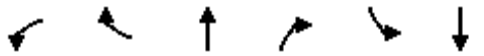
APPENDIX E: INTERSECTION LOS ANALYSIS WORKSHEETS

NO.	CROSS STREET(S)	INTID
1	16th St	N/A
2	W Grand Ave	79
3	25th St/ West St	78
4	27th St	77
5	Market St/ 30th St	576 520 76
6	Adeline St	73
7	40th St	72
8	Stanford Ave	67
9	Ashby Ave	64
10	Dwight Way	62
11	University Ave	59
12	Delaware St	58
13	Gilman St	56
14	Marin Ave	54
15	Solano Ave	52
16	Carlson Ave	48
17	Fairmount Ave	47
18	Central Ave	46
19	Potrero Ave	41
20	Cutting Blvd	39
21	Macdonald Ave	37
22	Barrett Ave	36
23	Solano Ave	33
24	McBryde Ave	30
25	San Pablo Dam Rd	27
26	Church Ln	25
27	Rd 20/ 23rd St	23
28	Broadway Ave/ El Portal Dr	21
29	Robert Miller Dr	18



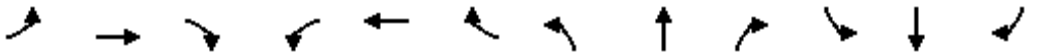
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	615	37	467	511	76	0
Future Volume (vph)	615	37	467	511	76	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.3		3.5	
Lane Util. Factor	0.97		0.95		1.00	
Frpb, ped/bikes	1.00		0.99		1.00	
Flpb, ped/bikes	1.00		1.00		1.00	
Frt	0.99		0.92		1.00	
Flt Protected	0.95		1.00		0.95	
Satd. Flow (prot)	3417		3240		1770	
Flt Permitted	0.95		1.00		0.95	
Satd. Flow (perm)	3417		3240		1770	
Peak-hour factor, PHF	0.86	0.86	0.91	0.91	0.80	0.80
Adj. Flow (vph)	715	43	513	562	95	0
RTOR Reduction (vph)	9	0	313	0	0	0
Lane Group Flow (vph)	749	0	762	0	95	0
Confl. Peds. (#/hr)				1	1	
Confl. Bikes (#/hr)		2				
Turn Type	Prot		NA		Prot	
Protected Phases	3		2		1	
Permitted Phases						
Actuated Green, G (s)	9.0		22.6		5.6	
Effective Green, g (s)	9.0		22.6		5.6	
Actuated g/C Ratio	0.18		0.44		0.11	
Clearance Time (s)	5.0		5.3		3.5	
Vehicle Extension (s)	3.0		5.0		3.0	
Lane Grp Cap (vph)	603		1435		194	
v/s Ratio Prot	c0.22		c0.24		c0.05	
v/s Ratio Perm						
v/c Ratio	1.24		0.53		0.49	
Uniform Delay, d1	21.0		10.3		21.4	
Progression Factor	1.00		1.28		1.00	
Incremental Delay, d2	122.5		1.1		1.9	
Delay (s)	143.5		14.4		23.3	
Level of Service	F		B		C	
Approach Delay (s)	143.5		14.4			23.3
Approach LOS	F		B			C

Intersection Summary			
HCM 2000 Control Delay	65.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	530	110	78	285	79	140	352	104	206	673	18
Future Volume (vph)	21	530	110	78	285	79	140	352	104	206	673	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.5	4.0	4.0	4.5	6.0	4.5	4.5	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		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)	1757	3436		1770	3539	1545	1770	3539	1561	1770	3539	1545
Flt Permitted	0.51	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	938	3436		1770	3539	1545	1770	3539	1561	1770	3539	1545
Peak-hour factor, PHF	0.81	0.81	0.81	0.68	0.68	0.68	0.91	0.91	0.91	0.79	0.79	0.79
Adj. Flow (vph)	26	654	136	115	419	116	154	387	114	261	852	23
RTOR Reduction (vph)	0	18	0	0	0	70	0	0	43	0	0	15
Lane Group Flow (vph)	26	772	0	115	419	46	154	387	71	261	852	8
Confl. Peds. (#/hr)	9		8	8		9	11		5	5		11
Turn Type	Perm	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases		4		3	8		5	2	3	1	6	
Permitted Phases	4					8			2			6
Actuated Green, G (s)	26.6	26.6		9.2	40.3	40.3	12.7	30.5	39.7	16.7	34.5	34.5
Effective Green, g (s)	26.6	26.6		9.2	40.3	40.3	12.7	30.5	39.7	16.7	34.5	34.5
Actuated g/C Ratio	0.26	0.26		0.09	0.40	0.40	0.12	0.30	0.39	0.16	0.34	0.34
Clearance Time (s)	4.0	4.0		4.5	4.0	4.0	4.5	6.0	4.5	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5		2.0	2.5	2.5	2.0	6.0	2.0	2.0	6.0	6.0
Lane Grp Cap (vph)	244	896		159	1398	610	220	1058	607	289	1197	522
v/s Ratio Prot		c0.22		c0.06	0.12		0.09	0.11	0.01	c0.15	c0.24	
v/s Ratio Perm	0.03					0.03			0.03			0.01
v/c Ratio	0.11	0.86		0.72	0.30	0.08	0.70	0.37	0.12	0.90	0.71	0.01
Uniform Delay, d1	28.7	35.9		45.2	21.2	19.2	42.8	28.1	19.9	41.9	29.4	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.25	1.45	0.96	1.49	0.67	1.00
Incremental Delay, d2	0.1	8.5		12.9	0.1	0.0	7.2	0.9	0.0	26.3	3.2	0.0
Delay (s)	28.8	44.4		58.0	21.3	19.3	60.8	41.6	19.2	88.6	22.8	22.5
Level of Service	C	D		E	C	B	E	D	B	F	C	C
Approach Delay (s)		43.9			27.4			42.2			37.9	
Approach LOS		D			C			D			D	

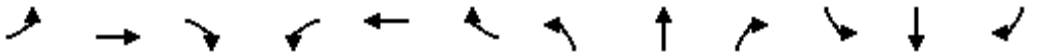
Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	339	242	64	35	231	71	80	236	66	57	540	447
Future Volume (vph)	339	242	64	35	231	71	80	236	66	57	540	447
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	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82		1.00	0.99	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1756	1291		1850	1562	1770	3393		1770	3539	1466
Flt Permitted	0.95	0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1756	1291		1850	1562	1770	3393		1770	3539	1466
Peak-hour factor, PHF	0.87	0.87	0.87	0.75	0.75	0.75	0.75	0.75	0.75	0.82	0.82	0.82
Adj. Flow (vph)	390	278	74	47	308	95	107	315	88	70	659	545
RTOR Reduction (vph)	0	0	48	0	0	71	0	12	0	0	0	210
Lane Group Flow (vph)	339	329	26	0	355	24	107	391	0	70	659	335
Confl. Peds. (#/hr)			79	79			45		5	5		45
Confl. Bikes (#/hr)						2						
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	41.2	41.2	55.8		40.6	40.6	14.6	44.6		9.9	39.9	81.1
Effective Green, g (s)	41.2	41.2	55.8		40.6	40.6	14.6	44.6		9.9	39.9	81.1
Actuated g/C Ratio	0.26	0.26	0.35		0.25	0.25	0.09	0.28		0.06	0.25	0.51
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		3.0	3.0	2.0	6.0		2.0	6.0	2.0
Lane Grp Cap (vph)	432	451	449		468	395	161	944		109	880	796
v/s Ratio Prot	c0.20	0.19	0.01		c0.19		c0.06	c0.12		0.04	c0.19	0.11
v/s Ratio Perm			0.02			0.02						0.12
v/c Ratio	0.78	0.73	0.06		0.76	0.06	0.66	0.41		0.64	0.75	0.42
Uniform Delay, d1	55.4	54.5	34.8		55.3	45.4	70.5	47.2		73.5	55.6	24.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.4	5.0	0.0		6.9	0.1	7.8	0.8		9.3	4.7	0.1
Delay (s)	63.8	59.4	34.8		62.2	45.5	78.2	48.0		82.8	60.3	25.0
Level of Service	E	E	C		E	D	E	D		F	E	C
Approach Delay (s)		59.0			58.7			54.4			46.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	160.3	Sum of lost time (s)	30.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	316	271	226	333	60	152	356	177	56	592	42
Future Volume (vph)	17	316	271	226	333	60	152	356	177	56	592	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.1		4.0	4.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1529	1770	1809		1770	3303		1770	3497	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1529	1770	1809		1770	3303		1770	3497	
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.83	0.83	0.83	0.83	0.83	0.81	0.81	0.81
Adj. Flow (vph)	18	343	295	272	401	72	183	429	213	69	731	52
RTOR Reduction (vph)	0	0	54	0	5	0	0	48	0	0	4	0
Lane Group Flow (vph)	18	343	241	272	468	0	183	594	0	69	779	0
Confl. Peds. (#/hr)	23		17	17		23	5		13	13		5
Confl. Bikes (#/hr)						2			1			
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	3.2	27.3	43.0	20.1	44.2		15.7	43.6		7.9	35.8	
Effective Green, g (s)	3.2	27.3	43.0	20.1	44.2		15.7	43.6		7.9	35.8	
Actuated g/C Ratio	0.03	0.24	0.37	0.17	0.38		0.14	0.38		0.07	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.1		4.0	4.1	
Vehicle Extension (s)	3.0	3.0	2.0	3.0	2.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	49	442	624	309	695		241	1252		121	1088	
v/s Ratio Prot	0.01	c0.18	0.05	c0.15	0.26		c0.10	0.18		0.04	c0.22	
v/s Ratio Perm			0.11									
v/c Ratio	0.37	0.78	0.39	0.88	0.67		0.76	0.47		0.57	0.72	
Uniform Delay, d1	54.9	41.0	26.3	46.3	29.4		47.8	27.0		51.9	35.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.26	0.94	
Incremental Delay, d2	4.6	8.3	0.1	24.0	2.0		11.5	1.3		3.8	3.9	
Delay (s)	59.5	49.3	26.5	70.2	31.4		59.3	28.3		69.0	36.8	
Level of Service	E	D	C	E	C		E	C		E	D	
Approach Delay (s)		39.3			45.6			35.2			39.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

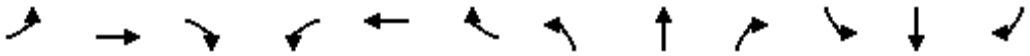
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	8	1	571	60	263	15	317	270	265	742	8
Future Volume (vph)	3	8	1	571	60	263	15	317	270	265	742	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		5.0	5.0		5.0	5.0	5.0	4.5	5.0	
Lane Util. Factor		0.95		0.91	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.98		1.00	0.93		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3433		1610	3092		1770	3539	1550	1770	3532	
Flt Permitted		0.99		0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3433		1610	3092		1770	3539	1550	1770	3532	
Peak-hour factor, PHF	0.60	0.60	0.60	0.92	0.92	0.92	0.86	0.86	0.86	0.93	0.93	0.93
Adj. Flow (vph)	5	13	2	621	65	286	17	369	314	285	798	9
RTOR Reduction (vph)	0	2	0	0	125	0	0	0	126	0	0	0
Lane Group Flow (vph)	0	18	0	335	512	0	17	369	188	285	807	0
Confl. Peds. (#/hr)			9	9			16		12	12		16
Confl. Bikes (#/hr)									6			
Turn Type	Split	NA		Split	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases									2			
Actuated Green, G (s)		5.3		28.6	28.6		2.8	40.4	69.0	22.2	59.3	
Effective Green, g (s)		5.3		28.6	28.6		2.8	40.4	69.0	22.2	59.3	
Actuated g/C Ratio		0.05		0.25	0.25		0.02	0.35	0.60	0.19	0.52	
Clearance Time (s)		4.0		5.0	5.0		5.0	5.0	5.0	4.5	5.0	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	5.0	2.0	2.0	5.0	
Lane Grp Cap (vph)		158		400	768		43	1243	930	341	1821	
v/s Ratio Prot		c0.01		c0.21	0.17		0.01	c0.10	0.05	c0.16	c0.23	
v/s Ratio Perm									0.07			
v/c Ratio		0.11		0.84	0.67		0.40	0.30	0.20	0.84	0.44	
Uniform Delay, d1		52.6		41.0	38.9		55.3	27.0	10.5	44.6	17.5	
Progression Factor		1.00		0.87	0.87		0.84	0.78	4.90	0.60	0.54	
Incremental Delay, d2		0.1		12.7	1.6		2.1	0.6	0.0	7.1	0.3	
Delay (s)		52.7		48.4	35.5		48.6	21.7	51.4	34.0	9.7	
Level of Service		D		D	D		D	C	D	C	A	
Approach Delay (s)		52.7			39.9			35.6			16.1	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	95	73	123	94	165	26	356	62	127	1017	59
Future Volume (vph)	44	95	73	123	94	165	26	356	62	127	1017	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	3.5	4.0		3.5	4.0	
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.99		0.95	0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3280		1681	1757	1543	1770	3440		1770	3510	
Flt Permitted		0.99		0.95	0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3280		1681	1757	1543	1770	3440		1770	3510	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	54	116	89	150	115	201	28	387	67	137	1094	63
RTOR Reduction (vph)	0	64	0	0	0	173	0	9	0	0	3	0
Lane Group Flow (vph)	0	195	0	130	135	28	28	445	0	137	1154	0
Confl. Peds. (#/hr)	10		18	18		10			23	23		
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		16.2		16.0	16.0	16.0	5.0	53.4		13.9	62.3	
Effective Green, g (s)		16.2		16.0	16.0	16.0	5.0	53.4		13.9	62.3	
Actuated g/C Ratio		0.14		0.14	0.14	0.14	0.04	0.46		0.12	0.54	
Clearance Time (s)		4.0		4.0	4.0	4.0	3.5	4.0		3.5	4.0	
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		462		233	244	214	76	1597		213	1901	
v/s Ratio Prot		c0.06		c0.08	0.08		0.02	0.13		c0.08	c0.33	
v/s Ratio Perm						0.02						
v/c Ratio		0.42		0.56	0.55	0.13	0.37	0.28		0.64	0.61	
Uniform Delay, d1		45.1		46.2	46.2	43.4	53.5	18.9		48.2	18.0	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		0.91	1.41	
Incremental Delay, d2		0.8		3.5	3.3	0.4	3.0	0.4		5.3	1.2	
Delay (s)		46.0		49.7	49.5	43.8	56.5	19.4		49.3	26.5	
Level of Service		D		D	D	D	E	B		D	C	
Approach Delay (s)		46.0			47.1			21.5			28.9	
Approach LOS		D			D			C			C	

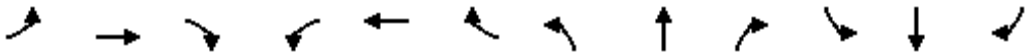
Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	206	93	164	197	74	27	322	96	96	1121	58
Future Volume (vph)	97	206	93	164	197	74	27	322	96	96	1121	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.97		1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.97	1.00		0.95	1.00		1.00	1.00		0.98	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1720	1719		1688	1753		1767	3372		1738	3507	
Flt Permitted	0.38	1.00		0.37	1.00		0.13	1.00		0.44	1.00	
Satd. Flow (perm)	684	1719		659	1753		243	3372		812	3507	
Peak-hour factor, PHF	0.87	0.87	0.87	0.80	0.80	0.80	0.82	0.82	0.82	0.90	0.90	0.90
Adj. Flow (vph)	111	237	107	205	246	92	33	393	117	107	1246	64
RTOR Reduction (vph)	0	22	0	0	19	0	0	31	0	0	4	0
Lane Group Flow (vph)	111	322	0	205	320	0	33	479	0	107	1306	0
Confl. Peds. (#/hr)	58		97	97		58	7		18	18		7
Confl. Bikes (#/hr)			4			5			1			3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	26.3	26.3		26.3	26.3		45.7	45.7		45.7	45.7	
Effective Green, g (s)	26.3	26.3		26.3	26.3		45.7	45.7		45.7	45.7	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.57	0.57		0.57	0.57	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	224	565		216	576		138	1926		463	2003	
v/s Ratio Prot		0.19			0.18			0.14			c0.37	
v/s Ratio Perm	0.16			c0.31			0.14			0.13		
v/c Ratio	0.50	0.57		0.95	0.56		0.24	0.25		0.23	0.65	
Uniform Delay, d1	21.5	22.2		26.2	22.1		8.5	8.6		8.5	11.7	
Progression Factor	1.00	1.00		1.00	1.00		0.90	0.85		0.70	0.76	
Incremental Delay, d2	1.7	1.3		46.4	1.2		4.0	0.3		1.1	1.5	
Delay (s)	23.3	23.5		72.6	23.2		11.7	7.6		7.0	10.5	
Level of Service	C	C		E	C		B	A		A	B	
Approach Delay (s)		23.4			41.8			7.8			10.2	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

