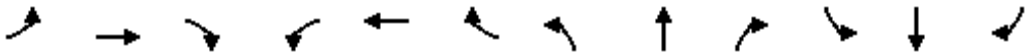
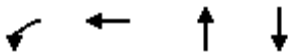


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	94	79	101	0	75	0	217	21	38	514	0
Future Volume (vph)	31	94	79	101	0	75	0	217	21	38	514	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	14	14	14	11	11	8	11	11	8
Grade (%)		0%			0%			5%			-8%	
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.86			0.80			0.95			1.00	
Flpb, ped/bikes		0.97			0.93			1.00			0.98	
Frt		0.95			0.94			0.99			1.00	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1071			1027			1475			1474	
Flt Permitted		0.94			0.63			1.00			0.96	
Satd. Flow (perm)		1010			663			1475			1424	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	34	103	87	111	0	82	0	238	23	42	565	0
RTOR Reduction (vph)	0	21	0	0	42	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	203	0	0	151	0	0	258	0	0	607	0
Confl. Peds. (#/hr)	101		75	75		101	50		159	159		50
Heavy Vehicles (%)	10%	3%	6%	10%	2%	6%	2%	2%	5%	8%	2%	2%
Parking (#/hr)		0			0						0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4						2		
Actuated Green, G (s)		31.0			31.0			63.0			63.0	
Effective Green, g (s)		33.0			33.0			65.0			65.0	
Actuated g/C Ratio		0.30			0.30			0.59			0.59	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		303			198			871			841	
v/s Ratio Prot								0.17				
v/s Ratio Perm		0.20			c0.23						c0.43	
v/c Ratio		0.67			0.76			0.30			0.72	
Uniform Delay, d1		33.7			34.9			11.2			16.0	
Progression Factor		1.15			1.00			0.25			0.43	
Incremental Delay, d2		11.1			23.9			0.6			4.7	
Delay (s)		50.0			58.8			3.4			11.6	
Level of Service		D			E			A			B	
Approach Delay (s)		50.0			58.8			3.4			11.6	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

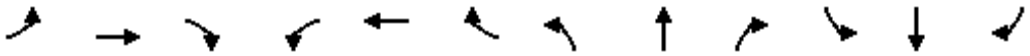
c Critical Lane Group



Lane Group	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	181	247	587	962
v/c Ratio	0.64	0.53	0.55	0.86
Control Delay	53.7	13.2	9.6	6.7
Queue Delay	0.0	0.3	3.5	48.2
Total Delay	53.7	13.5	13.1	54.9
Queue Length 50th (ft)	118	24	195	70
Queue Length 95th (ft)	m199	m93	m155	m70
Internal Link Dist (ft)		302	370	279
Turn Bay Length (ft)				
Base Capacity (vph)	281	470	1067	1118
Starvation Cap Reductn	0	0	374	43
Spillback Cap Reductn	0	32	201	246
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.56	0.85	1.10

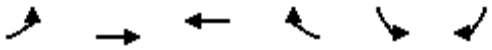
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	174	7	230	4	560	0	0	910	13
Future Volume (vph)	0	0	0	174	7	230	4	560	0	0	910	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	10	12	10	10	10	10	12
Grade (%)		0%			1%			1%			-2%	
Total Lost time (s)				3.0	3.0			3.5			3.5	
Lane Util. Factor				1.00	1.00			1.00			1.00	
Frpb, ped/bikes				1.00	0.93			1.00			1.00	
Flpb, ped/bikes				0.91	1.00			1.00			1.00	
Frt				1.00	0.85			1.00			1.00	
Flt Protected				0.95	1.00			1.00			1.00	
Satd. Flow (prot)				1290	1298			1484			1547	
Flt Permitted				0.95	1.00			1.00			1.00	
Satd. Flow (perm)				1290	1298			1478			1547	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	181	7	240	4	583	0	0	948	14
RTOR Reduction (vph)	0	0	0	0	188	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	181	59	0	0	587	0	0	961	0
Confl. Peds. (#/hr)	17		29	29		17			39	39		
Heavy Vehicles (%)	2%	2%	2%	6%	2%	4%	2%	7%	2%	2%	4%	2%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4			2					
Actuated Green, G (s)				22.0	22.0			77.5			77.5	
Effective Green, g (s)				24.0	24.0			79.5			79.5	
Actuated g/C Ratio				0.22	0.22			0.72			0.72	
Clearance Time (s)				5.0	5.0			5.5			5.5	
Lane Grp Cap (vph)				281	283			1068			1118	
v/s Ratio Prot					0.05						c0.62	
v/s Ratio Perm				c0.14				0.40				
v/c Ratio				0.64	0.21			0.55			0.86	
Uniform Delay, d1				39.1	35.2			7.0			11.2	
Progression Factor				1.08	1.67			1.28			0.18	
Incremental Delay, d2				10.5	1.6			0.2			3.7	
Delay (s)				52.6	60.4			9.2			5.8	
Level of Service				D	E			A			A	
Approach Delay (s)		0.0			57.1			9.2			5.8	
Approach LOS		A			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	295	3	0	88
Future Volume (Veh/h)	0	0	295	3	0	88
Sign Control		Free	Free		Stop	
Grade		0%	1%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	339	3	0	101
Pedestrians		21	21		30	
Lane Width (ft)		0.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	2		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		382	771			
pX, platoon unblocked						
vC, conflicting volume	372				392	392
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	372				392	392
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	84
cM capacity (veh/h)	1157				587	634

