0.06					0.56		
v/c Ratio		0.04			0.69			0.99		0.72	0.58	
Uniform Delay, d1		74.9			79.5			23.6		66.4	5.0	
Progression Factor		1.00			1.00			0.31		1.01	0.69	
Incremental Delay, d2		0.1			15.1			8.7		13.1	0.5	
Delay (s)		75.0			94.6			16.0		80.1	4.0	
Level of Service		E			F			B		F	A	
Approach Delay (s)		75.0			94.6			16.0			7.0	
Approach LOS		E			F			B			A	

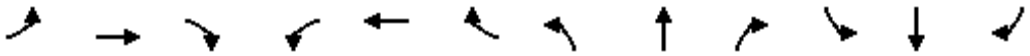
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



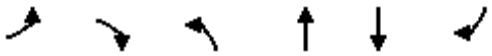
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	8	458	2	9	0	3344	5	5	2274	4
Future Volume (vph)	29	0	8	458	2	9	0	3344	5	5	2274	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.0		5.0	5.0	5.0			4.0		4.0	4.0	
Lane Util. Factor	1.00		1.00	0.91	0.91			0.91		1.00	0.91	
Frt	1.00		0.85	1.00	0.99			1.00		1.00	1.00	
Flt Protected	0.95		1.00	0.95	0.96			1.00		0.95	1.00	
Satd. Flow (prot)	1770		1583	3221	1605			5084		1770	5084	
Flt Permitted	0.38		1.00	0.95	0.96			1.00		0.03	1.00	
Satd. Flow (perm)	701		1583	3221	1605			5084		52	5084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	0	9	498	2	10	0	3635	5	5	2472	4
RTOR Reduction (vph)	0	0	8	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	32	0	1	349	159	0	0	3640	0	5	2476	0
Turn Type	Perm		Perm	Perm	NA			NA		Perm	NA	
Protected Phases					8			6			2	
Permitted Phases	4		4	8						2		
Actuated Green, G (s)	25.8		25.8	25.8	25.8			140.2		140.2	140.2	
Effective Green, g (s)	27.8		27.8	27.8	27.8			143.2		143.2	143.2	
Actuated g/C Ratio	0.15		0.15	0.15	0.15			0.80		0.80	0.80	
Clearance Time (s)	7.0		7.0	7.0	7.0			7.0		7.0	7.0	
Vehicle Extension (s)	5.0		5.0	5.0	5.0			0.2		0.2	0.2	
Lane Grp Cap (vph)	108		244	497	247			4044		41	4044	
v/s Ratio Prot								c0.72			0.49	
v/s Ratio Perm	0.05		0.00	c0.11	0.10					0.10		
v/c Ratio	0.30		0.01	0.70	0.64			0.90		0.12	0.61	
Uniform Delay, d1	67.4		64.4	72.2	71.5			13.2		4.2	7.3	
Progression Factor	1.00		1.00	1.00	1.00			0.81		0.26	0.22	
Incremental Delay, d2	3.2		0.0	5.6	7.7			1.4		4.7	0.5	
Delay (s)	70.6		64.4	77.7	79.1			12.1		5.8	2.1	
Level of Service	E		E	E	E			B		A	A	
Approach Delay (s)		69.3			78.2			12.1			2.1	
Approach LOS		E			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