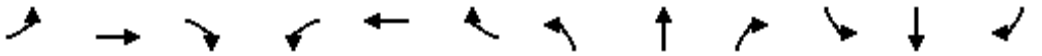
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	173	200	61	173	158	55	397	24	105	706	85
Future Volume (vph)	380	173	200	61	173	158	55	397	24	105	706	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.0		3.5	4.0		3.5	4.0	
Lane Util. Factor	0.97	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.93		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1698		1770	3286		1770	3503		1770	3473	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1698		1770	3286		1770	3503		1770	3473	
Peak-hour factor, PHF	0.91	0.91	0.91	0.74	0.74	0.74	0.87	0.87	0.87	0.90	0.90	0.90
Adj. Flow (vph)	418	190	220	82	234	214	63	456	28	117	784	94
RTOR Reduction (vph)	0	44	0	0	175	0	0	4	0	0	8	0
Lane Group Flow (vph)	418	366	0	82	273	0	63	480	0	117	870	0
Confl. Peds. (#/hr)			3	3			11		12	12		11
Confl. Bikes (#/hr)			1									3
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	15.9	25.1		7.6	17.3		6.9	36.2		10.6	39.9	
Effective Green, g (s)	15.9	25.1		7.6	17.3		6.9	36.2		10.6	39.9	
Actuated g/C Ratio	0.17	0.26		0.08	0.18		0.07	0.38		0.11	0.42	
Clearance Time (s)	3.5	4.5		3.5	4.0		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	574	448		141	598		128	1334		197	1458	
v/s Ratio Prot	c0.12	c0.22		0.05	0.08		0.04	0.14		c0.07	c0.25	
v/s Ratio Perm												
v/c Ratio	0.73	0.82		0.58	0.46		0.49	0.36		0.59	0.60	
Uniform Delay, d1	37.5	32.8		42.2	34.7		42.4	21.1		40.2	21.3	
Progression Factor	1.00	1.00		1.00	1.00		0.99	0.86		1.00	1.00	
Incremental Delay, d2	3.9	11.5		3.9	0.8		1.1	0.7		3.2	1.8	
Delay (s)	41.4	44.3		46.1	35.4		43.2	18.8		43.3	23.1	
Level of Service	D	D		D	D		D	B		D	C	
Approach Delay (s)		42.8			37.1			21.6			25.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

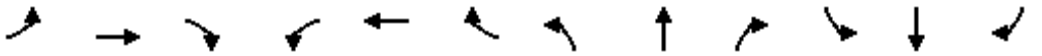
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	90	172	57	65	33	112	355	45	57	657	63
Future Volume (vph)	119	90	172	57	65	33	112	355	45	57	657	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1555	1770	1759		1770	3539	1516	1770	3539	1518
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1555	1770	1759		1770	3539	1516	1770	3539	1518
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	138	105	200	66	76	38	124	394	50	63	722	69
RTOR Reduction (vph)	0	0	167	0	22	0	0	0	23	0	0	35
Lane Group Flow (vph)	138	105	33	66	92	0	124	394	27	63	722	34
Confl. Peds. (#/hr)	6		7	7		6	12		12	12		12
Confl. Bikes (#/hr)						1						1
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.2	15.6	15.6	7.0	14.4		10.8	50.5	50.5	6.9	46.6	46.6
Effective Green, g (s)	8.2	15.6	15.6	7.0	14.4		10.8	50.5	50.5	6.9	46.6	46.6
Actuated g/C Ratio	0.09	0.16	0.16	0.07	0.15		0.11	0.53	0.53	0.07	0.49	0.49
Clearance Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	296	305	255	130	266		201	1881	805	128	1735	744
v/s Ratio Prot	c0.04	c0.06		0.04	0.05		c0.07	0.11		0.04	c0.20	
v/s Ratio Perm			0.02						0.02			0.02
v/c Ratio	0.47	0.34	0.13	0.51	0.35		0.62	0.21	0.03	0.49	0.42	0.05
Uniform Delay, d1	41.3	35.2	33.9	42.3	36.1		40.1	11.7	10.6	42.4	15.5	12.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.12	0.62	0.62	1.32	0.63	0.40
Incremental Delay, d2	0.4	0.9	0.3	1.1	1.1		3.9	0.3	0.1	0.9	0.6	0.1
Delay (s)	41.7	36.1	34.2	43.5	37.2		48.8	7.6	6.6	56.7	10.3	5.2
Level of Service	D	D	C	D	D		D	A	A	E	B	A
Approach Delay (s)		37.0			39.5			16.5			13.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

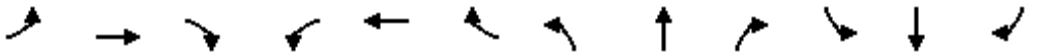
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	0	846	103	331	70	309	331	0	0	602	92
Future Volume (vph)	191	0	846	103	331	70	309	331	0	0	602	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6		3.0	4.6	4.6	4.6	3.0	4.5			4.5	4.5
Lane Util. Factor	1.00		0.88	1.00	0.91	0.91	0.97	0.91			0.95	1.00
Frpb, ped/bikes	1.00		0.99	1.00	1.00	0.93	1.00	1.00			1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		2749	1770	3390	1343	3433	5085			3539	1530
Flt Permitted	0.95		1.00	0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		2749	1770	3390	1343	3433	5085			3539	1530
Peak-hour factor, PHF	0.90	0.90	0.90	0.80	0.80	0.80	0.86	0.86	0.86	0.92	0.92	0.92
Adj. Flow (vph)	212	0	940	129	414	88	359	385	0	0	654	100
RTOR Reduction (vph)	0	0	357	0	0	65	0	0	0	0	0	62
Lane Group Flow (vph)	212	0	583	129	414	23	359	385	0	0	654	38
Confl. Peds. (#/hr)	59		4	4		59	19		25	25		19
Confl. Bikes (#/hr)						1						1
Turn Type	Prot		pm+ov	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases	4		5	3	3		5	2			6	
Permitted Phases			4			3						6
Actuated Green, G (s)	20.8		38.6	30.4	30.4	30.4	17.8	49.0			27.1	27.1
Effective Green, g (s)	20.8		40.8	30.4	30.4	30.4	18.9	49.0			27.1	27.1
Actuated g/C Ratio	0.18		0.36	0.27	0.27	0.27	0.17	0.43			0.24	0.24
Clearance Time (s)	4.6		4.1	4.6	4.6	4.6	4.1	4.5			4.5	4.5
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0	2.0	4.0			4.0	4.0
Lane Grp Cap (vph)	323		984	472	904	358	569	2187			842	364
v/s Ratio Prot	c0.12		0.10	0.07	c0.12		c0.10	0.08			c0.18	
v/s Ratio Perm			0.11			0.02						0.03
v/c Ratio	0.66		0.59	0.27	0.46	0.07	0.63	0.18			0.78	0.11
Uniform Delay, d1	43.2		29.8	33.0	34.9	31.2	44.3	20.0			40.6	33.9
Progression Factor	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	3.6		0.6	0.1	0.1	0.0	1.7	0.1			4.8	0.2
Delay (s)	46.9		30.4	33.1	35.0	31.2	45.9	20.1			45.4	34.1
Level of Service	D		C	C	D	C	D	C			D	C
Approach Delay (s)		33.4			34.1			32.5			43.9	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	16.7
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

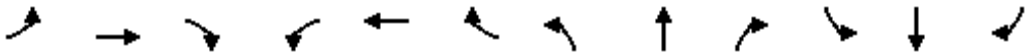
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	226	154	85	260	100	90	397	23	135	825	33
Future Volume (vph)	56	226	154	85	260	100	90	397	23	135	825	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.7	3.0	3.0		3.0	4.1		3.0	4.1	4.1
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1751	1863	1528	1756	3357		1770	3495		1770	3539	1545
Flt Permitted	0.26	1.00	1.00	0.21	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	477	1863	1528	382	3357		1770	3495		1770	3539	1545
Peak-hour factor, PHF	0.68	0.68	0.68	0.72	0.72	0.72	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	82	332	226	118	361	139	100	441	26	148	907	36
RTOR Reduction (vph)	0	0	175	0	38	0	0	4	0	0	0	16
Lane Group Flow (vph)	82	332	51	118	462	0	100	463	0	148	907	20
Confl. Peds. (#/hr)	24		16	16		24	10		27	27		10
Confl. Bikes (#/hr)			7						2			1
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	24.3	24.3	24.3	24.3	24.3		12.1	55.9		16.3	60.1	60.1
Effective Green, g (s)	25.0	25.0	24.3	25.0	25.0		12.8	55.9		17.0	60.1	60.1
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23		0.12	0.52		0.16	0.56	0.56
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	4.1		3.7	4.1	4.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)	110	431	343	88	777		209	1808		278	1969	859
v/s Ratio Prot		0.18			0.14		c0.06	0.13		c0.08	c0.26	
v/s Ratio Perm	0.17		0.03	c0.31								0.01
v/c Ratio	0.75	0.77	0.15	1.34	0.60		0.48	0.26		0.53	0.46	0.02
Uniform Delay, d1	38.5	38.8	33.6	41.5	37.0		44.5	14.5		41.8	14.3	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.46	0.33		1.00	1.00	1.00
Incremental Delay, d2	21.1	7.6	0.1	211.7	0.8		0.6	0.3		1.0	0.8	0.1
Delay (s)	59.6	46.4	33.6	253.2	37.8		65.4	5.2		42.8	15.1	10.8
Level of Service	E	D	C	F	D		E	A		D	B	B
Approach Delay (s)		43.6			78.9			15.8			18.7	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

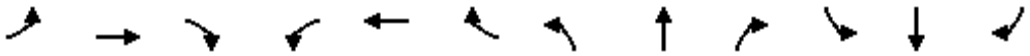
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	238	87	77	252	33	66	256	27	55	914	140
Future Volume (vph)	154	238	87	77	252	33	66	256	27	55	914	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.2		3.0		3.0	4.1		3.0	4.1	
Lane Util. Factor	0.95	0.95	1.00		0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.93		0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.99		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1770	1480		3428		1770	3466		1770	3454	
Flt Permitted	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1770	1480		3428		1770	3466		1770	3454	
Peak-hour factor, PHF	0.81	0.81	0.81	0.83	0.83	0.83	0.88	0.88	0.88	0.96	0.96	0.96
Adj. Flow (vph)	190	294	107	93	304	40	75	291	31	57	952	146
RTOR Reduction (vph)	0	0	82	0	6	0	0	5	0	0	9	0
Lane Group Flow (vph)	190	294	25	0	431	0	75	317	0	57	1089	0
Confl. Peds. (#/hr)	56		38	38		56	15		14	14		15
Confl. Bikes (#/hr)			11			2			2			4
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4									
Actuated Green, G (s)	29.2	29.2	29.2		27.0		9.1	44.7		8.4	44.0	
Effective Green, g (s)	29.2	29.2	29.2		27.7		9.8	44.7		9.1	44.0	
Actuated g/C Ratio	0.23	0.23	0.23		0.22		0.08	0.36		0.07	0.35	
Clearance Time (s)	4.2	4.2	4.2		3.7		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	392	413	345		759		138	1239		128	1215	
v/s Ratio Prot	0.11	c0.17			c0.13		c0.04	0.09		0.03	c0.32	
v/s Ratio Perm			0.02									
v/c Ratio	0.48	0.71	0.07		0.57		0.54	0.26		0.45	0.90	
Uniform Delay, d1	41.4	44.0	37.3		43.3		55.4	28.4		55.5	38.3	
Progression Factor	1.00	1.00	1.00		1.00		0.69	0.48		1.00	1.00	
Incremental Delay, d2	0.3	4.8	0.0		0.6		2.3	0.5		0.9	10.5	
Delay (s)	41.7	48.8	37.4		43.9		40.4	14.2		56.4	48.8	
Level of Service	D	D	D		D		D	B		E	D	
Approach Delay (s)		44.5			43.9			19.2			49.2	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

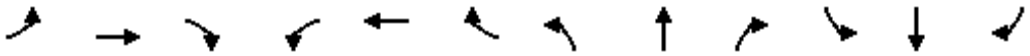
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	208	67	105	174	50	20	311	65	63	1004	11
Future Volume (vph)	4	208	67	105	174	50	20	311	65	63	1004	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.7		3.7	4.7		3.0	4.1		3.0	4.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1768		1770	1778		1770	3394		1770	3532	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1768		1770	1778		1770	3394		1770	3532	
Peak-hour factor, PHF	0.78	0.78	0.78	0.88	0.88	0.88	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	5	267	86	119	198	57	22	334	70	70	1116	12
RTOR Reduction (vph)	0	9	0	0	7	0	0	13	0	0	1	0
Lane Group Flow (vph)	5	344	0	119	248	0	22	391	0	70	1127	0
Confl. Peds. (#/hr)	31		34	34		31	18		24	24		18
Confl. Bikes (#/hr)			2			3			2			4
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	2.2	30.6		13.4	41.8		6.0	55.5		9.3	58.8	
Effective Green, g (s)	2.2	30.6		13.4	41.8		6.7	55.5		10.0	58.8	
Actuated g/C Ratio	0.02	0.24		0.11	0.33		0.05	0.44		0.08	0.47	
Clearance Time (s)	3.7	4.7		3.7	4.7		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	31	432		189	594		94	1506		141	1661	
v/s Ratio Prot	0.00	c0.19		c0.07	0.14		0.01	0.12		c0.04	c0.32	
v/s Ratio Perm												
v/c Ratio	0.16	0.80		0.63	0.42		0.23	0.26		0.50	0.68	
Uniform Delay, d1	60.5	44.3		53.4	32.2		56.7	21.8		55.1	25.8	
Progression Factor	1.00	1.00		1.00	1.00		1.55	0.33		1.31	0.39	
Incremental Delay, d2	2.4	9.8		6.4	0.5		1.3	0.4		1.7	1.4	
Delay (s)	62.9	54.1		59.8	32.7		89.2	7.7		74.0	11.6	
Level of Service	E	D		E	C		F	A		E	B	
Approach Delay (s)		54.2			41.3			11.9			15.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

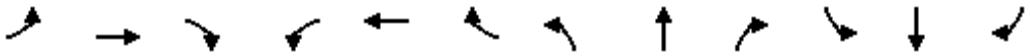
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	211	477	49	32	24	143	331	41	30	1170	11
Future Volume (vph)	13	211	477	49	32	24	143	331	41	30	1170	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.1		3.0	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.89	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1414	1770	1728		1770	3449		1770	3531	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1414	1770	1728		1770	3449		1770	3531	
Peak-hour factor, PHF	0.84	0.84	0.84	0.88	0.88	0.88	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	15	251	568	56	36	27	151	348	43	33	1300	12
RTOR Reduction (vph)	0	0	284	0	19	0	0	7	0	0	1	0
Lane Group Flow (vph)	15	251	284	56	44	0	151	384	0	33	1311	0
Confl. Peds. (#/hr)	7		80	80		7	33		25	25		33
Confl. Bikes (#/hr)			8			1			2			5
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4									
Actuated Green, G (s)	4.0	31.7	31.7	8.6	36.3		14.8	59.3		6.2	50.7	
Effective Green, g (s)	5.7	33.4	33.4	10.3	38.0		16.5	59.3		7.9	50.7	
Actuated g/C Ratio	0.05	0.27	0.27	0.08	0.30		0.13	0.47		0.06	0.41	
Clearance Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	5.1		4.7	5.1	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	80	497	377	145	525		233	1636		111	1432	
v/s Ratio Prot	0.01	0.13		c0.03	0.03		c0.09	0.11		0.02	c0.37	
v/s Ratio Perm			c0.20									
v/c Ratio	0.19	0.51	0.75	0.39	0.08		0.65	0.23		0.30	0.92	
Uniform Delay, d1	57.4	38.8	42.0	54.4	31.1		51.5	19.4		55.9	35.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.88	1.00		0.69	0.65	
Incremental Delay, d2	1.1	0.8	8.3	1.7	0.1		5.9	0.3		1.2	8.7	
Delay (s)	58.6	39.6	50.4	56.1	31.1		51.3	19.7		39.5	31.6	
Level of Service	E	D	D	E	C		D	B		D	C	
Approach Delay (s)		47.3			42.9			28.5			31.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