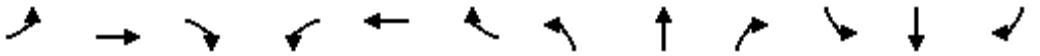
Direction, Lane #	WB 1	SB 1
Volume Total	342	101
Volume Left	0	0
Volume Right	3	101
cSH	1700	634
Volume to Capacity	0.20	0.16
Queue Length 95th (ft)	0	14
Control Delay (s)	0.0	11.7
Lane LOS		B
Approach Delay (s)	0.0	11.7
Approach LOS		B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	NBT	SBT	SBR
Lane Group Flow (vph)	290	454	276
v/c Ratio	0.72	0.64	0.44
Control Delay	46.9	18.7	3.1
Queue Delay	0.2	3.4	0.5
Total Delay	47.0	22.1	3.6
Queue Length 50th (ft)	183	190	7
Queue Length 95th (ft)	#292	m278	m18
Internal Link Dist (ft)	301	289	
Turn Bay Length (ft)			110
Base Capacity (vph)	400	705	624
Starvation Cap Reductn	0	162	105
Spillback Cap Reductn	4	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.84	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	23	244	9	16	415	262
Future Volume (vph)	0	0	0	0	0	0	23	244	9	16	415	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	14	14	14	14	14	10	10	8	10	10	10
Grade (%)		0%			0%			2%			-4%	
Total Lost time (s)								3.0			3.0	3.0
Lane Util. Factor								1.00			1.00	1.00
Frpb, ped/bikes								1.00			1.00	0.85
Flpb, ped/bikes								1.00			1.00	1.00
Frt								1.00			1.00	0.85
Flt Protected								1.00			1.00	1.00
Satd. Flow (prot)								1374			1574	1137
Flt Permitted								1.00			0.98	1.00
Satd. Flow (perm)								1374			1551	1137
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	0	0	24	257	9	17	437	276
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	107
Lane Group Flow (vph)	0	0	0	0	0	0	0	289	0	0	454	169
Confl. Peds. (#/hr)	6		15	15		6	21		11	11		21
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	2%	10%	6%	3%	4%
Parking (#/hr)		0			0			0				
Turn Type							Split	NA		Perm	NA	Perm
Protected Phases							2	2			4	
Permitted Phases										4		4
Actuated Green, G (s)								30.0			48.0	48.0
Effective Green, g (s)								32.0			50.0	50.0
Actuated g/C Ratio								0.29			0.45	0.45
Clearance Time (s)								5.0			5.0	5.0
Lane Grp Cap (vph)								399			705	516
v/s Ratio Prot								c0.21				
v/s Ratio Perm											c0.29	0.15
v/c Ratio								0.73			0.64	0.33
Uniform Delay, d1								35.0			23.1	19.2
Progression Factor								1.00			0.66	0.26
Incremental Delay, d2								10.9			3.0	1.1
Delay (s)								46.0			18.3	6.2
Level of Service								D			B	A
Approach Delay (s)		0.0			0.0			46.0			13.7	
Approach LOS		A			A			D			B	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

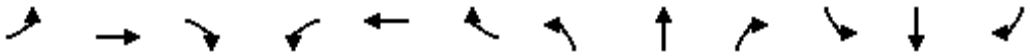
Lane Group	EBT	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	177	108	23	581	14	985	191
v/c Ratio	0.58	0.27	0.06	1.27	0.02	1.02	0.23
Control Delay	36.6	32.3	8.1	158.2	2.0	45.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	29.4	0.0
Total Delay	36.6	32.3	8.1	158.2	2.0	74.6	2.1
Queue Length 50th (ft)	90	59	0	~504	0	~758	5
Queue Length 95th (ft)	168	107	16	m#599	m1	m#1009	m13
Internal Link Dist (ft)	191	145		200		370	
Turn Bay Length (ft)					115		150
Base Capacity (vph)	307	399	374	458	649	964	819
Starvation Cap Reductn	0	0	0	0	0	106	0
Spillback Cap Reductn	0	0	0	0	0	11	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.27	0.06	1.27	0.02	1.15	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