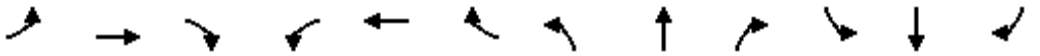
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	22	27	5	7	4	44	3334	4	11	2251	28
Future Volume (vph)	33	22	27	5	7	4	44	3334	4	11	2251	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.5			6.5		6.5	4.0		6.5	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frt		0.96			0.97		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1746			1777		1770	5084		1770	5076	
Flt Permitted		0.86			0.92		0.04	1.00		0.03	1.00	
Satd. Flow (perm)		1533			1660		73	5084		55	5076	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	24	29	5	8	4	48	3624	4	12	2447	30
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	89	0	0	17	0	48	3628	0	12	2477	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		16.6			16.6		145.0	139.0		137.8	135.4	
Effective Green, g (s)		17.6			17.6		147.0	142.0		139.8	138.4	
Actuated g/C Ratio		0.10			0.10		0.82	0.79		0.78	0.77	
Clearance Time (s)		7.5			7.5		7.5	7.0		7.5	7.0	
Vehicle Extension (s)		4.0			4.0		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)		149			162		125	4010		75	3902	
v/s Ratio Prot							c0.01	c0.71		0.00	0.49	
v/s Ratio Perm		c0.06			0.01		0.30			0.12		
v/c Ratio		0.60			0.10		0.38	0.90		0.16	0.63	
Uniform Delay, d1		77.8			74.0		12.1	14.0		33.8	9.4	
Progression Factor		1.00			1.00		1.88	0.33		0.72	0.24	
Incremental Delay, d2		7.3			0.4		0.9	1.8		0.8	0.6	
Delay (s)		85.1			74.4		23.6	6.3		25.0	2.9	
Level of Service		F			E		C	A		C	A	
Approach Delay (s)		85.1			74.4			6.6			3.0	
Approach LOS		F			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	43	42	3044	2248	17
Future Volume (vph)	82	43	42	3044	2248	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	5.5	5.5	7.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5080	
Flt Permitted	0.95	1.00	0.04	1.00	1.00	
Satd. Flow (perm)	1770	1583	76	5085	5080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	47	46	3309	2443	18
RTOR Reduction (vph)	0	43	0	0	0	0
Lane Group Flow (vph)	89	4	46	3309	2461	0
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			1	6	2	
Permitted Phases	4	4	6			
Actuated Green, G (s)	15.3	15.3	151.2	151.2	138.6	
Effective Green, g (s)	16.3	16.3	151.2	154.2	141.6	
Actuated g/C Ratio	0.09	0.09	0.84	0.86	0.79	
Clearance Time (s)	6.5	6.5	7.0	7.0	7.0	
Vehicle Extension (s)	4.0	4.0	3.0	0.2	0.2	
Lane Grp Cap (vph)	160	143	116	4356	3996	
v/s Ratio Prot			0.01	c0.65	0.48	
v/s Ratio Perm	c0.05	0.00	0.32			
v/c Ratio	0.56	0.03	0.40	0.76	0.62	
Uniform Delay, d1	78.4	74.6	10.8	5.3	7.9	
Progression Factor	1.00	1.00	2.35	0.81	1.00	
Incremental Delay, d2	5.1	0.1	1.1	0.6	0.7	
Delay (s)	83.5	74.8	26.4	4.9	8.7	
Level of Service	F	E	C	A	A	
Approach Delay (s)	80.5			5.2	8.7	
Approach LOS	F			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