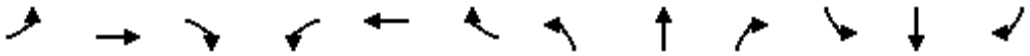
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	247	79	167	203	72	20	302	80	115	1107	76
Future Volume (vph)	117	247	79	167	203	72	20	302	80	115	1107	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.1		3.0	4.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.91	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1250	1770	1863	1437	1770	3376		1770	3490	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1250	1770	1863	1437	1770	3376		1770	3490	
Peak-hour factor, PHF	0.87	0.87	0.87	0.79	0.79	0.79	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	134	284	91	211	257	91	22	339	90	132	1272	87
RTOR Reduction (vph)	0	0	70	0	0	71	0	17	0	0	4	0
Lane Group Flow (vph)	134	284	21	211	257	20	22	412	0	132	1355	0
Confl. Peds. (#/hr)	58		146	146		58	19		23	23		19
Confl. Bikes (#/hr)			11			11			1			5
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						
Actuated Green, G (s)	28.1	28.1	28.1	27.1	27.1	27.1	7.4	39.8		14.8	47.2	
Effective Green, g (s)	28.8	28.8	28.8	27.8	27.8	27.8	8.1	39.8		15.5	47.2	
Actuated g/C Ratio	0.23	0.23	0.23	0.22	0.22	0.22	0.06	0.32		0.12	0.38	
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.1		3.7	4.1	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	407	429	288	393	414	319	114	1074		219	1317	
v/s Ratio Prot	0.08	c0.15		0.12	c0.14		0.01	c0.12		0.07	c0.39	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.33	0.66	0.07	0.54	0.62	0.06	0.19	0.38		0.60	1.03	
Uniform Delay, d1	40.1	43.7	37.6	42.9	43.8	38.3	55.4	33.1		51.8	38.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.65		0.89	0.87	
Incremental Delay, d2	0.5	3.8	0.1	1.4	2.9	0.1	0.8	1.0		3.9	30.4	
Delay (s)	40.5	47.5	37.8	44.3	46.7	38.4	42.9	22.5		50.0	64.4	
Level of Service	D	D	D	D	D	D	D	C		D	E	
Approach Delay (s)		43.9			44.5			23.5			63.1	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	13.1
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

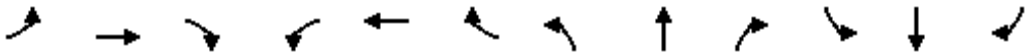
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	515	255	134	582	69	100	290	63	123	1114	22
Future Volume (vph)	22	515	255	134	582	69	100	290	63	123	1114	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	3.0	4.0		4.0	4.1		3.0	4.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1455	1770	3474		1770	3418		1770	3528	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1455	1770	3474		1770	3418		1770	3528	
Peak-hour factor, PHF	0.88	0.88	0.88	0.86	0.86	0.86	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	25	585	290	156	677	80	110	319	69	131	1185	23
RTOR Reduction (vph)	0	0	222	0	7	0	0	15	0	0	1	0
Lane Group Flow (vph)	25	585	68	156	750	0	110	373	0	131	1207	0
Confl. Peds. (#/hr)	3		40	40		3	3		21	21		3
Confl. Bikes (#/hr)			21			11			3			6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	6.6	29.5	29.5	12.2	35.1		13.6	54.8		13.3	54.5	
Effective Green, g (s)	6.3	29.2	29.2	12.9	34.8		13.3	54.8		14.0	54.5	
Actuated g/C Ratio	0.05	0.23	0.23	0.10	0.28		0.11	0.44		0.11	0.44	
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	89	826	339	182	967		188	1498		198	1538	
v/s Ratio Prot	0.01	0.17		c0.09	c0.22		c0.06	0.11		0.07	c0.34	
v/s Ratio Perm			0.05									
v/c Ratio	0.28	0.71	0.20	0.86	0.78		0.59	0.25		0.66	0.78	
Uniform Delay, d1	57.2	44.0	38.5	55.1	41.5		53.2	22.1		53.2	30.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.12	0.78		0.80	0.75	
Incremental Delay, d2	1.7	2.8	0.3	30.6	3.9		4.5	0.4		7.2	3.7	
Delay (s)	58.9	46.8	38.8	85.7	45.4		64.1	17.5		49.8	26.2	
Level of Service	E	D	D	F	D		E	B		D	C	
Approach Delay (s)		44.5			52.3			27.8			28.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

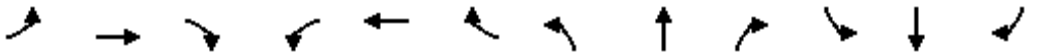
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	174	110	56	392	30	155	348	14	60	1100	124
Future Volume (vph)	44	174	110	56	392	30	155	348	14	60	1100	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		4.0	4.5		4.0	4.5	
Lane Util. Factor		0.95			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.99		1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3295			1828		1770	3510		1770	3447	
Flt Permitted		0.76			0.90		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2508			1655		1770	3510		1770	3447	
Peak-hour factor, PHF	0.79	0.79	0.79	0.90	0.90	0.90	0.83	0.83	0.83	0.94	0.94	0.94
Adj. Flow (vph)	56	220	139	62	436	33	187	419	17	64	1170	132
RTOR Reduction (vph)	0	80	0	0	3	0	0	3	0	0	10	0
Lane Group Flow (vph)	0	335	0	0	528	0	187	433	0	64	1292	0
Confl. Peds. (#/hr)	40		19	19		40	41		16	16		41
Confl. Bikes (#/hr)			9			17			3			
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		26.5			26.5		11.0	33.6		6.4	29.0	
Effective Green, g (s)		26.5			26.5		11.0	33.6		6.4	29.0	
Actuated g/C Ratio		0.33			0.33		0.14	0.42		0.08	0.36	
Clearance Time (s)		5.0			5.0		4.0	4.5		4.0	4.5	
Vehicle Extension (s)		2.0			2.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		830			548		243	1474		141	1249	
v/s Ratio Prot							c0.11	0.12		0.04	c0.37	
v/s Ratio Perm		0.13			c0.32							
v/c Ratio		0.40			0.96		0.77	0.29		0.45	1.03	
Uniform Delay, d1		20.6			26.3		33.3	15.4		35.1	25.5	
Progression Factor		1.00			1.00		1.06	1.40		1.00	1.00	
Incremental Delay, d2		0.1			28.9		10.0	0.4		0.8	34.7	
Delay (s)		20.8			55.2		45.4	21.9		36.0	60.2	
Level of Service		C			E		D	C		D	E	
Approach Delay (s)		20.8			55.2			28.9			59.1	
Approach LOS		C			E			C			E	

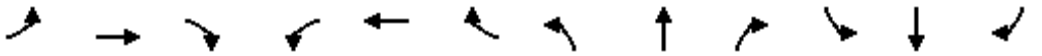
Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



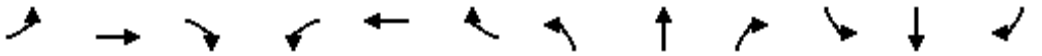
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	75	7	21	163	88	24	517	35	65	1069	30
Future Volume (vph)	31	75	7	21	163	88	24	517	35	65	1069	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	10	10	12	12	12	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	4.5		4.0	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.94		1.00	0.95	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1705	1393		1725	1399	1770	3474		1770	3518	
Flt Permitted		0.76	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1310	1393		1650	1399	1770	3474		1770	3518	
Peak-hour factor, PHF	0.71	0.71	0.71	0.81	0.81	0.81	0.77	0.77	0.77	0.92	0.92	0.92
Adj. Flow (vph)	44	106	10	26	201	109	31	671	45	71	1162	33
RTOR Reduction (vph)	0	0	8	0	0	74	0	4	0	0	2	0
Lane Group Flow (vph)	0	150	2	0	227	35	31	712	0	71	1193	0
Confl. Peds. (#/hr)	24		23	23		24	21		56	56		21
Confl. Bikes (#/hr)			23			17			12			6
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		17.0	17.0		17.0	17.0	2.9	42.8		6.7	46.6	
Effective Green, g (s)		17.0	17.0		17.0	17.0	2.9	42.8		6.7	46.6	
Actuated g/C Ratio		0.21	0.21		0.21	0.21	0.04	0.53		0.08	0.58	
Clearance Time (s)		5.0	5.0		5.0	5.0	4.0	4.5		4.0	4.5	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		278	296		350	297	64	1858		148	2049	
v/s Ratio Prot							0.02	0.20		c0.04	c0.34	
v/s Ratio Perm		0.11	0.00		c0.14	0.03						
v/c Ratio		0.54	0.01		0.65	0.12	0.48	0.38		0.48	0.58	
Uniform Delay, d1		28.0	24.8		28.8	25.4	37.8	10.9		35.0	10.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.64	0.44	
Incremental Delay, d2		1.0	0.0		3.1	0.1	2.1	0.6		0.4	0.5	
Delay (s)		29.0	24.8		31.9	25.5	39.9	11.5		57.7	5.1	
Level of Service		C	C		C	C	D	B		E	A	
Approach Delay (s)		28.8			29.8			12.7			8.1	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	755	77	94	720	86	127	360	42	150	875	71
Future Volume (vph)	54	755	77	94	720	86	127	360	42	150	875	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3413		1770	3419		1770	3463		1770	3471	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3413		1770	3419		1770	3463		1770	3471	
Peak-hour factor, PHF	0.91	0.91	0.91	0.83	0.83	0.83	0.83	0.83	0.83	0.86	0.86	0.86
Adj. Flow (vph)	59	830	85	113	867	104	153	434	51	174	1017	83
RTOR Reduction (vph)	0	7	0	0	8	0	0	8	0	0	5	0
Lane Group Flow (vph)	59	908	0	113	964	0	153	477	0	174	1095	0
Confl. Peds. (#/hr)	68		111	111		68	72		33	33		72
Confl. Bikes (#/hr)			2			1			1			3
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	8.0	41.0		12.0	45.0		13.7	37.8		13.0	37.1	
Effective Green, g (s)	8.0	41.0		12.0	45.0		13.7	38.0		13.0	37.3	
Actuated g/C Ratio	0.07	0.34		0.10	0.38		0.11	0.32		0.11	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	118	1166		177	1282		202	1096		191	1078	
v/s Ratio Prot	0.03	0.27		c0.06	c0.28		0.09	0.14		c0.10	c0.32	
v/s Ratio Perm												
v/c Ratio	0.50	0.78		0.64	0.75		0.76	0.44		0.91	1.02	
Uniform Delay, d1	54.1	35.4		51.9	32.6		51.5	32.5		52.9	41.4	
Progression Factor	1.53	0.42		1.00	1.00		1.04	0.89		1.00	1.00	
Incremental Delay, d2	3.0	4.7		7.4	4.1		14.8	0.3		40.9	31.4	
Delay (s)	85.7	19.7		59.3	36.7		68.5	29.2		93.8	72.8	
Level of Service	F	B		E	D		E	C		F	E	
Approach Delay (s)		23.7			39.1			38.6			75.7	
Approach LOS		C			D			D			E	

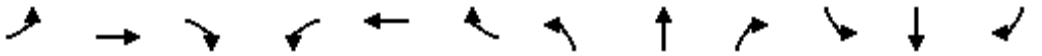
Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	231	48	106	255	69	66	546	89	90	928	58
Future Volume (vph)	26	231	48	106	255	69	66	546	89	90	928	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	12	8	8	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0	5.0	4.0	4.5		4.0	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1562			1584	1547	1770	3344		1770	3481	
Flt Permitted		0.91			0.69	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1431			1111	1547	1770	3344		1770	3481	
Peak-hour factor, PHF	0.86	0.86	0.86	0.87	0.87	0.87	0.84	0.84	0.84	0.85	0.85	0.85
Adj. Flow (vph)	30	269	56	122	293	79	79	650	106	106	1092	68
RTOR Reduction (vph)	0	7	0	0	0	34	0	10	0	0	3	0
Lane Group Flow (vph)	0	348	0	0	415	45	79	746	0	106	1157	0
Confl. Peds. (#/hr)	7		29	29		7	33		20	20		33
Confl. Bikes (#/hr)			1			6			11			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	0	8
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		42.5			42.5	42.5	8.0	43.1		10.9	46.0	
Effective Green, g (s)		42.5			42.5	42.5	8.0	43.1		10.9	46.0	
Actuated g/C Ratio		0.39			0.39	0.39	0.07	0.39		0.10	0.42	
Clearance Time (s)		5.0			5.0	5.0	4.0	4.5		4.0	4.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		552			429	597	128	1310		175	1455	
v/s Ratio Prot							0.04	0.22		c0.06	c0.33	
v/s Ratio Perm		0.24			c0.37	0.03						
v/c Ratio		0.63			0.97	0.08	0.62	0.57		0.61	0.79	
Uniform Delay, d1		27.4			33.1	21.3	49.5	26.2		47.5	27.9	
Progression Factor		1.00			1.00	1.00	0.92	0.91		1.00	1.00	
Incremental Delay, d2		1.7			34.5	0.0	5.9	1.7		4.0	4.6	
Delay (s)		29.1			67.5	21.4	51.4	25.5		51.5	32.5	
Level of Service		C			E	C	D	C		D	C	
Approach Delay (s)		29.1			60.2			28.0			34.1	
Approach LOS		C			E			C			C	

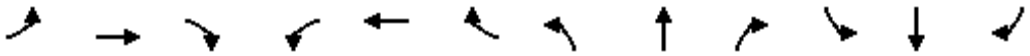
Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	436	175	35	592	166	207	664	69	139	812	122
Future Volume (vph)	80	436	175	35	592	166	207	664	69	139	812	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96			0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1763	3340			3392		1770	3396		1770	3449	
Flt Permitted	0.14	1.00			0.85		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	260	3340			2899		1770	3396		1770	3449	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	88	479	192	40	673	189	235	755	78	146	855	128
RTOR Reduction (vph)	0	45	0	0	25	0	0	6	0	0	10	0
Lane Group Flow (vph)	88	626	0	0	877	0	235	827	0	146	973	0
Confl. Peds. (#/hr)	18		27	27		18	22		26	26		22
Confl. Bikes (#/hr)			1			3			13			8
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	38.7	38.7			38.7		18.7	43.3		15.0	39.6	
Effective Green, g (s)	38.7	38.7			38.7		18.7	43.3		15.0	39.6	
Actuated g/C Ratio	0.35	0.35			0.35		0.17	0.39		0.14	0.36	
Clearance Time (s)	4.0	4.0			4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	91	1175			1019		300	1336		241	1241	
v/s Ratio Prot		0.19					c0.13	0.24		0.08	c0.28	
v/s Ratio Perm	c0.34				0.30							
v/c Ratio	0.97	0.53			0.86		0.78	0.62		0.61	0.78	
Uniform Delay, d1	35.0	28.4			33.1		43.7	26.7		44.7	31.4	
Progression Factor	1.00	1.00			1.00		0.95	1.17		1.00	1.00	
Incremental Delay, d2	82.6	0.5			7.6		12.1	2.1		4.3	5.0	
Delay (s)	117.7	28.9			40.7		53.6	33.5		49.0	36.4	
Level of Service	F	C			D		D	C		D	D	
Approach Delay (s)		39.2			40.7			37.9			38.0	
Approach LOS		D			D			D			D	