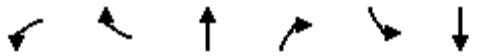
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	30	59	40	58	21	63	466	13	21	875	174
Future Volume (vph)	72	30	59	40	58	21	63	466	13	21	875	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	12	10	10	10	10	10	10
Grade (%)		3%			-1%			1%			-2%	
Total Lost time (s)		3.5			3.5	3.5		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		0.98			1.00	0.91		1.00	0.81		1.00	0.92
Flpb, ped/bikes		0.98			0.99	1.00		1.00	1.00		1.00	1.00
Frt		0.95			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.98	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1175			1584	1213		1493	1000		1532	1209
Flt Permitted		0.82			0.85	1.00		0.48	1.00		0.98	1.00
Satd. Flow (perm)		990			1373	1213		716	1000		1504	1209
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	79	33	65	44	64	23	69	512	14	23	962	191
RTOR Reduction (vph)	0	19	0	0	0	16	0	0	5	0	0	45
Lane Group Flow (vph)	0	158	0	0	108	7	0	581	9	0	985	146
Confl. Peds. (#/hr)	21		13	13		21	22		46	46		22
Heavy Vehicles (%)	6%	2%	10%	10%	2%	10%	4%	6%	10%	5%	5%	4%
Parking (#/hr)	0	0	0									
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		8			4			2			6	
Permitted Phases	8			4		4	2		2	6		6
Actuated Green, G (s)		30.0			30.0	30.0		68.5	68.5		68.5	68.5
Effective Green, g (s)		32.0			32.0	32.0		70.5	70.5		70.5	70.5
Actuated g/C Ratio		0.29			0.29	0.29		0.64	0.64		0.64	0.64
Clearance Time (s)		5.5			5.5	5.5		6.0	6.0		6.0	6.0
Lane Grp Cap (vph)		288			399	352		458	640		963	774
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.08	0.01		c0.81	0.01		0.65	0.12
v/c Ratio		0.55			0.27	0.02		1.27	0.01		1.02	0.19
Uniform Delay, d1		32.9			30.0	27.8		19.8	7.2		19.8	8.1
Progression Factor		1.00			1.00	1.00		1.48	1.43		0.77	0.55
Incremental Delay, d2		7.3			1.7	0.1		130.2	0.0		28.1	0.3
Delay (s)		40.2			31.7	27.9		159.5	10.2		43.3	4.8
Level of Service		D			C	C		F	B		D	A
Approach Delay (s)		40.2			31.0			156.0			37.0	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	71.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	110.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	542	45	24	950
Future Volume (Veh/h)	0	0	542	45	24	950
Sign Control	Stop		Free			Free
Grade	0%		1%			-2%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	571	47	25	1000
Pedestrians	144		1			2
Lane Width (ft)	0.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			259			280
pX, platoon unblocked	0.50	0.76			0.76	
vC, conflicting volume	1790	740			762	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	505			533	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	128	432			790	

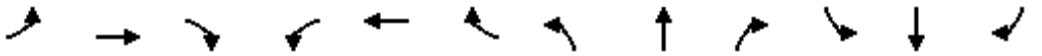
Direction, Lane #	NB 1	SB 1
Volume Total	618	1025
Volume Left	0	25
Volume Right	47	0
cSH	1700	790
Volume to Capacity	0.36	0.03
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	1.0
Lane LOS		A
Approach Delay (s)	0.0	1.0
Approach LOS		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	464	949	348	324	552	65
v/c Ratio	0.39	0.81	1.00	0.76	0.73	0.11
Control Delay	22.8	34.4	89.1	28.5	20.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	1.5	0.0
Total Delay	22.8	34.4	89.1	28.5	22.3	5.9
Queue Length 50th (ft)	115	303	246	119	190	5
Queue Length 95th (ft)	158	392	#438	m123	m196	m5
Internal Link Dist (ft)	189	477	172		179	
Turn Bay Length (ft)				100		160
Base Capacity (vph)	1198	1169	349	424	753	617
Starvation Cap Reductn	0	0	0	0	79	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.81	1.00	0.76	0.82	0.11