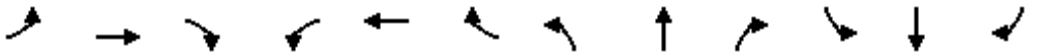


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	26	8	45	10	16	27	3502	213	340	2128	33
Future Volume (vph)	31	26	8	45	10	16	27	3502	213	340	2128	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.5	6.5	6.5	6.5		7.5	4.0	4.0	7.5	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt		1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1813	1583	1770	1693		1770	5085	1583	1770	5085	1583
Flt Permitted		0.81	1.00	0.72	1.00		0.07	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)		1516	1583	1335	1693		125	5085	1583	78	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	28	9	49	11	17	29	3807	232	370	2313	36
RTOR Reduction (vph)	0	0	8	0	16	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	62	1	49	12	0	29	3807	232	370	2313	28
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)		10.1	10.1	10.1	10.1		91.4	87.7	87.7	125.4	114.2	114.2
Effective Green, g (s)		11.1	11.1	11.1	11.1		91.4	90.7	90.7	125.4	117.2	117.2
Actuated g/C Ratio		0.07	0.07	0.07	0.07		0.61	0.60	0.60	0.84	0.78	0.78
Clearance Time (s)		7.5	7.5	7.5	7.5		7.5	7.0	7.0	7.5	7.0	7.0
Vehicle Extension (s)		3.0	3.0	5.0	5.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		112	117	98	125		116	3074	957	405	3973	1236
v/s Ratio Prot					0.01		0.01	c0.75		c0.18	0.45	
v/s Ratio Perm		c0.04	0.00	0.04			0.14		0.15	0.58		0.02
v/c Ratio		0.55	0.01	0.50	0.10		0.25	1.24	0.24	0.91	0.58	0.02
Uniform Delay, d1		67.1	64.3	66.8	64.8		14.9	29.6	13.7	53.0	6.6	3.7
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.8	0.0	8.2	0.7		1.1	110.3	0.6	24.6	0.6	0.0
Delay (s)		72.9	64.4	74.9	65.5		16.0	139.9	14.3	77.6	7.2	3.7
Level of Service		E	E	E	E		B	F	B	E	A	A
Approach Delay (s)		71.8			71.5			131.9			16.7	
Approach LOS		E			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	85.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

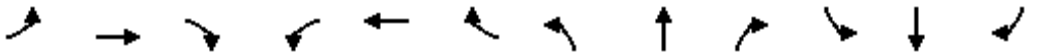
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	350	136	3174	375	70	2151
Future Volume (vph)	350	136	3174	375	70	2151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	6.0	5.0	4.0	4.0	6.0	4.0
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5085	2787	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5085	2787	1770	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	148	3450	408	76	2338
RTOR Reduction (vph)	0	0	0	107	0	0
Lane Group Flow (vph)	380	148	3450	301	76	2338
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	4	5	6	4	5	2
Permitted Phases		4		6		
Actuated Green, G (s)	27.9	61.0	99.0	126.9	33.1	138.1
Effective Green, g (s)	28.9	63.0	102.0	132.9	33.1	141.1
Actuated g/C Ratio	0.16	0.35	0.57	0.74	0.18	0.78
Clearance Time (s)	7.0	6.0	7.0	7.0	6.0	7.0
Vehicle Extension (s)	4.0	5.0	5.0	4.0	5.0	5.0
Lane Grp Cap (vph)	551	554	2881	2119	325	3986
v/s Ratio Prot	c0.11	0.05	c0.68	0.02	0.04	c0.46
v/s Ratio Perm		0.04		0.08		
v/c Ratio	0.69	0.27	1.20	0.14	0.23	0.59
Uniform Delay, d1	71.3	41.9	39.0	6.9	62.6	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.4	92.5	0.0	1.7	0.6
Delay (s)	75.2	42.3	131.5	6.9	64.3	8.4
Level of Service	E	D	F	A	E	A
Approach Delay (s)	66.0		118.3			10.2
Approach LOS	E		F			B

Intersection Summary			
HCM 2000 Control Delay	75.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.6%	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												
Traffic Volume (vph)	15	128	98	398	170	188	194	2809	307	110	1725	99
Future Volume (vph)	15	128	98	398	170	188	194	2809	307	110	1725	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91		0.97	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1610	3124		3433	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1610	3124		3433	5085	1583	80	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	139	107	433	185	204	211	3053	334	120	1875	108
RTOR Reduction (vph)	0	0	45	0	114	0	0	0	92	0	0	39
Lane Group Flow (vph)	16	139	62	433	275	0	211	3053	242	120	1875	69
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	3	6	4	4		6	2		1	5	
Permitted Phases			3						2	5		5
Actuated Green, G (s)	10.0	10.0	28.0	30.0	30.0		18.0	100.1	100.1	106.9	93.0	93.0
Effective Green, g (s)	11.0	11.0	34.0	31.0	31.0		21.0	103.1	103.1	106.9	96.0	96.0
Actuated g/C Ratio	0.06	0.06	0.19	0.18	0.18		0.12	0.59	0.59	0.61	0.55	0.55
Clearance Time (s)	5.0	5.0	7.0	5.0	5.0		7.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		3.0	0.2	0.2	4.0	0.2	0.2
Lane Grp Cap (vph)	111	117	307	285	553		411	2995	932	183	2789	868
v/s Ratio Prot	0.01	c0.07	0.02	c0.27	0.09		0.06	c0.60		c0.05	0.37	
v/s Ratio Perm			0.01						0.15	0.35		0.04
v/c Ratio	0.14	1.19	0.20	1.52	0.50		0.51	1.02	0.26	0.66	0.67	0.08
Uniform Delay, d1	77.5	82.0	59.1	72.0	65.0		72.2	36.0	17.4	51.3	28.2	18.6
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	0.8	142.4	0.4	250.9	1.0		4.5	21.5	0.7	9.0	1.3	0.2
Delay (s)	78.4	224.4	59.6	322.9	65.9		76.7	57.5	18.1	60.3	29.6	18.8
Level of Service	E	F	E	F	E		E	E	B	E	C	B
Approach Delay (s)		148.2			201.3			54.9			30.8	
Approach LOS		F			F			D			C	