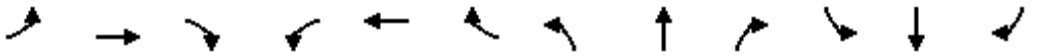
Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	178	72	122	536	28	162	574	104	58	781	94
Future Volume (vph)	38	178	72	122	536	28	162	574	104	58	781	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		3.5	5.0		3.5	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3351		1770	3508		1770	3437		1770	3469	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3351		1770	3508		1770	3437		1770	3469	
Peak-hour factor, PHF	0.88	0.88	0.80	0.86	0.86	0.86	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	43	202	90	142	623	33	182	645	117	62	840	101
RTOR Reduction (vph)	0	51	0	0	4	0	0	10	0	0	7	0
Lane Group Flow (vph)	43	241	0	142	652	0	182	752	0	62	934	0
Confl. Peds. (#/hr)	9		6	6		9	14		15	15		14
Confl. Bikes (#/hr)			2			2			20			11
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.7	21.5		11.1	26.9		15.4	52.3		8.1	45.0	
Effective Green, g (s)	5.7	21.5		11.1	26.9		15.4	52.3		8.1	45.0	
Actuated g/C Ratio	0.05	0.20		0.10	0.24		0.14	0.48		0.07	0.41	
Clearance Time (s)	3.5	5.0		3.5	5.0		3.5	5.0		3.5	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	654		178	857		247	1634		130	1419	
v/s Ratio Prot	0.02	0.07		c0.08	c0.19		c0.10	0.22		0.04	c0.27	
v/s Ratio Perm												
v/c Ratio	0.47	0.37		0.80	0.76		0.74	0.46		0.48	0.66	
Uniform Delay, d1	50.7	38.4		48.4	38.6		45.4	19.4		48.9	26.3	
Progression Factor	1.00	1.00		1.00	1.00		1.19	0.59		1.00	1.04	
Incremental Delay, d2	3.8	0.4		21.5	4.0		10.2	0.9		2.5	1.0	
Delay (s)	54.5	38.7		69.8	42.6		64.4	12.3		51.3	28.3	
Level of Service	D	D		E	D		E	B		D	C	
Approach Delay (s)		40.7			47.4			22.3			29.7	
Approach LOS		D			D			C			C	

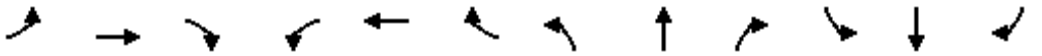
Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	248	106	32	389	184	325	755	15	132	697	75
Future Volume (vph)	93	248	106	32	389	184	325	755	15	132	697	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.7	4.1		3.0	4.1	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.98		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3312		1770	3305		3433	3446		1770	3405	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3312		1770	3305		3433	3446		1770	3405	
Peak-hour factor, PHF	0.83	0.83	0.83	0.86	0.86	0.86	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	112	299	128	37	452	214	353	821	16	139	734	79
RTOR Reduction (vph)	0	42	0	0	52	0	0	1	0	0	7	0
Lane Group Flow (vph)	112	385	0	37	614	0	353	836	0	139	806	0
Confl. Peds. (#/hr)	20		41	41		20	44		57	57		44
Confl. Bikes (#/hr)			6			25			13			19
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	8	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	12.2	31.0		6.6	25.4		18.3	43.3		13.5	38.5	
Effective Green, g (s)	12.9	32.1		7.3	26.5		18.3	43.3		14.2	38.5	
Actuated g/C Ratio	0.12	0.29		0.07	0.24		0.17	0.39		0.13	0.35	
Clearance Time (s)	3.7	4.1		3.7	4.1		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	2.0	2.5		3.0	2.0		2.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	207	966		117	796		571	1356		228	1191	
v/s Ratio Prot	c0.06	0.12		0.02	c0.19		0.10	c0.24		0.08	c0.24	
v/s Ratio Perm												
v/c Ratio	0.54	0.40		0.32	0.77		0.62	0.62		0.61	0.68	
Uniform Delay, d1	45.8	31.2		49.0	38.9		42.6	26.7		45.3	30.4	
Progression Factor	1.05	0.76		1.48	0.72		0.58	0.44		1.12	0.45	
Incremental Delay, d2	1.5	0.2		1.5	4.1		0.8	1.2		3.7	2.9	
Delay (s)	49.6	23.9		74.2	31.9		25.4	13.0		54.2	16.5	
Level of Service	D	C		E	C		C	B		D	B	
Approach Delay (s)		29.3			34.1			16.7			22.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	120	8	84	183	9	0	1098	60	0	756	99
Future Volume (vph)	51	120	8	84	183	9	0	1098	60	0	756	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.1		5.7	6.1			6.1			6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1841		1770	1845			3508			3456	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)	1770	1841		1770	1845			3508			3456	
Peak-hour factor, PHF	0.80	0.80	0.80	0.85	0.85	0.85	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	64	150	10	99	215	11	0	1220	67	0	859	112
RTOR Reduction (vph)	0	3	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	64	157	0	99	224	0	0	1287	0	0	964	0
Confl. Peds. (#/hr)	23		11	11		23	7		2	2		7
Confl. Bikes (#/hr)			14			14			16			22
Turn Type	Prot	NA		Prot	NA			NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases												
Actuated Green, G (s)	11.2	25.0		20.1	33.9			47.0			47.0	
Effective Green, g (s)	11.2	25.0		20.1	33.9			47.0			47.0	
Actuated g/C Ratio	0.10	0.23		0.18	0.31			0.43			0.43	
Clearance Time (s)	5.7	6.1		5.7	6.1			6.1			6.1	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			4.0			4.0	
Lane Grp Cap (vph)	180	418		323	568			1498			1476	
v/s Ratio Prot	0.04	c0.09		0.06	c0.12			c0.37			0.28	
v/s Ratio Perm												
v/c Ratio	0.36	0.38		0.31	0.39			0.86			0.65	
Uniform Delay, d1	46.0	35.9		38.9	30.0			28.5			25.0	
Progression Factor	1.00	1.00		1.15	1.11			0.73			0.42	
Incremental Delay, d2	0.4	0.2		0.2	0.1			5.6			1.9	
Delay (s)	46.5	36.1		45.0	33.5			26.3			12.4	
Level of Service	D	D		D	C			C			B	
Approach Delay (s)		39.1			37.0			26.3			12.4	
Approach LOS		D			D			C			B	

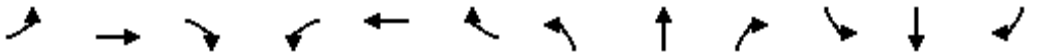
Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	155	0	430	0	0	515
Future Volume (vph)	155	0	430	0	0	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.95			0.95
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3433		3539			3539
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3433		3539			3539
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.97	0.97
Adj. Flow (vph)	168	0	494	0	0	531
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	168	0	494	0	0	531
Turn Type	Prot		NA			NA
Protected Phases	7		2			6
Permitted Phases						
Actuated Green, G (s)	8.3		50.5			50.5
Effective Green, g (s)	7.8		52.0			52.0
Actuated g/C Ratio	0.10		0.65			0.65
Clearance Time (s)	3.5		5.5			5.5
Vehicle Extension (s)	2.0		3.0			3.0
Lane Grp Cap (vph)	334		2300			2300
v/s Ratio Prot	c0.05		0.14			c0.15
v/s Ratio Perm						
v/c Ratio	0.50		0.21			0.23
Uniform Delay, d1	34.3		5.7			5.8
Progression Factor	1.00		0.46			1.00
Incremental Delay, d2	0.4		0.2			0.2
Delay (s)	34.7		2.8			6.0
Level of Service	C		A			A
Approach Delay (s)	34.7		2.8			6.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



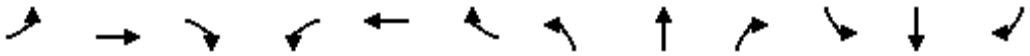
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	56	11	61	85	146	3	341	33	88	488	8
Future Volume (vph)	6	56	11	61	85	146	3	341	33	88	488	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00	1.00		0.95		1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00	0.98		0.99		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00		0.98	1.00	
Frt		0.98		1.00	1.00	0.85		0.99		1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1814		1768	1863	1555		3472		1739	3528	
Flt Permitted		0.98		0.64	1.00	1.00		0.95		0.52	1.00	
Satd. Flow (perm)		1776		1196	1863	1555		3310		948	3528	
Peak-hour factor, PHF	0.73	0.73	0.73	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	77	15	68	94	162	3	359	35	93	514	8
RTOR Reduction (vph)	0	10	0	0	0	140	0	5	0	0	1	0
Lane Group Flow (vph)	0	90	0	68	94	22	0	392	0	93	521	0
Confl. Peds. (#/hr)	2		1	1		2	10		18	18		10
Confl. Bikes (#/hr)						2			24			52
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		10.9		10.9	10.9	10.9		59.6		59.6	59.6	
Effective Green, g (s)		10.9		10.9	10.9	10.9		61.1		61.1	61.1	
Actuated g/C Ratio		0.14		0.14	0.14	0.14		0.76		0.76	0.76	
Clearance Time (s)		4.0		4.0	4.0	4.0		5.5		5.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		241		162	253	211		2528		724	2694	
v/s Ratio Prot					0.05						c0.15	
v/s Ratio Perm		0.05		c0.06		0.01		0.12		0.10		
v/c Ratio		0.37		0.42	0.37	0.10		0.16		0.13	0.19	
Uniform Delay, d1		31.4		31.7	31.4	30.3		2.5		2.5	2.6	
Progression Factor		1.00		1.00	1.00	1.00		0.93		2.84	2.91	
Incremental Delay, d2		1.0		1.8	0.9	0.2		0.1		0.4	0.2	
Delay (s)		32.4		33.4	32.4	30.5		2.5		7.4	7.8	
Level of Service		C		C	C	C		A		A	A	
Approach Delay (s)		32.4			31.6			2.5			7.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

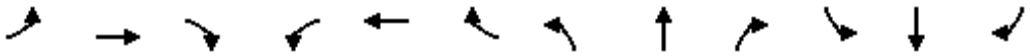
Movement	NBT	NBR	NBR2	SBL	SBT	NWL	NWR	SWL	SWR
Lane Configurations									
Traffic Volume (vph)	375	56	2	0	500	3	1	50	2
Future Volume (vph)	375	56	2	0	500	3	1	50	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0				3.0	3.0		3.0	
Lane Util. Factor	0.95				0.95	1.00		0.97	
Frpb, ped/bikes	0.99				1.00	1.00		1.00	
Flpb, ped/bikes	1.00				1.00	1.00		1.00	
Frt	0.98				1.00	0.97		0.99	
Flt Protected	1.00				1.00	0.96		0.95	
Satd. Flow (prot)	3429				3539	1735		3427	
Flt Permitted	1.00				1.00	0.96		0.95	
Satd. Flow (perm)	3429				3539	1735		3427	
Peak-hour factor, PHF	0.90	0.90	0.90	0.84	0.84	0.33	0.33	0.73	0.73
Adj. Flow (vph)	417	62	2	0	595	9	3	68	3
RTOR Reduction (vph)	0	0	0	0	0	0	0	66	0
Lane Group Flow (vph)	481	0	0	0	595	12	0	5	0
Confl. Peds. (#/hr)		25				9		9	
Turn Type	NA				NA	Prot		Prot	
Protected Phases	2				6	3		4	
Permitted Phases									
Actuated Green, G (s)	62.0				62.0	1.3		4.2	
Effective Green, g (s)	64.5				64.5	1.3		5.2	
Actuated g/C Ratio	0.81				0.81	0.02		0.07	
Clearance Time (s)	5.5				5.5	3.0		4.0	
Vehicle Extension (s)	2.0				2.0	2.0		2.0	
Lane Grp Cap (vph)	2764				2853	28		222	
v/s Ratio Prot	0.14				c0.17	c0.01		c0.00	
v/s Ratio Perm									
v/c Ratio	0.17				0.21	0.43		0.02	
Uniform Delay, d1	1.7				1.8	39.0		35.0	
Progression Factor	1.00				0.05	1.00		1.00	
Incremental Delay, d2	0.1				0.0	3.8		0.0	
Delay (s)	1.9				0.1	42.8		35.0	
Level of Service	A				A	D		D	
Approach Delay (s)	1.9				0.1	42.8		35.0	
Approach LOS	A				A	D		D	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	32.2%	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)	14	311	46	19	727	67	70	305	53	60	289	2
Future Volume (vph)	14	311	46	19	727	67	70	305	53	60	289	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3455		1770	3479		1770	3353		1770	3533	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3455		1770	3479		1770	3353		1770	3533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.97	0.97	0.97	0.96	0.96	0.96	0.95	0.95	0.95
Adj. Flow (vph)	15	338	50	20	749	69	73	318	55	63	304	2
RTOR Reduction (vph)	0	8	0	0	5	0	0	17	0	0	1	0
Lane Group Flow (vph)	15	380	0	20	813	0	73	356	0	63	305	0
Confl. Peds. (#/hr)	30		15	15		30	33		38	38		33
Confl. Bikes (#/hr)			15			15			18			58
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	2.6	52.2		2.7	52.3		7.3	20.1		7.0	19.8	
Effective Green, g (s)	2.1	52.2		2.2	52.3		6.3	20.6		6.0	20.3	
Actuated g/C Ratio	0.02	0.52		0.02	0.52		0.06	0.21		0.06	0.20	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	37	1803		38	1819		111	690		106	717	
v/s Ratio Prot	0.01	0.11		c0.01	c0.23		c0.04	c0.11		0.04	0.09	
v/s Ratio Perm												
v/c Ratio	0.41	0.21		0.53	0.45		0.66	0.52		0.59	0.43	
Uniform Delay, d1	48.3	12.8		48.4	14.8		45.8	35.3		45.8	34.8	
Progression Factor	1.83	0.17		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.2		5.9	0.8		10.2	1.3		5.8	0.9	
Delay (s)	90.6	2.4		54.3	15.6		56.0	36.6		51.6	35.6	
Level of Service	F	A		D	B		E	D		D	D	
Approach Delay (s)		5.7			16.6			39.7			38.4	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	27	0	0	0	20	430	160	0	665	4
Future Volume (Veh/h)	0	0	27	0	0	0	20	430	160	0	665	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	29	0	0	0	22	467	174	0	723	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								184			190	
pX, platoon unblocked	0.97	0.97	0.94	0.97	0.97	0.95	0.94			0.95		
vC, conflicting volume	1002	1410	364	988	1325	320	727			641		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	699	1121	200	685	1033	178	586			516		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	100	100	100	98			100		
cM capacity (veh/h)	310	193	761	305	218	792	927			993		

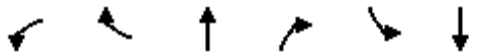
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	29	22	311	330	482	245
Volume Left	0	22	0	0	0	0
Volume Right	29	0	0	174	0	4
cSH	761	927	1700	1700	1700	1700
Volume to Capacity	0.04	0.02	0.18	0.19	0.28	0.14
Queue Length 95th (ft)	3	2	0	0	0	0
Control Delay (s)	9.9	9.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.9	0.3			0.0	
Approach LOS	A					

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	28.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	461	575	130	141	5
Future Volume (vph)	0	461	575	130	141	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	
Lane Util. Factor		0.95	0.95		0.97	
Frpb, ped/bikes		1.00	0.98		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.97		1.00	
Flt Protected		1.00	1.00		0.95	
Satd. Flow (prot)		3539	3388		3427	
Flt Permitted		1.00	1.00		0.95	
Satd. Flow (perm)		3539	3388		3427	
Peak-hour factor, PHF	0.87	0.87	0.96	0.96	0.77	0.77
Adj. Flow (vph)	0	530	599	135	183	6
RTOR Reduction (vph)	0	0	12	0	4	0
Lane Group Flow (vph)	0	530	722	0	185	0
Confl. Peds. (#/hr)	28			28		5
Confl. Bikes (#/hr)				8		
Turn Type		NA	NA		Prot	
Protected Phases		2	6		8	
Permitted Phases						
Actuated Green, G (s)		50.5	50.5		8.7	
Effective Green, g (s)		53.0	53.0		9.2	
Actuated g/C Ratio		0.66	0.66		0.11	
Clearance Time (s)		5.5	5.5		3.5	
Vehicle Extension (s)		3.0	3.0		2.0	
Lane Grp Cap (vph)		2344	2244		394	
v/s Ratio Prot		0.15	c0.21		c0.05	
v/s Ratio Perm						
v/c Ratio		0.23	0.32		0.47	
Uniform Delay, d1		5.4	5.8		33.1	
Progression Factor		0.96	0.94		1.00	
Incremental Delay, d2		0.2	0.4		0.3	
Delay (s)		5.4	5.8		33.4	
Level of Service		A	A		C	
Approach Delay (s)		5.4	5.8		33.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