Intersection Summary

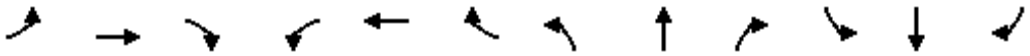
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	402	53	0	708	222	0	339	2	318	541	64
Future Volume (vph)	0	402	53	0	708	222	0	339	2	318	541	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	10	10	10
Grade (%)		1%			1%			2%			-2%	
Total Lost time (s)		4.0			4.0			4.0		3.0	4.0	4.0
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99			0.99			1.00		1.00	1.00	0.88
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	1.00
Frt		0.98			0.96			1.00		1.00	1.00	0.85
Flt Protected		1.00			1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)		2805			2739			1325		1501	1507	1177
Flt Permitted		1.00			1.00			1.00		0.23	1.00	1.00
Satd. Flow (perm)		2805			2739			1325		371	1507	1177
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	410	54	0	722	227	0	346	2	324	552	65
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	29
Lane Group Flow (vph)	0	464	0	0	949	0	0	348	0	324	552	37
Confl. Peds. (#/hr)	13		26	26		13	64		251	251		64
Heavy Vehicles (%)	2%	8%	10%	2%	9%	7%	2%	7%	10%	2%	7%	3%
Parking (#/hr)								0	0			
Turn Type		NA			NA			NA		pm+pt	NA	Perm
Protected Phases		6			2			8		7	4	
Permitted Phases										4		4
Actuated Green, G (s)		45.0			45.0			27.0		53.0	53.0	53.0
Effective Green, g (s)		47.0			47.0			29.0		55.0	55.0	55.0
Actuated g/C Ratio		0.43			0.43			0.26		0.50	0.50	0.50
Clearance Time (s)		6.0			6.0			6.0		5.0	6.0	6.0
Lane Grp Cap (vph)		1198			1170			349		421	753	588
v/s Ratio Prot		0.17			c0.35			c0.26		c0.16	0.37	
v/s Ratio Perm										0.22		0.03
v/c Ratio		0.39			0.81			1.00		0.77	0.73	0.06
Uniform Delay, d1		21.6			27.6			40.5		20.0	21.7	14.2
Progression Factor		1.00			1.00			1.00		1.31	0.83	1.22
Incremental Delay, d2		0.9			6.2			47.5		4.1	1.9	0.1
Delay (s)		22.6			33.8			87.9		30.2	20.0	17.4
Level of Service		C			C			F		C	B	B
Approach Delay (s)		22.6			33.8			87.9			23.3	
Approach LOS		C			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	35.2	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)	11.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

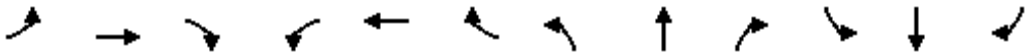
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	180	49	27	2	717	0	0	1235	13
Future Volume (Veh/h)	0	0	0	180	49	27	2	717	0	0	1235	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	191	52	29	2	763	0	0	1314	14
Pedestrians		55			24			9			10	
Lane Width (ft)		0.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			2			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								557			210	
pX, platoon unblocked	0.73	0.73	0.69	0.73	0.73	0.92	0.69			0.92		
vC, conflicting volume	1826	2167	728	1457	2174	416	1383			787		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	915	1382	0	409	1392	199	660			602		
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	100	48	48	96	100			100		
cM capacity (veh/h)	92	102	744	367	100	725	638			879		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	272	256	509	876	452
Volume Left	191	2	0	0	0
Volume Right	29	0	0	0	14
cSH	252	638	1700	1700	1700
Volume to Capacity	1.08	0.00	0.30	0.52	0.27
Queue Length 95th (ft)	285	0	0	0	0
Control Delay (s)	121.7	0.1	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	121.7	0.0		0.0	
Approach LOS	F				

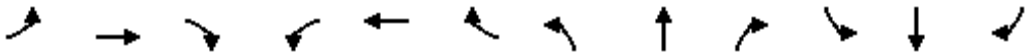
Intersection Summary				
Average Delay	14.0			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	14	33	4	10	47	142	5	161	8	95	191	11
Future Volume (vph)	14	33	4	10	47	142	5	161	8	95	191	11
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)	15	36	4	11	51	154	5	175	9	103	208	12

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	55	216	189	103	220
Volume Left (vph)	15	11	5	103	0
Volume Right (vph)	4	154	9	0	12
Hadj (s)	0.04	-0.33	0.08	0.53	0.12
Departure Headway (s)	5.6	5.0	5.3	6.0	5.6
Degree Utilization, x	0.09	0.30	0.28	0.17	0.34
Capacity (veh/h)	571	669	645	574	619
Control Delay (s)	9.2	10.1	10.3	9.0	10.2
Approach Delay (s)	9.2	10.1	10.3	9.9	
Approach LOS	A	B	B	A	