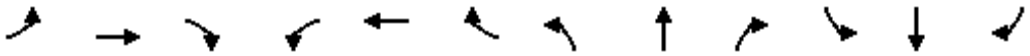
Intersection Summary			
HCM 2000 Control Delay	68.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	175.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	900	37	154	927	707	29	0	82	544	0	88
Future Volume (vph)	229	900	37	154	927	707	29	0	82	544	0	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	9.0		7.0	9.0	9.0	8.5		8.5	8.0		8.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00		0.88	0.97		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3319	3401		3319	3421	1531	1711		2694	3319		1531
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3319	3401		3319	3421	1531	1711		2694	3319		1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	229	900	37	154	927	707	29	0	82	544	0	88
RTOR Reduction (vph)	0	2	0	0	0	381	0	0	69	0	0	72
Lane Group Flow (vph)	229	935	0	154	927	326	29	0	13	544	0	16
Turn Type	Prot	NA		Prot	NA	Perm	Prot		pt+ov	Prot		Perm
Protected Phases	1	6		5	2		3		3 5	4		
Permitted Phases						2						4
Actuated Green, G (s)	14.9	66.1		14.1	65.3	65.3	9.9		24.0	27.4		27.4
Effective Green, g (s)	14.9	66.1		14.1	65.3	65.3	9.9		24.0	27.4		27.4
Actuated g/C Ratio	0.10	0.44		0.09	0.44	0.44	0.07		0.16	0.18		0.18
Clearance Time (s)	7.0	9.0		7.0	9.0	9.0	8.5			8.0		8.0
Vehicle Extension (s)	6.0	0.2		6.0	0.2	0.2	6.0			6.0		6.0
Lane Grp Cap (vph)	329	1498		311	1489	666	112		431	606		279
v/s Ratio Prot	c0.07	c0.28		0.05	0.27		c0.02		0.00	c0.16		
v/s Ratio Perm						0.21						0.01
v/c Ratio	0.70	0.62		0.50	0.62	0.49	0.26		0.03	0.90		0.06
Uniform Delay, d1	65.4	32.4		64.6	32.8	30.4	66.6		53.2	59.9		50.6
Progression Factor	0.92	1.18		1.17	0.68	0.54	1.00		1.00	1.00		1.00
Incremental Delay, d2	7.5	1.6		2.7	1.5	2.0	3.4		0.1	17.5		0.2
Delay (s)	67.5	39.7		78.4	23.8	18.4	70.0		53.3	77.4		50.9
Level of Service	E	D		E	C	B	E		D	E		D
Approach Delay (s)		45.2			26.4			57.6			73.7	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	41.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