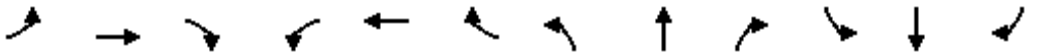
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	581	45	1011	976	67	0
Future Volume (vph)	581	45	1011	976	67	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.3	4.0	3.5	
Lane Util. Factor	0.97		0.95	1.00	1.00	
Frt	0.99		1.00	0.85	1.00	
Flt Protected	0.96		1.00	1.00	0.95	
Satd. Flow (prot)	3416		3539	1583	1770	
Flt Permitted	0.96		1.00	1.00	0.95	
Satd. Flow (perm)	3416		3539	1583	1770	
Peak-hour factor, PHF	0.90	0.90	0.92	0.92	0.88	0.88
Adj. Flow (vph)	646	50	1099	1061	76	0
RTOR Reduction (vph)	11	0	0	0	0	0
Lane Group Flow (vph)	685	0	1099	1061	76	0
Turn Type	Prot		NA	Free	Prot	
Protected Phases	3		2		1	
Permitted Phases				Free		
Actuated Green, G (s)	10.0		26.3	55.0	4.9	
Effective Green, g (s)	10.0		26.3	55.0	4.9	
Actuated g/C Ratio	0.18		0.48	1.00	0.09	
Clearance Time (s)	5.0		5.3		3.5	
Vehicle Extension (s)	3.0		5.0		3.0	
Lane Grp Cap (vph)	621		1692	1583	157	
v/s Ratio Prot	c0.20		0.31		0.04	
v/s Ratio Perm				c0.67		
v/c Ratio	1.10		0.65	0.67	0.48	
Uniform Delay, d1	22.5		10.9	0.0	23.8	
Progression Factor	1.00		1.49	1.00	1.00	
Incremental Delay, d2	67.9		0.5	0.6	2.3	
Delay (s)	90.4		16.7	0.6	26.2	
Level of Service	F		B	A	C	
Approach Delay (s)	90.4		8.8			26.2
Approach LOS	F		A			C

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

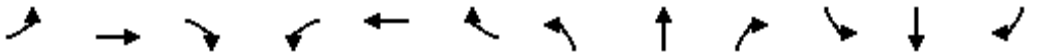
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	384	134	75	274	135	199	875	76	137	491	16
Future Volume (vph)	21	384	134	75	274	135	199	875	76	137	491	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		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)	1747	3384		1770	3539	1533	1770	3539	1583	1770	3539	1535
Flt Permitted	0.55	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1004	3384		1770	3539	1533	1770	3539	1583	1770	3539	1535
Peak-hour factor, PHF	0.88	0.88	0.88	0.80	0.80	0.80	0.90	0.90	0.90	0.89	0.89	0.89
Adj. Flow (vph)	24	436	152	94	342	169	221	972	84	154	552	18
RTOR Reduction (vph)	0	34	0	0	0	110	0	0	40	0	0	11
Lane Group Flow (vph)	24	554	0	94	343	59	221	972	44	154	552	7
Confl. Peds. (#/hr)	16		7	7		16	13					13
Confl. Bikes (#/hr)												5
Turn Type	Perm	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases		4		3	8		5	2	3	1	6	
Permitted Phases	4					8			2			6
Actuated Green, G (s)	23.4	23.4		9.3	37.2	37.2	17.6	45.8	55.1	12.5	40.7	40.7
Effective Green, g (s)	24.4	24.4		10.8	38.2	38.2	19.1	48.8	58.1	14.0	43.7	43.7
Actuated g/C Ratio	0.22	0.22		0.10	0.35	0.35	0.17	0.44	0.53	0.13	0.40	0.40
Clearance Time (s)	4.0	4.0		4.5	4.0	4.0	4.5	6.0	4.5	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5		2.0	2.5	2.5	2.0	5.0	2.0	2.0	5.0	5.0
Lane Grp Cap (vph)	222	750		173	1228	532	307	1570	836	225	1405	609
v/s Ratio Prot		c0.16		c0.05	0.10		c0.12	c0.27	0.01	0.09	0.16	
v/s Ratio Perm	0.02					0.04			0.02			0.00
v/c Ratio	0.11	0.74		0.54	0.28	0.11	0.72	0.62	0.05	0.68	0.39	0.01
Uniform Delay, d1	34.1	39.8		47.3	26.0	24.4	42.9	23.5	12.6	45.9	23.7	20.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.36	1.00	1.39	1.33	0.82	1.00
Incremental Delay, d2	0.2	3.6		1.9	0.1	0.1	5.6	1.6	0.0	6.1	0.7	0.0
Delay (s)	34.3	43.4		49.1	26.0	24.4	63.9	25.1	17.6	67.1	20.2	20.1
Level of Service	C	D		D	C	C	E	C	B	E	C	C
Approach Delay (s)		43.1			29.2			31.3			30.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

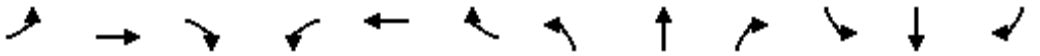
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	564	124	82	17	103	50	90	734	56	54	324	483
Future Volume (vph)	564	124	82	17	103	50	90	734	56	54	324	483
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	6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.92		1.00	1.00	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1737	1455		1850	1583	1770	3490		1770	3539	1516
Flt Permitted	0.95	0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1737	1455		1850	1583	1770	3490		1770	3539	1516
Peak-hour factor, PHF	0.90	0.90	0.90	0.67	0.67	0.67	0.93	0.93	0.93	0.87	0.87	0.87
Adj. Flow (vph)	627	138	91	25	154	75	97	789	60	62	372	555
RTOR Reduction (vph)	0	0	42	0	0	66	0	3	0	0	0	222
Lane Group Flow (vph)	545	220	49	0	179	9	97	846	0	62	372	333
Confl. Peds. (#/hr)			25	25			24		6	6		24
Confl. Bikes (#/hr)			1									3
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	59.3	59.3	73.6		22.0	22.0	14.3	50.3		9.8	45.8	105.1
Effective Green, g (s)	59.3	59.3	73.6		22.0	22.0	14.3	50.3		9.8	45.8	105.1
Actuated g/C Ratio	0.34	0.34	0.42		0.13	0.13	0.08	0.29		0.06	0.26	0.60
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0		3.0	3.0	2.0	5.0		2.0	5.0	2.0
Lane Grp Cap (vph)	569	588	611		232	199	144	1003		99	926	910
v/s Ratio Prot	c0.32	0.13	0.01		c0.10		c0.05	c0.24		0.04	0.11	0.12
v/s Ratio Perm			0.03			0.01						0.10
v/c Ratio	0.96	0.37	0.08		0.77	0.05	0.67	0.84		0.63	0.40	0.37
Uniform Delay, d1	56.6	43.8	30.4		74.1	67.3	78.1	58.7		80.8	53.3	17.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	27.0	0.1	0.0		14.6	0.1	9.4	7.3		8.6	0.6	0.1
Delay (s)	83.6	43.9	30.4		88.7	67.4	87.4	65.9		89.4	53.9	18.0
Level of Service	F	D	C		F	E	F	E		F	D	B
Approach Delay (s)		67.8			82.4			68.1			36.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	175.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



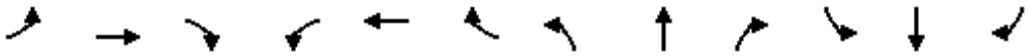
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	305	235	111	253	77	226	844	331	97	349	45
Future Volume (vph)	45	305	235	111	253	77	226	844	331	97	349	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.1		4.0	4.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1552	1770	1788		1770	3361		1770	3458	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1552	1770	1788		1770	3361		1770	3458	
Peak-hour factor, PHF	0.97	0.97	0.97	0.90	0.90	0.90	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	46	314	242	123	281	86	248	927	364	108	388	50
RTOR Reduction (vph)	0	0	102	0	10	0	0	33	0	0	7	0
Lane Group Flow (vph)	46	314	140	123	357	0	248	1258	0	108	431	0
Confl. Peds. (#/hr)	8		8	8		8	12		4	4		12
Confl. Bikes (#/hr)						1						3
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	7.2	24.7	45.1	12.5	30.0		20.4	51.4		10.3	41.3	
Effective Green, g (s)	7.2	24.7	45.1	12.5	30.0		20.4	51.4		10.3	41.3	
Actuated g/C Ratio	0.06	0.21	0.39	0.11	0.26		0.18	0.45		0.09	0.36	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.1		4.0	4.1	
Vehicle Extension (s)	3.0	3.0	2.0	3.0	2.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	110	400	662	192	466		313	1502		158	1241	
v/s Ratio Prot	0.03	0.17	0.04	c0.07	c0.20		c0.14	c0.37		0.06	0.12	
v/s Ratio Perm			0.05									
v/c Ratio	0.42	0.79	0.21	0.64	0.77		0.79	0.84		0.68	0.35	
Uniform Delay, d1	51.9	42.6	23.2	49.1	39.3		45.3	28.1		50.8	27.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.20	0.83	
Incremental Delay, d2	2.6	9.7	0.1	7.1	6.7		12.0	5.7		9.3	0.8	
Delay (s)	54.4	52.4	23.2	56.2	46.0		57.3	33.9		70.1	23.3	
Level of Service	D	D	C	E	D		E	C		E	C	
Approach Delay (s)		40.8			48.5			37.6			32.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	15	8	332	80	0	58	880	383	357	361	12
Future Volume (vph)	5	15	8	332	80	0	58	880	383	357	361	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor		0.95		0.91	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00		1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3313		1610	3279		1770	3539	1543	1770	3519	
Flt Permitted		0.99		0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3313		1610	3279		1770	3539	1543	1770	3519	
Peak-hour factor, PHF	0.78	0.78	0.78	0.90	0.90	0.90	0.94	0.94	0.94	0.85	0.85	0.85
Adj. Flow (vph)	6	19	10	369	89	0	62	936	407	420	425	14
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	141	0	1	0
Lane Group Flow (vph)	0	26	0	184	274	0	62	936	266	420	438	0
Confl. Peds. (#/hr)	1		20	20		1	8		14	14		8
Turn Type	Split	NA		Split	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases									2			
Actuated Green, G (s)		6.0		17.5	17.5		8.0	42.1	59.6	30.9	64.5	
Effective Green, g (s)		7.0		19.5	19.5		10.0	44.1	63.6	32.4	66.5	
Actuated g/C Ratio		0.06		0.17	0.17		0.09	0.38	0.55	0.28	0.58	
Clearance Time (s)		4.0		5.0	5.0		5.0	5.0	5.0	4.5	5.0	
Vehicle Extension (s)		2.0		2.0	2.0		2.0	5.0	2.0	2.0	5.0	
Lane Grp Cap (vph)		201		273	556		153	1357	853	498	2034	
v/s Ratio Prot		c0.01		c0.11	0.08		0.04	c0.26	0.05	c0.24	0.12	
v/s Ratio Perm									0.12			
v/c Ratio		0.13		0.67	0.49		0.41	0.69	0.31	0.84	0.22	
Uniform Delay, d1		51.1		44.8	43.3		49.7	29.7	13.9	38.9	11.7	
Progression Factor		1.00		0.92	0.91		0.76	0.71	3.05	0.62	0.66	
Incremental Delay, d2		0.1		4.9	0.2		0.5	2.3	0.1	11.3	0.2	
Delay (s)		51.2		46.2	39.8		38.5	23.5	42.5	35.5	8.0	
Level of Service		D		D	D		D	C	D	D	A	
Approach Delay (s)		51.2			42.4			29.6			21.4	
Approach LOS		D			D			C			C	

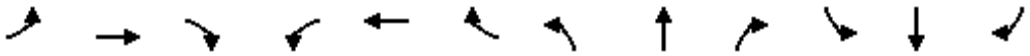
Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	102	67	107	136	235	43	1006	66	82	501	52
Future Volume (vph)	88	102	67	107	136	235	43	1006	66	82	501	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	3.5	4.0		3.5	4.0	
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99		1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3311		1681	1763	1554	1770	3498		1770	3465	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3311		1681	1763	1554	1770	3498		1770	3465	
Peak-hour factor, PHF	0.81	0.81	0.81	0.95	0.95	0.95	0.93	0.93	0.93	0.90	0.90	0.90
Adj. Flow (vph)	109	126	83	113	143	247	46	1082	71	91	557	58
RTOR Reduction (vph)	0	33	0	0	0	211	0	3	0	0	5	0
Lane Group Flow (vph)	0	285	0	102	154	36	46	1150	0	91	610	0
Confl. Peds. (#/hr)	5		17	17		5	23		23	23		23
Confl. Bikes (#/hr)			1									1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		18.0		16.8	16.8	16.8	7.1	54.5		10.2	57.6	
Effective Green, g (s)		18.0		16.8	16.8	16.8	7.1	54.5		10.2	57.6	
Actuated g/C Ratio		0.16		0.15	0.15	0.15	0.06	0.47		0.09	0.50	
Clearance Time (s)		4.0		4.0	4.0	4.0	3.5	4.0		3.5	4.0	
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		518		245	257	227	109	1657		156	1735	
v/s Ratio Prot		c0.09		0.06	c0.09		0.03	c0.33		c0.05	c0.18	
v/s Ratio Perm						0.02						
v/c Ratio		0.55		0.42	0.60	0.16	0.42	0.69		0.58	0.35	
Uniform Delay, d1		44.8		44.6	45.9	42.9	52.0	23.7		50.4	17.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.25	0.68	
Incremental Delay, d2		1.6		1.6	4.4	0.4	2.6	2.4		4.9	0.5	
Delay (s)		46.3		46.2	50.3	43.4	54.6	26.1		67.7	12.3	
Level of Service		D		D	D	D	D	C		E	B	
Approach Delay (s)		46.3			46.1			27.2			19.5	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

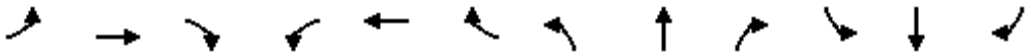
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	207	60	128	180	138	30	858	118	86	610	98
Future Volume (vph)	193	207	60	128	180	138	30	858	118	86	610	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.96	1.00		0.97	1.00		0.97	1.00		0.99	1.00	
Frt	1.00	0.97		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1699	1771		1715	1660		1719	3451		1760	3410	
Flt Permitted	0.32	1.00		0.40	1.00		0.33	1.00		0.21	1.00	
Satd. Flow (perm)	579	1771		719	1660		595	3451		390	3410	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	224	241	70	149	209	160	32	913	126	89	629	101
RTOR Reduction (vph)	0	11	0	0	27	0	0	11	0	0	13	0
Lane Group Flow (vph)	224	300	0	149	342	0	32	1028	0	89	717	0
Confl. Peds. (#/hr)	78		51	51		78	37		14	14		37
Confl. Bikes (#/hr)			3			14			1			1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.0	33.0		33.0	33.0		59.0	59.0		59.0	59.0	
Effective Green, g (s)	33.0	33.0		33.0	33.0		59.0	59.0		59.0	59.0	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.59	0.59		0.59	0.59	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	191	584		237	547		351	2036		230	2011	
v/s Ratio Prot		0.17			0.21			c0.30			0.21	
v/s Ratio Perm	c0.39			0.21			0.05			0.23		
v/c Ratio	1.17	0.51		0.63	0.62		0.09	0.51		0.39	0.36	
Uniform Delay, d1	33.5	27.0		28.3	28.3		8.9	12.0		10.9	10.6	
Progression Factor	1.00	1.00		1.00	1.00		0.56	0.65		0.60	0.60	
Incremental Delay, d2	119.4	0.8		5.1	2.2		0.4	0.8		4.7	0.5	
Delay (s)	152.9	27.8		33.5	30.5		5.4	8.5		11.2	6.9	
Level of Service	F	C		C	C		A	A		B	A	
Approach Delay (s)		80.2			31.3			8.4			7.3	
Approach LOS		F			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