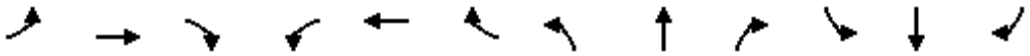
Intersection Summary				
Delay	10.0			
Level of Service	A			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	39	9	20	36	25	4	209	49	13	110	3
Future Volume (vph)	1	39	9	20	36	25	4	209	49	13	110	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	42	10	22	39	27	4	225	53	14	118	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	53	88	282	135
Volume Left (vph)	1	22	4	14
Volume Right (vph)	10	27	53	3
Hadj (s)	-0.05	-0.10	0.00	0.16
Departure Headway (s)	5.0	4.8	4.4	4.7
Degree Utilization, x	0.07	0.12	0.35	0.18
Capacity (veh/h)	655	674	785	720
Control Delay (s)	8.3	8.5	9.8	8.8
Approach Delay (s)	8.3	8.5	9.8	8.8
Approach LOS	A	A	A	A

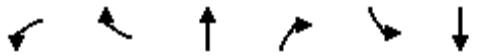
Intersection Summary				
Delay	9.2			
Level of Service	A			
Intersection Capacity Utilization	36.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	7	5	19	116	23	67	242	2	6	303	101
Future Volume (vph)	23	7	5	19	116	23	67	242	2	6	303	101
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	25	8	5	20	125	25	72	260	2	6	326	109

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	38	170	334	441
Volume Left (vph)	25	20	72	6
Volume Right (vph)	5	25	2	109
Hadj (s)	0.12	-0.02	0.09	-0.07
Departure Headway (s)	6.4	5.9	5.2	5.0
Degree Utilization, x	0.07	0.28	0.49	0.61
Capacity (veh/h)	460	544	648	701
Control Delay (s)	9.8	11.2	13.1	15.3
Approach Delay (s)	9.8	11.2	13.1	15.3
Approach LOS	A	B	B	C

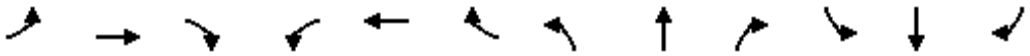
Intersection Summary				
Delay	13.7			
Level of Service	B			
Intersection Capacity Utilization	65.1%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	187	4	11	67
Future Volume (Veh/h)	0	0	187	4	11	67
Sign Control	Free		Stop			Stop
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	201	4	12	72
Pedestrians	11		68			130
Lane Width (ft)	0.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		6			11
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	68		198	79	246	198
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68		198	79	246	198
tC, single (s)	4.1		6.5	6.2	7.1	6.5
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	100		66	100	97	88
cM capacity (veh/h)	1446		587	926	409	587

Direction, Lane #	NB 1	SB 1
Volume Total	205	84
Volume Left	0	12
Volume Right	4	0
cSH	591	552
Volume to Capacity	0.35	0.15
Queue Length 95th (ft)	39	13
Control Delay (s)	14.3	12.7
Lane LOS	B	B
Approach Delay (s)	14.3	12.7
Approach LOS	B	B

Intersection Summary			
Average Delay	13.8		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



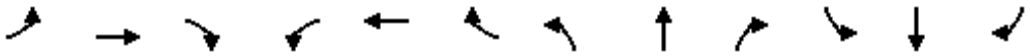
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	53	22	23	39	49	17	83	95	40	38	13
Future Volume (vph)	6	53	22	23	39	49	17	83	95	40	38	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	59	24	26	43	54	19	92	106	44	42	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	90	123	217	100
Volume Left (vph)	7	26	19	44
Volume Right (vph)	24	54	106	14
Hadj (s)	-0.11	-0.16	-0.24	0.05
Departure Headway (s)	4.7	4.6	4.3	4.7
Degree Utilization, x	0.12	0.16	0.26	0.13
Capacity (veh/h)	706	725	796	714
Control Delay (s)	8.3	8.4	8.8	8.4
Approach Delay (s)	8.3	8.4	8.8	8.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	41.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	NBT	SBT
Lane Group Flow (vph)	53	585	1269	765
v/c Ratio	0.10	0.51	0.82	0.68
Control Delay	20.4	24.9	23.5	20.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.4	24.9	23.5	20.5
Queue Length 50th (ft)	21	144	317	176
Queue Length 95th (ft)	47	196	421	246
Internal Link Dist (ft)		782	130	228
Turn Bay Length (ft)	60			
Base Capacity (vph)	537	1139	1544	1129
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.10	0.51	0.82	0.68