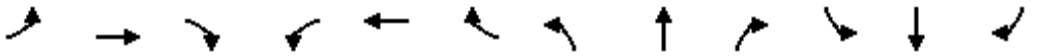
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	45	165	106	21	32	68	3111	166	23	2323	94
Future Volume (vph)	111	45	165	106	21	32	68	3111	166	23	2323	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		7.0	7.0		6.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.86		1.00	0.86	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	1801	1531	1711	1638		3319	6147		1711	6158	
Flt Permitted	0.72	1.00	1.00	0.73	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1301	1801	1531	1310	1638		3319	6147		1711	6158	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	111	45	165	106	21	32	68	3111	166	23	2323	94
RTOR Reduction (vph)	0	0	146	0	28	0	0	4	0	0	2	0
Lane Group Flow (vph)	111	45	19	106	25	0	68	3273	0	23	2415	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		6	2		1	5	
Permitted Phases	4		4	8								
Actuated Green, G (s)	21.1	21.1	21.1	21.1	21.1		21.0	110.0		29.9	117.9	
Effective Green, g (s)	21.1	21.1	21.1	21.1	21.1		21.0	110.0		29.9	117.9	
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12		0.12	0.61		0.17	0.66	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		7.0	7.0		6.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	152	211	179	153	192		387	3756		284	4033	
v/s Ratio Prot		0.02			0.02		0.02	c0.53		0.01	c0.39	
v/s Ratio Perm	c0.09		0.01	0.08								
v/c Ratio	0.73	0.21	0.11	0.69	0.13		0.18	0.87		0.08	0.60	
Uniform Delay, d1	76.7	71.9	71.0	76.3	71.2		71.7	29.1		63.4	17.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.33	0.88	
Incremental Delay, d2	16.4	0.5	0.3	12.7	0.3		1.0	3.1		0.4	0.5	
Delay (s)	93.1	72.4	71.3	89.1	71.5		72.7	32.2		85.0	16.0	
Level of Service	F	E	E	F	E		E	C		F	B	
Approach Delay (s)		79.0			83.2			33.0			16.7	
Approach LOS		E			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	290	65	67	146	111	99	3076	79	0	2308	0
Future Volume (vph)	408	290	65	67	146	111	99	3076	79	0	2308	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.0			7.0	
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.86			0.81	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00			1.00	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1557	3216	1531	1557	3270	1531	1711	6171			7293	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)	1557	3216	1531	1557	3270	1531	1711	6171			7293	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	408	290	65	67	146	111	99	3076	79	0	2308	0
RTOR Reduction (vph)	0	0	53	0	0	102	0	2	0	0	0	0
Lane Group Flow (vph)	228	470	12	60	153	9	99	3153	0	0	2308	0
Turn Type	Split	NA	Prot	Split	NA	Prot	Prot	NA			NA	
Protected Phases	3	3	3	4	4	4	1	6			2	
Permitted Phases												
Actuated Green, G (s)	33.4	33.4	33.4	14.7	14.7	14.7	15.6	107.9			83.8	
Effective Green, g (s)	33.4	33.4	33.4	14.7	14.7	14.7	15.6	107.9			83.8	
Actuated g/C Ratio	0.19	0.19	0.19	0.08	0.08	0.08	0.09	0.60			0.47	
Clearance Time (s)	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.0			7.0	
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	0.2			0.2	
Lane Grp Cap (vph)	288	596	284	127	267	125	148	3699			3395	
v/s Ratio Prot	c0.15	0.15	0.01	0.04	c0.05	0.01	0.06	c0.51			0.32	
v/s Ratio Perm												
v/c Ratio	0.79	0.79	0.04	0.47	0.57	0.07	0.67	0.85			0.68	
Uniform Delay, d1	70.0	69.9	60.2	78.9	79.6	76.4	79.7	29.5			37.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.68	2.14			1.00	
Incremental Delay, d2	14.5	7.2	0.1	3.7	3.5	0.3	7.5	1.4			1.1	
Delay (s)	84.5	77.2	60.3	82.7	83.2	76.7	61.3	64.5			38.7	
Level of Service	F	E	E	F	F	E	E	E			D	
Approach Delay (s)		77.9			80.9			64.4			38.7	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group