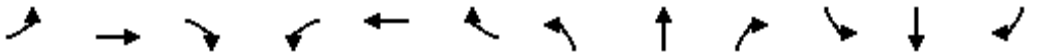
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	165	173	40	147	135	86	1091	32	62	386	46
Future Volume (vph)	531	165	173	40	147	135	86	1091	32	62	386	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.0		3.5	4.0		3.5	4.0	
Lane Util. Factor	0.97	1.00		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.93		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1698		1770	3285		1770	3522		1770	3474	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1698		1770	3285		1770	3522		1770	3474	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.89	0.89	0.89	0.86	0.86	0.86
Adj. Flow (vph)	603	188	197	45	167	153	97	1226	36	72	449	53
RTOR Reduction (vph)	0	27	0	0	132	0	0	1	0	0	5	0
Lane Group Flow (vph)	603	358	0	45	188	0	97	1261	0	72	497	0
Confl. Peds. (#/hr)			13	13			13		8	8		13
Confl. Bikes (#/hr)									3			
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	21.8	29.0		5.9	13.6		8.5	41.1		7.3	39.9	
Effective Green, g (s)	21.8	29.0		5.9	13.6		8.5	41.1		7.3	39.9	
Actuated g/C Ratio	0.22	0.29		0.06	0.14		0.09	0.42		0.07	0.40	
Clearance Time (s)	3.5	4.5		3.5	4.0		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	2.0	4.0		2.0	4.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	757	498		105	452		152	1465		130	1402	
v/s Ratio Prot	c0.18	c0.21		0.03	0.06		c0.05	c0.36		0.04	0.14	
v/s Ratio Perm												
v/c Ratio	0.80	0.72		0.43	0.42		0.64	0.86		0.55	0.35	
Uniform Delay, d1	36.4	31.3		44.8	39.0		43.7	26.2		44.2	20.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.4	5.3		1.0	0.8		6.3	5.6		2.9	0.2	
Delay (s)	41.9	36.5		45.8	39.8		50.0	31.8		47.1	20.7	
Level of Service	D	D		D	D		D	C		D	C	
Approach Delay (s)		39.8			40.6			33.1			24.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	15.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

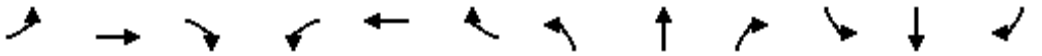
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	115	216	69	107	61	230	885	99	58	410	93
Future Volume (vph)	239	115	216	69	107	61	230	885	99	58	410	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.94	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1548	1770	1744		1770	3539	1490	1770	3539	1497
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1548	1770	1744		1770	3539	1490	1770	3539	1497
Peak-hour factor, PHF	0.93	0.93	0.93	0.79	0.79	0.79	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	257	124	232	87	135	77	242	932	104	62	436	99
RTOR Reduction (vph)	0	0	180	0	23	0	0	0	55	0	0	62
Lane Group Flow (vph)	257	124	52	87	189	0	242	932	49	62	436	37
Confl. Peds. (#/hr)	16		11	11		16	18		18	18		18
Confl. Bikes (#/hr)									5			2
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.1	22.5	22.5	8.1	19.5		16.8	47.4	47.4	7.0	37.6	37.6
Effective Green, g (s)	11.1	22.5	22.5	8.1	19.5		16.8	47.4	47.4	7.0	37.6	37.6
Actuated g/C Ratio	0.11	0.22	0.22	0.08	0.20		0.17	0.47	0.47	0.07	0.38	0.38
Clearance Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	381	419	348	143	340		297	1677	706	123	1330	562
v/s Ratio Prot	c0.07	c0.07		0.05	c0.11		c0.14	c0.26		0.04	0.12	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.67	0.30	0.15	0.61	0.56		0.81	0.56	0.07	0.50	0.33	0.07
Uniform Delay, d1	42.7	32.2	31.1	44.4	36.4		40.1	18.8	14.3	44.8	22.2	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.04	0.53	0.21	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.5	0.3	4.9	2.4		13.1	1.2	0.2	1.2	0.7	0.2
Delay (s)	46.4	32.7	31.4	49.4	38.8		54.9	11.0	3.1	46.0	22.9	20.2
Level of Service	D	C	C	D	D		D	B	A	D	C	C
Approach Delay (s)		37.9			41.9			18.7			24.8	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

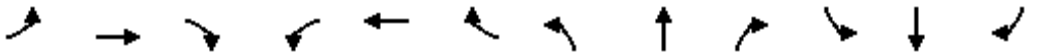
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	0	846	69	390	109	419	966	0	0	552	140
Future Volume (vph)	220	0	846	69	390	109	419	966	0	0	552	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6		4.1	4.6	4.6	4.6	4.1	4.5			4.5	4.5
Lane Util. Factor	1.00		0.88	1.00	0.91	0.91	0.97	0.91			0.95	1.00
Frpb, ped/bikes	1.00		0.98	1.00	1.00	0.93	1.00	1.00			1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770		2741	1770	3390	1344	3433	5085			3539	1502
Flt Permitted	0.95		1.00	0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)	1770		2741	1770	3390	1344	3433	5085			3539	1502
Peak-hour factor, PHF	0.87	0.87	0.87	0.84	0.84	0.84	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	0	972	82	464	130	455	1050	0	0	600	152
RTOR Reduction (vph)	0	0	392	0	0	76	0	0	0	0	0	72
Lane Group Flow (vph)	253	0	580	82	464	54	455	1050	0	0	600	80
Confl. Peds. (#/hr)	57		7	7		57	35		35	35		35
Confl. Bikes (#/hr)			2			2			2			1
Turn Type	Prot		pm+ov	Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases	4		5	3	3		5	2			6	
Permitted Phases			4			3						6
Actuated Green, G (s)	21.0		40.7	30.4	30.4	30.4	19.7	50.2			26.4	26.4
Effective Green, g (s)	21.0		40.7	30.4	30.4	30.4	19.7	50.2			26.4	26.4
Actuated g/C Ratio	0.18		0.35	0.26	0.26	0.26	0.17	0.44			0.23	0.23
Clearance Time (s)	4.6		4.1	4.6	4.6	4.6	4.1	4.5			4.5	4.5
Vehicle Extension (s)	1.2		1.0	1.0	1.0	1.0	1.0	3.0			3.0	3.0
Lane Grp Cap (vph)	322		967	466	893	354	586	2213			810	343
v/s Ratio Prot	c0.14		0.10	0.05	c0.14		c0.13	0.21			c0.17	
v/s Ratio Perm			0.11			0.04						0.05
v/c Ratio	0.79		0.60	0.18	0.52	0.15	0.78	0.47			0.74	0.23
Uniform Delay, d1	45.0		30.6	32.8	36.2	32.6	45.7	23.2			41.3	36.2
Progression Factor	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	11.0		0.7	0.1	0.2	0.1	5.8	0.2			3.7	0.4
Delay (s)	56.0		31.3	32.8	36.4	32.6	51.5	23.3			44.9	36.6
Level of Service	E		C	C	D	C	D	C			D	D
Approach Delay (s)		36.4			35.3			31.9			43.2	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	17.8
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

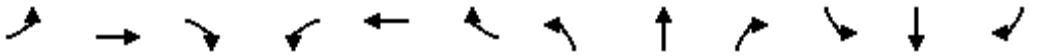
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	142	114	59	214	75	133	837	89	61	506	32
Future Volume (vph)	98	142	114	59	214	75	133	837	89	61	506	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7		3.7	4.1		3.7	4.1	4.1
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1764	1863	1538	1753	3385		1770	3464		1770	3539	1538
Flt Permitted	0.41	1.00	1.00	0.47	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	754	1863	1538	867	3385		1770	3464		1770	3539	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.95	0.95	0.95	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	110	160	128	62	225	79	148	930	99	64	527	33
RTOR Reduction (vph)	0	0	106	0	33	0	0	6	0	0	0	13
Lane Group Flow (vph)	110	160	22	62	271	0	148	1023	0	64	527	20
Confl. Peds. (#/hr)	5		12	12		5	13		23	23		13
Confl. Bikes (#/hr)			3			1			6			1
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	19.5	19.5	19.5	19.5	19.5		14.5	74.0		9.0	68.5	68.5
Effective Green, g (s)	19.5	19.5	19.5	19.5	19.5		14.5	74.0		9.0	68.5	68.5
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17		0.13	0.65		0.08	0.60	0.60
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	4.1		3.7	4.1	4.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)	128	318	263	148	579		225	2248		139	2126	924
v/s Ratio Prot		0.09			0.08		c0.08	c0.30		0.04	0.15	
v/s Ratio Perm	c0.15		0.01	0.07								0.01
v/c Ratio	0.86	0.50	0.08	0.42	0.47		0.66	0.46		0.46	0.25	0.02
Uniform Delay, d1	45.9	42.9	39.7	42.2	42.6		47.4	10.0		50.2	10.7	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.61	2.16		1.00	1.00	1.00
Incremental Delay, d2	38.9	0.5	0.0	0.7	0.2		4.6	0.6		0.9	0.3	0.0
Delay (s)	84.8	43.3	39.8	42.9	42.8		33.6	22.1		51.1	10.9	9.2
Level of Service	F	D	D	D	D		C	C		D	B	A
Approach Delay (s)		53.6			42.8			23.6			15.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

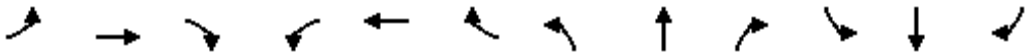
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	204	99	55	214	57	109	850	73	49	561	113
Future Volume (vph)	236	204	99	55	214	57	109	850	73	49	561	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.2	4.2		3.7		3.7	4.1		3.7	4.1	
Lane Util. Factor	0.95	0.95	1.00		0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95		0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		0.97		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1770	1505		3376		1770	3462		1770	3431	
Flt Permitted	0.95	1.00	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1770	1505		3376		1770	3462		1770	3431	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.94	0.94	0.94	0.84	0.84	0.84
Adj. Flow (vph)	278	240	116	57	221	59	116	904	78	58	668	135
RTOR Reduction (vph)	0	0	91	0	15	0	0	4	0	0	12	0
Lane Group Flow (vph)	278	240	25	0	322	0	116	978	0	58	791	0
Confl. Peds. (#/hr)	43		30	30		43	16		32	32		16
Confl. Bikes (#/hr)			3			5			8			3
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases			4									
Actuated Green, G (s)	27.1	27.1	27.1		26.3		12.0	47.5		8.4	43.9	
Effective Green, g (s)	27.1	27.1	27.1		26.3		12.0	47.5		8.4	43.9	
Actuated g/C Ratio	0.22	0.22	0.22		0.21		0.10	0.38		0.07	0.35	
Clearance Time (s)	4.2	4.2	4.2		3.7		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	2.0	2.0	2.0		2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	364	383	326		710		169	1315		118	1204	
v/s Ratio Prot	c0.17	0.14			c0.10		0.07	c0.28		0.03	c0.23	
v/s Ratio Perm			0.02									
v/c Ratio	0.76	0.63	0.08		0.45		0.69	0.74		0.49	0.66	
Uniform Delay, d1	45.9	44.4	39.0		43.1		54.7	33.5		56.2	34.2	
Progression Factor	1.00	1.00	1.00		1.00		0.64	0.53		1.00	1.00	
Incremental Delay, d2	8.3	2.3	0.0		0.2		7.2	3.1		1.2	2.8	
Delay (s)	54.2	46.7	39.0		43.2		42.4	20.7		57.4	37.0	
Level of Service	D	D	D		D		D	C		E	D	
Approach Delay (s)		48.6			43.2			23.0			38.4	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

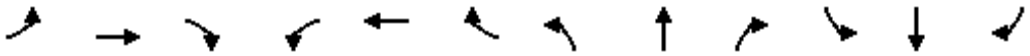
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	112	29	101	155	116	71	872	104	98	628	8
Future Volume (vph)	19	112	29	101	155	116	71	872	104	98	628	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.7		3.7	4.7		3.7	4.1		3.7	4.1	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1779		1770	1687		1770	3429		1770	3529	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1779		1770	1687		1770	3429		1770	3529	
Peak-hour factor, PHF	0.77	0.77	0.77	0.81	0.81	0.81	0.99	0.99	0.99	0.91	0.91	0.91
Adj. Flow (vph)	25	145	38	125	191	143	72	881	105	108	690	9
RTOR Reduction (vph)	0	8	0	0	20	0	0	7	0	0	1	0
Lane Group Flow (vph)	25	175	0	125	314	0	72	979	0	108	698	0
Confl. Peds. (#/hr)	46		40	40		46	39		43	43		39
Confl. Bikes (#/hr)			1			1			8			1
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	6.6	26.9		13.5	33.8		9.4	55.6		12.8	59.0	
Effective Green, g (s)	6.6	26.9		13.5	33.8		9.4	55.6		12.8	59.0	
Actuated g/C Ratio	0.05	0.22		0.11	0.27		0.08	0.44		0.10	0.47	
Clearance Time (s)	3.7	4.7		3.7	4.7		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	93	382		191	456		133	1525		181	1665	
v/s Ratio Prot	0.01	0.10		c0.07	c0.19		0.04	c0.29		c0.06	c0.20	
v/s Ratio Perm												
v/c Ratio	0.27	0.46		0.65	0.69		0.54	0.64		0.60	0.42	
Uniform Delay, d1	56.9	42.7		53.5	40.9		55.7	27.0		53.6	21.7	
Progression Factor	1.00	1.00		1.00	1.00		1.35	0.23		1.34	0.31	
Incremental Delay, d2	1.6	0.9		7.8	4.3		3.1	1.5		4.3	0.6	
Delay (s)	58.4	43.6		61.3	45.2		78.3	7.6		76.1	7.5	
Level of Service	E	D		E	D		E	A		E	A	
Approach Delay (s)		45.4			49.6			12.4			16.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

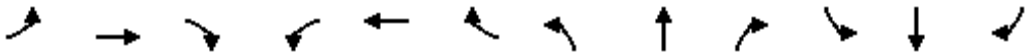
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	188	290	120	193	119	327	842	118	124	583	38
Future Volume (vph)	27	188	290	120	193	119	327	842	118	124	583	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	4.7	4.7	4.7		4.7	5.1		4.7	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.89	1.00	0.98		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1407	1770	1722		1770	3426		1770	3473	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1407	1770	1722		1770	3426		1770	3473	
Peak-hour factor, PHF	0.85	0.85	0.85	0.97	0.97	0.97	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	32	221	341	124	199	123	344	886	124	136	641	42
RTOR Reduction (vph)	0	0	245	0	16	0	0	8	0	0	4	0
Lane Group Flow (vph)	32	221	96	124	306	0	344	1002	0	136	679	0
Confl. Peds. (#/hr)	30		84	84		30	51		34	34		51
Confl. Bikes (#/hr)			9			7			10			6
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4									
Actuated Green, G (s)	6.1	35.3	35.3	11.0	40.2		24.5	46.2		13.3	35.0	
Effective Green, g (s)	6.1	35.3	35.3	11.0	40.2		24.5	46.2		13.3	35.0	
Actuated g/C Ratio	0.05	0.28	0.28	0.09	0.32		0.20	0.37		0.11	0.28	
Clearance Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	5.1		4.7	5.1	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	86	526	397	155	553		346	1266		188	972	
v/s Ratio Prot	0.02	0.12		c0.07	c0.18		c0.19	c0.29		0.08	c0.20	
v/s Ratio Perm			0.07									
v/c Ratio	0.37	0.42	0.24	0.80	0.55		0.99	0.79		0.72	0.70	
Uniform Delay, d1	57.6	36.5	34.6	55.9	35.0		50.2	35.1		54.1	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.89	1.03		0.70	0.64	
Incremental Delay, d2	2.7	0.5	0.3	24.8	1.2		43.4	4.5		11.9	3.8	
Delay (s)	60.3	37.1	34.9	80.7	36.2		88.3	40.7		49.8	29.5	
Level of Service	E	D	C	F	D		F	D		D	C	
Approach Delay (s)		37.1			48.6			52.8			32.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