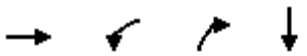
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	517	62	0	0	0	0	941	315	55	702	0
Future Volume (vph)	52	517	62	0	0	0	0	941	315	55	702	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						3.5			3.5	
Lane Util. Factor	1.00	0.95						0.95			0.95	
Frpb, ped/bikes	1.00	0.99						0.97			1.00	
Flpb, ped/bikes	0.97	1.00						1.00			1.00	
Frt	1.00	0.98						0.96			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1396	2934						2802			2961	
Flt Permitted	0.95	1.00						1.00			0.70	
Satd. Flow (perm)	1396	2934						2802			2092	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	53	522	63	0	0	0	0	951	318	56	709	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	53	576	0	0	0	0	0	1236	0	0	765	0
Confl. Peds. (#/hr)	22		36	36		22	89		52	52		89
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	3%	3%	2%	4%	2%
Parking (#/hr)	0	0	0	0	0	0		0	0		0	
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8									6		
Actuated Green, G (s)	36.5	36.5						52.0			52.0	
Effective Green, g (s)	38.5	38.5						54.0			54.0	
Actuated g/C Ratio	0.38	0.38						0.54			0.54	
Clearance Time (s)	6.0	6.0						5.5			5.5	
Lane Grp Cap (vph)	537	1129						1513			1129	
v/s Ratio Prot		c0.20						c0.44				
v/s Ratio Perm	0.04										0.37	
v/c Ratio	0.10	0.51						0.82			0.68	
Uniform Delay, d1	19.7	23.5						18.9			16.7	
Progression Factor	1.00	1.00						1.00			1.00	
Incremental Delay, d2	0.4	1.6						5.0			3.3	
Delay (s)	20.0	25.2						23.9			20.0	
Level of Service	C	C						C			B	
Approach Delay (s)		24.8			0.0			23.9			20.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

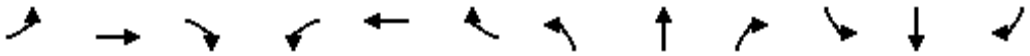
c Critical Lane Group



Lane Group	EBT	WBL	NBR	SBT
Lane Group Flow (vph)	895	352	505	2
v/c Ratio	0.85	0.43	0.55	0.02
Control Delay	44.2	20.4	14.5	54.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.2	20.4	14.5	54.0
Queue Length 50th (ft)	331	146	136	2
Queue Length 95th (ft)	#422	267	284	11
Internal Link Dist (ft)	649			121
Turn Bay Length (ft)				
Base Capacity (vph)	1047	816	910	110
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.85	0.43	0.55	0.02

Intersection Summary

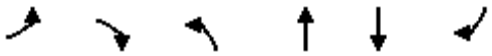
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	752	63	320	0	0	0	0	460	1	1	0
Future Volume (vph)	0	752	63	320	0	0	0	0	460	1	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	12	14	12	14	12	12	12
Total Lost time (s)		4.0		4.0					4.0		4.0	
Lane Util. Factor		0.95		1.00					1.00		1.00	
Frpb, ped/bikes		1.00		1.00					1.00		1.00	
Flpb, ped/bikes		1.00		1.00					1.00		1.00	
Frt		0.99		1.00					0.86		1.00	
Flt Protected		1.00		0.95					1.00		0.98	
Satd. Flow (prot)		2845		1540					1547		1472	
Flt Permitted		1.00		0.95					1.00		0.98	
Satd. Flow (perm)		2845		1540					1547		1472	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	826	69	352	0	0	0	0	505	1	1	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	97	0	0	0
Lane Group Flow (vph)	0	890	0	352	0	0	0	0	408	0	2	0
Confl. Peds. (#/hr)	1		13	13		1	16					16
Heavy Vehicles (%)	2%	3%	5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)	0	0									0	0
Turn Type		NA		Prot					Prot	Perm	NA	
Protected Phases		4		6					2		3	
Permitted Phases										3		
Actuated Green, G (s)		42.0		58.0					58.0		2.0	
Effective Green, g (s)		44.0		60.0					60.0		4.0	
Actuated g/C Ratio		0.37		0.50					0.50		0.03	
Clearance Time (s)		6.0		6.0					6.0		6.0	
Vehicle Extension (s)		1.0		1.0					1.0		1.0	
Lane Grp Cap (vph)		1043		770					773		49	
v/s Ratio Prot		c0.31		0.23					c0.26			
v/s Ratio Perm											0.00	
v/c Ratio		0.85		0.46					0.53		0.04	
Uniform Delay, d1		35.0		19.4					20.4		56.1	
Progression Factor		1.00		1.00					1.00		1.00	
Incremental Delay, d2		8.8		2.0					2.6		0.1	
Delay (s)		43.9		21.4					22.9		56.3	
Level of Service		D		C					C		E	
Approach Delay (s)		43.9			21.4			22.9			56.3	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

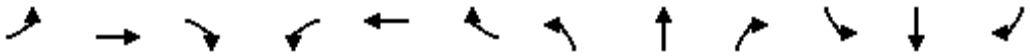
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	119	15	1174	778	31
Future Volume (Veh/h)	15	119	15	1174	778	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	127	16	1249	828	33
Pedestrians	79			2	9	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	7			0	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				336	431	
pX, platoon unblocked	0.86	0.87	0.87			
vC, conflicting volume	1589	512	940			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	673	138	631			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	82	98			
cM capacity (veh/h)	303	718	770			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	143	432	833	552	309
Volume Left	16	16	0	0	0
Volume Right	127	0	0	0	33
cSH	623	770	1700	1700	1700
Volume to Capacity	0.23	0.02	0.49	0.32	0.18
Queue Length 95th (ft)	22	2	0	0	0
Control Delay (s)	12.5	0.6	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.5	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		



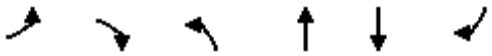
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	3	0	0	0	1	1174	22	7	892	1
Future Volume (Veh/h)	2	1	3	0	0	0	1	1174	22	7	892	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	1	3	0	0	0	1	1236	23	7	939	1
Pedestrians		63			67			20				
Lane Width (ft)		12.0			0.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		5			0			2				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								205			562	
pX, platoon unblocked	0.85	0.85	0.89	0.85	0.85	0.79	0.89			0.79		
vC, conflicting volume	1636	2344	553	1824	2334	696	1003			1326		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	782	1620	239	1003	1607	78	747			877		
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 %	99	99	100	100	100	100	100			99		
cM capacity (veh/h)	216	81	629	153	82	762	720			604		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	619	641	476	470
Volume Left	2	1	0	7	0
Volume Right	3	0	23	0	1
cSH	227	720	1700	604	1700
Volume to Capacity	0.03	0.00	0.38	0.01	0.28
Queue Length 95th (ft)	2	0	0	1	0
Control Delay (s)	21.3	0.0	0.0	0.3	0.0
Lane LOS	C	A		A	
Approach Delay (s)	21.3	0.0		0.2	
Approach LOS	C				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	52.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	NBT	SBT
Lane Group Flow (vph)	1260	952
v/c Ratio	0.70	0.54
Control Delay	5.9	14.9
Queue Delay	0.0	0.0
Total Delay	5.9	14.9
Queue Length 50th (ft)	52	210
Queue Length 95th (ft)	48	266
Internal Link Dist (ft)	68	125
Turn Bay Length (ft)		
Base Capacity (vph)	1791	1767
Starvation Cap Reductn	1	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.70	0.54

Intersection Summary



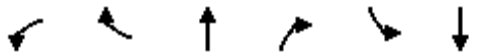
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	58	1164	874	49
Future Volume (vph)	0	0	58	1164	874	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5	3.5	
Lane Util. Factor				0.95	0.95	
Frpb, ped/bikes				1.00	0.97	
Flpb, ped/bikes				1.00	1.00	
Frt				1.00	0.99	
Flt Protected				1.00	1.00	
Satd. Flow (prot)				2990	2900	
Flt Permitted				0.84	1.00	
Satd. Flow (perm)				2518	2900	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	60	1200	901	51
RTOR Reduction (vph)	0	0	0	0	4	0
Lane Group Flow (vph)	0	0	0	1260	948	0
Confl. Peds. (#/hr)	7	1	99			99
Heavy Vehicles (%)	2%	2%	3%	3%	3%	2%
Parking (#/hr)	0	0		0	0	0
Turn Type			pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases			2			
Actuated Green, G (s)				82.0	71.0	
Effective Green, g (s)				84.0	73.0	
Actuated g/C Ratio				0.70	0.61	
Clearance Time (s)				5.5	5.5	
Lane Grp Cap (vph)				1792	1764	
v/s Ratio Prot				c0.04	0.33	
v/s Ratio Perm				c0.45		
v/c Ratio				0.70	0.54	
Uniform Delay, d1				10.6	13.7	
Progression Factor				0.35	1.00	
Incremental Delay, d2				2.0	1.2	
Delay (s)				5.7	14.9	
Level of Service				A	B	
Approach Delay (s)	0.0			5.7	14.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	129	1176	884
v/c Ratio	0.34	0.57	0.42
Control Delay	27.0	8.6	0.6
Queue Delay	0.0	0.1	0.1
Total Delay	27.0	8.7	0.7
Queue Length 50th (ft)	53	93	1
Queue Length 95th (ft)	111	188	1
Internal Link Dist (ft)	247	132	68
Turn Bay Length (ft)			
Base Capacity (vph)	382	2058	2097
Starvation Cap Reductn	0	139	367
Spillback Cap Reductn	0	84	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.34	0.61	0.51