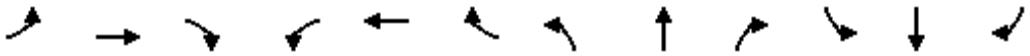
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	228	101	121	192	143	31	792	117	107	664	74
Future Volume (vph)	136	228	101	121	192	143	31	792	117	107	664	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.1		3.7	4.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.89	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1426	1770	1863	1404	1770	3422		1770	3456	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1426	1770	1863	1404	1770	3422		1770	3456	
Peak-hour factor, PHF	0.85	0.85	0.85	0.94	0.94	0.94	0.95	0.95	0.95	0.88	0.88	0.88
Adj. Flow (vph)	160	268	119	129	204	152	33	834	123	122	755	84
RTOR Reduction (vph)	0	0	85	0	0	84	0	8	0	0	6	0
Lane Group Flow (vph)	160	268	34	129	204	68	33	949	0	122	833	0
Confl. Peds. (#/hr)	74		59	59		74	28		37	37		28
Confl. Bikes (#/hr)			7			8			7			3
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			7			8						
Actuated Green, G (s)	25.7	25.7	25.7	26.6	26.6	26.6	7.4	48.0		14.5	55.1	
Effective Green, g (s)	25.7	25.7	25.7	26.6	26.6	26.6	7.4	48.0		14.5	55.1	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.06	0.37		0.11	0.42	
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.1		3.7	4.1	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	349	368	281	362	381	287	100	1263		197	1464	
v/s Ratio Prot	0.09	c0.14		0.07	c0.11		0.02	c0.28		c0.07	0.24	
v/s Ratio Perm			0.02			0.05						
v/c Ratio	0.46	0.73	0.12	0.36	0.54	0.24	0.33	0.75		0.62	0.57	
Uniform Delay, d1	46.0	48.9	42.9	44.4	46.2	43.2	58.9	35.8		55.1	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.87		0.94	0.90	
Incremental Delay, d2	1.0	7.0	0.2	0.6	1.4	0.4	1.9	4.0		5.5	1.5	
Delay (s)	47.0	55.9	43.1	45.0	47.6	43.6	55.9	35.1		57.2	27.3	
Level of Service	D	E	D	D	D	D	E	D		E	C	
Approach Delay (s)		50.5			45.7			35.8			31.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

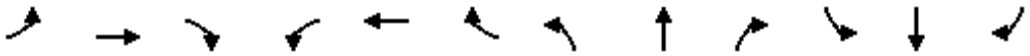
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	536	307	127	624	113	262	791	112	99	668	20
Future Volume (vph)	36	536	307	127	624	113	262	791	112	99	668	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7		3.7	4.1		3.7	4.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1502	1770	3445		1770	3462		1770	3522	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1502	1770	3445		1770	3462		1770	3522	
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	38	558	320	135	664	120	276	833	118	105	711	21
RTOR Reduction (vph)	0	0	249	0	11	0	0	8	0	0	2	0
Lane Group Flow (vph)	38	558	71	135	773	0	276	943	0	105	730	0
Confl. Peds. (#/hr)	4		19	19		4	7		7	7		7
Confl. Bikes (#/hr)			15			9			7			4
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	8.8	28.9	28.9	13.7	33.8		21.9	56.9		15.3	50.3	
Effective Green, g (s)	8.8	28.9	28.9	13.7	33.8		21.9	56.9		15.3	50.3	
Actuated g/C Ratio	0.07	0.22	0.22	0.11	0.26		0.17	0.44		0.12	0.39	
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	119	786	333	186	895		298	1515		208	1362	
v/s Ratio Prot	0.02	0.16		c0.08	c0.22		c0.16	c0.27		0.06	c0.21	
v/s Ratio Perm			0.05									
v/c Ratio	0.32	0.71	0.21	0.73	0.86		0.93	0.62		0.50	0.54	
Uniform Delay, d1	57.7	46.7	41.3	56.3	45.9		53.3	28.2		53.8	30.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.92		0.83	0.73	
Incremental Delay, d2	1.6	3.0	0.3	13.1	8.7		31.9	1.8		1.8	1.5	
Delay (s)	59.3	49.6	41.6	69.5	54.6		82.5	27.7		46.7	23.8	
Level of Service	E	D	D	E	D		F	C		D	C	
Approach Delay (s)		47.2			56.7			40.1			26.7	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.2
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

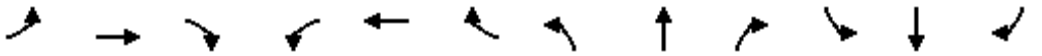
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	316	121	34	260	75	199	902	44	86	665	114
Future Volume (vph)	140	316	121	34	260	75	199	902	44	86	665	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		4.0	4.5		4.0	4.5	
Lane Util. Factor		0.95			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.97		1.00	0.99		1.00	0.98	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3342			1783		1770	3498		1770	3424	
Flt Permitted		0.64			0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		2179			1475		1770	3498		1770	3424	
Peak-hour factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	171	385	148	37	286	82	212	960	47	91	700	120
RTOR Reduction (vph)	0	27	0	0	11	0	0	3	0	0	14	0
Lane Group Flow (vph)	0	677	0	0	394	0	212	1004	0	91	806	0
Confl. Peds. (#/hr)	39		29	29		39	22		30	30		22
Confl. Bikes (#/hr)			4			5			2			1
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.9			29.9		14.2	38.6		8.0	32.4	
Effective Green, g (s)		29.9			29.9		14.2	38.6		8.0	32.4	
Actuated g/C Ratio		0.33			0.33		0.16	0.43		0.09	0.36	
Clearance Time (s)		5.0			5.0		4.0	4.5		4.0	4.5	
Vehicle Extension (s)		2.0			2.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		723			490		279	1500		157	1232	
v/s Ratio Prot							c0.12	c0.29		0.05	0.24	
v/s Ratio Perm		c0.31			0.27							
v/c Ratio		0.94			0.80		0.76	0.67		0.58	0.65	
Uniform Delay, d1		29.1			27.4		36.3	20.6		39.4	24.1	
Progression Factor		1.00			1.00		1.44	0.48		1.00	1.00	
Incremental Delay, d2		19.1			8.8		3.5	0.8		3.2	2.7	
Delay (s)		48.2			36.2		55.9	10.6		42.6	26.8	
Level of Service		D			D		E	B		D	C	
Approach Delay (s)		48.2			36.2			18.5			28.4	
Approach LOS		D			D			B			C	

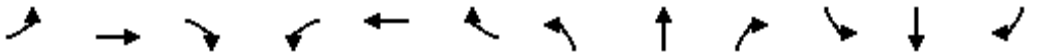
Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



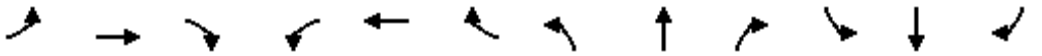
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	62	13	35	135	150	23	942	44	80	743	24
Future Volume (vph)	37	62	13	35	135	150	23	942	44	80	743	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	10	10	12	12	12	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	4.5		4.0	4.5	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.95		1.00	0.94	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.99	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1693	1410		1713	1387	1770	3492		1770	3515	
Flt Permitted		0.68	1.00		0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1179	1410		1572	1387	1770	3492		1770	3515	
Peak-hour factor, PHF	0.85	0.85	0.85	0.78	0.78	0.78	0.97	0.97	0.97	0.88	0.88	0.88
Adj. Flow (vph)	44	73	15	45	173	192	24	971	45	91	844	27
RTOR Reduction (vph)	0	0	12	0	0	121	0	3	0	0	2	0
Lane Group Flow (vph)	0	117	3	0	218	71	24	1013	0	91	869	0
Confl. Peds. (#/hr)	27		23	23		27	21		56	56		21
Confl. Bikes (#/hr)			8			17			4			6
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		17.7	17.7		17.7	17.7	2.8	50.8		8.0	56.0	
Effective Green, g (s)		17.7	17.7		17.7	17.7	2.8	50.8		8.0	56.0	
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.03	0.56		0.09	0.62	
Clearance Time (s)		5.0	5.0		5.0	5.0	4.0	4.5		4.0	4.5	
Vehicle Extension (s)		2.0	2.0		2.0	2.0	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		231	277		309	272	55	1971		157	2187	
v/s Ratio Prot							0.01	c0.29		c0.05	0.25	
v/s Ratio Perm		0.10	0.00		c0.14	0.05						
v/c Ratio		0.51	0.01		0.71	0.26	0.44	0.51		0.58	0.40	
Uniform Delay, d1		32.3	29.1		33.7	30.6	42.8	12.0		39.4	8.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.51	0.39	
Incremental Delay, d2		0.6	0.0		5.9	0.2	2.0	1.0		2.8	0.5	
Delay (s)		32.9	29.1		39.6	30.8	44.8	13.0		62.3	3.8	
Level of Service		C	C		D	C	D	B		E	A	
Approach Delay (s)		32.5			35.5			13.7			9.3	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	723	77	88	752	129	124	745	106	156	599	86
Future Volume (vph)	114	723	77	88	752	129	124	745	106	156	599	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.2		4.0	4.2	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3437		1770	3334		1770	3424		1770	3388	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3437		1770	3334		1770	3424		1770	3388	
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	127	803	86	95	809	139	131	784	112	173	666	96
RTOR Reduction (vph)	0	6	0	0	10	0	0	9	0	0	9	0
Lane Group Flow (vph)	127	883	0	95	938	0	131	887	0	173	753	0
Confl. Peds. (#/hr)	136		42	42		139	125		70	70		125
Confl. Bikes (#/hr)						6			2			10
Bus Blockages (#/hr)	0	4	0	0	4	0	0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	13.0	47.9		11.6	46.5		12.4	38.5		15.8	41.9	
Effective Green, g (s)	13.0	47.9		11.6	46.5		12.4	38.5		15.8	41.9	
Actuated g/C Ratio	0.10	0.37		0.09	0.36		0.10	0.30		0.12	0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.2		4.0	4.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	1266		157	1192		168	1014		215	1091	
v/s Ratio Prot	c0.07	0.26		0.05	c0.28		0.07	c0.26		c0.10	c0.22	
v/s Ratio Perm												
v/c Ratio	0.72	0.70		0.61	0.79		0.78	0.87		0.80	0.69	
Uniform Delay, d1	56.7	34.9		57.0	37.3		57.5	43.5		55.6	38.4	
Progression Factor	1.51	0.46		1.00	1.00		0.87	0.94		1.00	1.00	
Incremental Delay, d2	12.2	3.0		6.4	5.3		17.9	7.6		19.2	1.9	
Delay (s)	98.0	19.1		63.4	42.6		68.0	48.3		74.8	40.3	
Level of Service	F	B		E	D		E	D		E	D	
Approach Delay (s)		28.9			44.5			50.8			46.7	
Approach LOS		C			D			D			D	

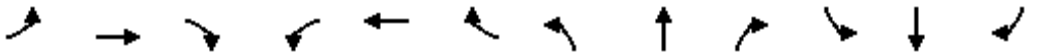
Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.2
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	386	54	62	259	100	57	898	98	142	755	26
Future Volume (vph)	61	386	54	62	259	100	57	898	98	142	755	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	12	8	8	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0	5.0	4.0	4.5		4.0	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.96	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.99			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1570			1595	1518	1770	3365		1770	3512	
Flt Permitted		0.82			0.76	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1290			1231	1518	1770	3365		1770	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.84	0.84	0.84	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	66	420	59	74	308	119	61	966	105	153	812	28
RTOR Reduction (vph)	0	4	0	0	0	32	0	7	0	0	2	0
Lane Group Flow (vph)	0	541	0	0	382	87	61	1064	0	153	838	0
Confl. Peds. (#/hr)	26		37	37		26	16		35	35		16
Confl. Bikes (#/hr)			2			4			5			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	0	8
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		46.9			46.9	46.9	7.3	38.1		11.5	42.3	
Effective Green, g (s)		46.9			46.9	46.9	7.3	38.1		11.5	42.3	
Actuated g/C Ratio		0.43			0.43	0.43	0.07	0.35		0.10	0.38	
Clearance Time (s)		5.0			5.0	5.0	4.0	4.5		4.0	4.5	
Vehicle Extension (s)		2.0			2.0	2.0	2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)		550			524	647	117	1165		185	1350	
v/s Ratio Prot							0.03	c0.32		c0.09	0.24	
v/s Ratio Perm		c0.42			0.31	0.06						
v/c Ratio		0.98			0.73	0.14	0.52	0.91		0.83	0.62	
Uniform Delay, d1		31.2			26.3	19.2	49.7	34.4		48.3	27.4	
Progression Factor		1.00			1.00	1.00	0.90	0.91		1.00	1.00	
Incremental Delay, d2		33.9			4.3	0.0	1.8	11.6		24.0	2.2	
Delay (s)		65.0			30.5	19.2	46.6	42.8		72.3	29.5	
Level of Service		E			C	B	D	D		E	C	
Approach Delay (s)		65.0			27.9			43.0			36.1	
Approach LOS		E			C			D			D	

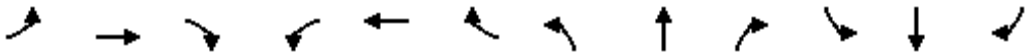
Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	616	247	15	475	141	166	949	70	194	742	90
Future Volume (vph)	71	616	247	15	475	141	166	949	70	194	742	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.99	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96			0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1758	3340			3389		1770	2200		1770	3457	
Flt Permitted	0.24	1.00			0.84		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	443	3340			2834		1770	3416		1770	3457	
Peak-hour factor, PHF	0.89	0.89	0.89	0.92	0.92	0.92	0.96	0.96	0.96	0.89	0.89	0.89
Adj. Flow (vph)	80	692	278	16	516	153	173	989	73	218	834	101
RTOR Reduction (vph)	0	45	0	0	27	0	0	4	0	0	7	0
Lane Group Flow (vph)	80	925	0	0	658	0	173	1058	0	218	928	0
Confl. Peds. (#/hr)	17		26	26		17	32		19	19		32
Confl. Bikes (#/hr)			3			2			5			20
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	36.9	36.9			36.9		15.9	46.1		14.0	44.2	
Effective Green, g (s)	36.9	36.9			36.9		15.9	46.1		14.0	44.2	
Actuated g/C Ratio	0.34	0.34			0.34		0.14	0.42		0.13	0.40	
Clearance Time (s)	4.0	4.0			4.0		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	148	1120			950		255	922		225	1389	
v/s Ratio Prot		c0.28					0.10	c0.48		c0.12	0.27	
v/s Ratio Perm	0.18				0.23							
v/c Ratio	0.54	0.83			0.69		0.68	1.15		0.97	0.67	
Uniform Delay, d1	29.7	33.6			31.6		44.6	31.9		47.8	26.9	
Progression Factor	0.92	0.91			1.00		1.30	1.13		1.00	1.00	
Incremental Delay, d2	3.7	4.7			2.2		6.0	77.5		50.6	2.6	
Delay (s)	31.1	35.3			33.8		64.1	113.7		98.3	29.5	
Level of Service	C	D			C		E	F		F	C	
Approach Delay (s)		35.0			33.8			106.8			42.5	
Approach LOS		D			C			F			D	

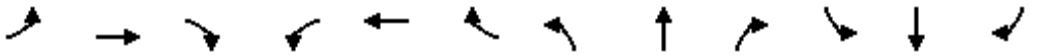
Intersection Summary			
HCM 2000 Control Delay	58.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	657	131	96	312	28	107	905	164	136	804	83
Future Volume (vph)	104	657	131	96	312	28	107	905	164	136	804	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.0		3.5	5.0		3.5	5.0		3.5	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3434		1770	3489		1770	3434		1770	3477	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3434		1770	3489		1770	3434		1770	3477	
Peak-hour factor, PHF	0.90	0.90	0.90	0.85	0.85	0.85	0.94	0.94	0.94	0.95	0.95	1.00
Adj. Flow (vph)	116	730	146	113	367	33	114	963	174	143	846	83
RTOR Reduction (vph)	0	15	0	0	6	0	0	13	0	0	6	0
Lane Group Flow (vph)	116	861	0	113	394	0	114	1124	0	143	923	0
Confl. Peds. (#/hr)	7		8	8		7	14		20	20		14
Confl. Bikes (#/hr)			6			2			16			32
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	11.5	29.0		11.5	29.0		11.5	40.2		12.3	41.0	
Effective Green, g (s)	11.5	29.0		11.5	29.0		11.5	40.2		12.3	41.0	
Actuated g/C Ratio	0.10	0.26		0.10	0.26		0.10	0.37		0.11	0.37	
Clearance Time (s)	3.5	5.0		3.5	5.0		3.5	5.0		3.5	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	185	905		185	919		185	1254		197	1295	
v/s Ratio Prot	c0.07	c0.25		0.06	0.11		0.06	c0.33		c0.08	0.27	
v/s Ratio Perm												
v/c Ratio	0.63	0.95		0.61	0.43		0.62	0.90		0.73	0.71	
Uniform Delay, d1	47.2	39.8		47.1	33.6		47.1	32.9		47.2	29.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.99	0.98	
Incremental Delay, d2	6.5	19.2		5.9	0.3		6.0	10.2		11.8	1.8	
Delay (s)	53.7	59.0		53.0	33.9		53.1	43.1		58.4	30.8	
Level of Service	D	E		D	C		D	D		E	C	
Approach Delay (s)		58.4			38.1			44.0			34.5	
Approach LOS		E			D			D			C	

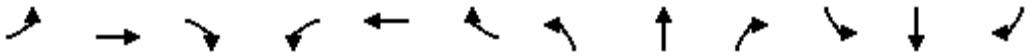
Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	577	177	57	359	153	293	804	27	183	877	171
Future Volume (vph)	179	577	177	57	359	153	293	804	27	183	877	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	4.1		3.7	4.1		3.7	4.1		3.7	4.1	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.96		1.00	0.99		1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3287		1770	3334		3433	3435		1770	3336	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3287		1770	3334		3433	3435		1770	3336	
Peak-hour factor, PHF	0.87	0.87	0.87	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	206	663	203	67	422	180	315	865	29	197	943	184
RTOR Reduction (vph)	0	26	0	0	43	0	0	2	0	0	13	0
Lane Group Flow (vph)	206	840	0	67	559	0	315	892	0	197	1114	0
Confl. Peds. (#/hr)	18		98	98		18	63		58	58		63
Confl. Bikes (#/hr)			33			10			18			23
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	8	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	20.6	35.0		8.9	23.3		16.3	40.3		16.2	40.2	
Effective Green, g (s)	20.6	35.0		8.9	23.3		16.3	40.3		16.2	40.2	
Actuated g/C Ratio	0.18	0.30		0.08	0.20		0.14	0.35		0.14	0.35	
Clearance Time (s)	3.7	4.1		3.7	4.1		3.7	4.1		3.7	4.1	
Vehicle Extension (s)	2.0	2.5		3.0	2.0		2.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	314	991		135	669		482	1193		247	1156	
v/s Ratio Prot	0.12	c0.26		0.04	c0.17		0.09	c0.26		0.11	c0.33	
v/s Ratio Perm												
v/c Ratio	0.66	0.85		0.50	0.84		0.65	0.75		0.80	0.96	
Uniform Delay, d1	44.4	38.0		51.4	44.5		47.2	33.4		48.3	37.2	
Progression Factor	0.60	0.54		0.89	0.63		0.92	0.94		1.08	0.61	
Incremental Delay, d2	3.1	5.7		2.7	8.1		1.4	2.5		14.2	17.6	
Delay (s)	29.9	26.3		48.4	36.0		44.8	33.9		66.6	40.1	
Level of Service	C	C		D	D		D	C		E	D	
Approach Delay (s)		27.0			37.3			36.8			44.1	
Approach LOS		C			D			D			D	

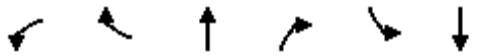
Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	380	22	57	166	22	0	1073	131	0	789	321
Future Volume (vph)	80	380	22	57	166	22	0	1073	131	0	789	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	6.1		5.7	6.1			6.1			6.1	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00			0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.98			0.96	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1770	1845		1770	1819			3475			3321	
Flt Permitted	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)	1770	1845		1770	1819			3475			3321	
Peak-hour factor, PHF	0.84	0.84	0.84	0.90	0.90	0.90	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	95	452	26	63	184	24	0	1154	141	0	858	349
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	0	0	34	0
Lane Group Flow (vph)	95	476	0	63	204	0	0	1295	0	0	1173	0
Confl. Peds. (#/hr)	28		5	5		28	18					18
Confl. Bikes (#/hr)			9			25			10			11
Turn Type	Prot	NA		Prot	NA			NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases												
Actuated Green, G (s)	14.1	35.9		12.2	34.0			50.0			50.0	
Effective Green, g (s)	14.1	35.9		12.2	34.0			50.0			50.0	
Actuated g/C Ratio	0.12	0.31		0.11	0.29			0.43			0.43	
Clearance Time (s)	5.7	6.1		5.7	6.1			6.1			6.1	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			4.0			4.0	
Lane Grp Cap (vph)	215	570		186	533			1497			1431	
v/s Ratio Prot	0.05	c0.26		0.04	c0.11			c0.37			0.35	
v/s Ratio Perm												
v/c Ratio	0.44	0.83		0.34	0.38			0.87			0.82	
Uniform Delay, d1	47.3	37.3		48.2	32.6			29.9			29.0	
Progression Factor	1.00	1.00		1.31	1.38			0.45			0.31	
Incremental Delay, d2	0.5	9.8		0.4	0.2			6.1			2.4	
Delay (s)	47.8	47.1		63.5	45.3			19.5			11.4	
Level of Service	D	D		E	D			B			B	
Approach Delay (s)		47.2			49.6			19.5			11.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	17.9
Intersection Capacity Utilization	85.1%	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)	150	0	700	0	0	650
Future Volume (vph)	150	0	700	0	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		5.5			5.5
Lane Util. Factor	0.97		0.95			0.95
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3433		3539			3539
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3433		3539			3539
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.97	0.97
Adj. Flow (vph)	163	0	805	0	0	670
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	163	0	805	0	0	670
Turn Type	Prot		NA			NA
Protected Phases	7		2			6
Permitted Phases						
Actuated Green, G (s)	8.4		53.5			53.5
Effective Green, g (s)	8.4		53.5			53.5
Actuated g/C Ratio	0.10		0.63			0.63
Clearance Time (s)	3.5		5.5			5.5
Vehicle Extension (s)	2.0		3.0			3.0
Lane Grp Cap (vph)	339		2227			2227
v/s Ratio Prot	c0.05		c0.23			0.19
v/s Ratio Perm						
v/c Ratio	0.48		0.36			0.30
Uniform Delay, d1	36.2		7.6			7.2
Progression Factor	1.00		0.46			1.00
Incremental Delay, d2	0.4		0.4			0.3
Delay (s)	36.6		3.9			7.5
Level of Service	D		A			A
Approach Delay (s)	36.6		3.9			7.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	43	15	69	83	172	2	595	39	156	550	7
Future Volume (vph)	6	43	15	69	83	172	2	595	39	156	550	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0		5.5		5.5	5.5	
Lane Util. Factor		1.00		1.00	1.00	1.00		0.95		1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00	0.97		1.00		1.00	1.00	
Flpb, ped/bikes		1.00		0.99	1.00	1.00		1.00		0.99	1.00	
Frt		0.97		1.00	1.00	0.85		0.99		1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1786		1759	1863	1542		3490		1750	3531	
Flt Permitted		0.97		0.69	1.00	1.00		0.95		0.35	1.00	
Satd. Flow (perm)		1744		1269	1863	1542		3331		652	3531	
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.82	0.82	0.82	0.89	0.89	0.89
Adj. Flow (vph)	8	57	20	77	92	191	2	726	48	175	618	8
RTOR Reduction (vph)	0	16	0	0	0	163	0	3	0	0	0	0
Lane Group Flow (vph)	0	69	0	77	92	28	0	773	0	175	626	0
Confl. Peds. (#/hr)	1		6	6		1	6		19	19		6
Confl. Bikes (#/hr)			1			8			42			22
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		11.5		11.5	11.5	11.5		64.0		64.0	64.0	
Effective Green, g (s)		11.5		11.5	11.5	11.5		64.0		64.0	64.0	
Actuated g/C Ratio		0.14		0.14	0.14	0.14		0.75		0.75	0.75	
Clearance Time (s)		4.0		4.0	4.0	4.0		5.5		5.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		235		171	252	208		2508		490	2658	
v/s Ratio Prot					0.05						0.18	
v/s Ratio Perm		0.04		c0.06		0.02		0.23		c0.27		
v/c Ratio		0.29		0.45	0.37	0.13		0.31		0.36	0.24	
Uniform Delay, d1		33.1		33.8	33.4	32.4		3.4		3.5	3.2	
Progression Factor		1.00		1.00	1.00	1.00		0.93		1.57	1.15	
Incremental Delay, d2		0.7		1.9	0.9	0.3		0.3		1.9	0.2	
Delay (s)		33.8		35.7	34.3	32.6		3.4		7.5	3.8	
Level of Service		C		D	C	C		A		A	A	
Approach Delay (s)		33.8			33.7			3.4			4.6	
Approach LOS		C			C			A			A	

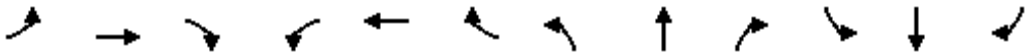
Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	NBR2	SBL2	SBL	SBT	NWL	NWR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	575	120	13	43	12	569	13	0	93	0
Future Volume (vph)	575	120	13	43	12	569	13	0	93	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5					5.5	3.0		4.0	
Lane Util. Factor	0.95					0.95	1.00		0.97	
Frpb, ped/bikes	0.99					1.00	1.00		1.00	
Flpb, ped/bikes	1.00					1.00	1.00		1.00	
Frt	0.97					1.00	1.00		1.00	
Flt Protected	1.00					1.00	0.95		0.95	
Satd. Flow (prot)	3394					3519	1770		3433	
Flt Permitted	1.00					0.83	0.95		0.95	
Satd. Flow (perm)	3394					2920	1770		3433	
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.41	0.41	0.63	0.63
Adj. Flow (vph)	612	128	14	45	13	599	32	0	148	0
RTOR Reduction (vph)	1	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	753	0	0	0	0	657	32	0	148	0
Confl. Peds. (#/hr)		9	9	9	9			10		10
Confl. Bikes (#/hr)								5		5
Turn Type	NA			Perm	Perm	NA	Prot		Prot	
Protected Phases	2					6	3		4	
Permitted Phases				6	6					
Actuated Green, G (s)	57.1					57.1	7.4		8.0	
Effective Green, g (s)	57.1					57.1	7.4		8.0	
Actuated g/C Ratio	0.67					0.67	0.09		0.09	
Clearance Time (s)	5.5					5.5	3.0		4.0	
Vehicle Extension (s)	2.0					2.0	2.0		2.0	
Lane Grp Cap (vph)	2279					1961	154		323	
v/s Ratio Prot	0.22						c0.02		c0.04	
v/s Ratio Perm						c0.23				
v/c Ratio	0.33					0.34	0.21		0.46	
Uniform Delay, d1	5.9					5.9	36.1		36.4	
Progression Factor	1.00					0.18	1.00		1.00	
Incremental Delay, d2	0.4					0.0	0.2		0.4	
Delay (s)	6.3					1.1	36.3		36.8	
Level of Service	A					A	D		D	
Approach Delay (s)	6.3					1.1	36.3		36.8	
Approach LOS	A					A	D		D	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	66.3%	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)	27	624	73	12	709	98	110	509	48	130	292	1
Future Volume (vph)	27	624	73	12	709	98	110	509	48	130	292	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	5.5		4.0	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3468		1770	3451		1770	3389		1770	3537	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3468		1770	3451		1770	3389		1770	3537	
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90
Adj. Flow (vph)	29	664	78	13	779	108	124	572	54	144	324	1
RTOR Reduction (vph)	0	7	0	0	9	0	0	8	0	0	0	0
Lane Group Flow (vph)	29	735	0	13	878	0	124	618	0	144	325	0
Confl. Peds. (#/hr)	19		15	15		19	19		46	46		19
Confl. Bikes (#/hr)			26			43			54			15
Bus Blockages (#/hr)	0	0	0	0	0	0	0	11	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	4.3	43.3		1.3	40.3		9.9	27.0		10.4	27.5	
Effective Green, g (s)	4.3	43.3		1.3	40.3		9.9	27.0		10.4	27.5	
Actuated g/C Ratio	0.04	0.43		0.01	0.40		0.10	0.27		0.10	0.28	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	5.0		2.0	5.0	
Lane Grp Cap (vph)	76	1501		23	1390		175	915		184	972	
v/s Ratio Prot	c0.02	c0.21		0.01	c0.25		0.07	c0.18		c0.08	0.09	
v/s Ratio Perm												
v/c Ratio	0.38	0.49		0.57	0.63		0.71	0.68		0.78	0.33	
Uniform Delay, d1	46.6	20.4		49.1	23.9		43.7	32.6		43.7	28.9	
Progression Factor	1.38	0.11		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.6		17.6	2.2		10.2	2.6		17.9	0.4	
Delay (s)	64.8	2.8		66.6	26.1		53.9	35.2		61.6	29.4	
Level of Service	E	A		E	C		D	D		E	C	
Approach Delay (s)		5.1			26.7			38.3			39.3	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	0	33	37	705	239	0	798	7	0	0
Future Volume (Veh/h)	0	33	37	705	239	0	798	7	0	0
Sign Control	Stop			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.77	0.77	0.84	0.84	0.84	0.95	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	0	43	44	839	285	0	840	7	0	0
Pedestrians	12			2			5		13	
Lane Width (ft)	12.0			12.0			12.0		0.0	
Walking Speed (ft/s)	4.0			4.0			4.0		4.0	
Percent Blockage	1			0			0		0	
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)				184			190			
pX, platoon unblocked	0.92	0.91	0.91			0.88			0.92	0.92
vC, conflicting volume	2080	438	859			1137			1548	1942
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	1590	199	660			887			1013	1440
tC, single (s)	6.5	6.9	4.1			4.1			7.5	6.5
tC, 2 stage (s)										
tF (s)	4.0	3.3	2.2			2.2			3.5	4.0
p0 queue free %	100	94	95			100			100	100
cM capacity (veh/h)	92	731	837			669			160	114

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	43	44	559	565	560	287
Volume Left	0	44	0	0	0	0
Volume Right	43	0	0	285	0	7
cSH	731	837	1700	1700	1700	1700
Volume to Capacity	0.06	0.05	0.33	0.33	0.33	0.17
Queue Length 95th (ft)	5	4	0	0	0	0
Control Delay (s)	10.2	9.5	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.2	0.4			0.0	
Approach LOS	B					

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	39.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	728	720	125	219	15
Future Volume (vph)	0	728	720	125	219	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5		3.5	
Lane Util. Factor		0.95	0.95		0.97	
Frpb, ped/bikes		1.00	0.99		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.98		0.99	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		3539	3428		3408	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		3539	3428		3408	
Peak-hour factor, PHF	0.84	0.84	0.93	0.93	0.91	0.91
Adj. Flow (vph)	0	867	774	134	241	16
RTOR Reduction (vph)	0	0	9	0	7	0
Lane Group Flow (vph)	0	867	899	0	250	0
Confl. Peds. (#/hr)	10			10		14
Confl. Bikes (#/hr)				38		2
Turn Type		NA	NA		Prot	
Protected Phases		2	6		8	
Permitted Phases						
Actuated Green, G (s)		53.5	53.5		10.6	
Effective Green, g (s)		53.5	53.5		10.6	
Actuated g/C Ratio		0.63	0.63		0.12	
Clearance Time (s)		5.5	5.5		3.5	
Vehicle Extension (s)		3.0	3.0		2.0	
Lane Grp Cap (vph)		2227	2157		424	
v/s Ratio Prot		0.24	c0.26		c0.07	
v/s Ratio Perm						
v/c Ratio		0.39	0.42		0.59	
Uniform Delay, d1		7.7	7.9		35.1	
Progression Factor		1.06	0.74		1.00	
Incremental Delay, d2		0.5	0.6		1.4	
Delay (s)		8.7	6.4		36.5	
Level of Service		A	A		D	
Approach Delay (s)		8.7	6.4		36.5	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group