Intersection Summary



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	60	67	1164	0	0	875
Future Volume (vph)	60	67	1164	0	0	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.5			3.5
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.93		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1420		2940			2997
Flt Permitted	0.98		1.00			1.00
Satd. Flow (perm)	1420		2940			2997
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	61	68	1176	0	0	884
RTOR Reduction (vph)	33	0	0	0	0	0
Lane Group Flow (vph)	96	0	1176	0	0	884
Confl. Peds. (#/hr)	44	2		36	36	
Heavy Vehicles (%)	10%	7%	5%	2%	2%	3%
Parking (#/hr)			0			0
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	27.5		82.0			82.0
Effective Green, g (s)	29.5		84.0			84.0
Actuated g/C Ratio	0.25		0.70			0.70
Clearance Time (s)	5.0		5.5			5.5
Lane Grp Cap (vph)	349		2058			2097
v/s Ratio Prot	c0.07		c0.40			0.29
v/s Ratio Perm						
v/c Ratio	0.27		0.57			0.42
Uniform Delay, d1	36.6		9.0			7.7
Progression Factor	1.00		0.83			0.01
Incremental Delay, d2	1.9		1.0			0.5
Delay (s)	38.5		8.5			0.6
Level of Service	D		A			A
Approach Delay (s)	38.5		8.5			0.6
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

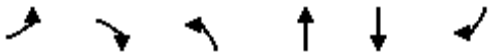
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	29	145	0
Future Volume (Veh/h)	0	0	0	29	145	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	34	171	0
Pedestrians	69			250	46	
Lane Width (ft)	0.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			21	4	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	327					
pX, platoon unblocked						
vC, conflicting volume			46		149	296
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			46		149	296
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		79	100
cM capacity (veh/h)			1502		800	566

Direction, Lane #	WB 1	NB 1
Volume Total	34	171
Volume Left	0	171
Volume Right	0	0
cSH	1700	800
Volume to Capacity	0.02	0.21
Queue Length 95th (ft)	0	20
Control Delay (s)	0.0	10.7
Lane LOS		B
Approach Delay (s)	0.0	10.7
Approach LOS		B

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	216	61	984	988
v/c Ratio	0.47	0.15	0.52	0.54
Control Delay	39.6	22.4	11.5	3.3
Queue Delay	0.0	0.0	0.1	0.1
Total Delay	39.6	22.4	11.6	3.4
Queue Length 50th (ft)	138	21	187	36
Queue Length 95th (ft)	216	56	237	44
Internal Link Dist (ft)	705		607	132
Turn Bay Length (ft)		25		
Base Capacity (vph)	460	401	1882	1846
Starvation Cap Reductn	0	0	0	107
Spillback Cap Reductn	0	0	146	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	0.15	0.57	0.57

Intersection Summary



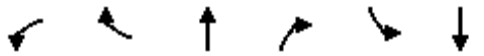
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	57	0	925	929	0
Future Volume (vph)	203	57	0	925	929	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	10	10	10	10
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	0.93		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1625	1357		2824	2770	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1625	1357		2824	2770	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	216	61	0	984	988	0
RTOR Reduction (vph)	0	17	0	0	0	0
Lane Group Flow (vph)	216	44	0	984	988	0
Confl. Peds. (#/hr)		34	81			81
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	8			2	6	
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0		78.0	78.0	
Effective Green, g (s)	34.0	34.0		80.0	80.0	
Actuated g/C Ratio	0.28	0.28		0.67	0.67	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	460	384		1882	1846	
v/s Ratio Prot	c0.13			0.35	c0.36	
v/s Ratio Perm		0.03				
v/c Ratio	0.47	0.11		0.52	0.54	
Uniform Delay, d1	35.5	31.8		10.2	10.4	
Progression Factor	1.00	1.00		1.00	0.21	
Incremental Delay, d2	3.4	0.6		1.0	1.0	
Delay (s)	39.0	32.4		11.3	3.3	
Level of Service	D	C		B	A	
Approach Delay (s)	37.5			11.3	3.3	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBT	SBT
Lane Group Flow (vph)	999	1039
v/c Ratio	0.47	0.59
Control Delay	3.6	7.6
Queue Delay	0.3	0.2
Total Delay	3.9	7.7
Queue Length 50th (ft)	66	143
Queue Length 95th (ft)	m90	191
Internal Link Dist (ft)	410	607
Turn Bay Length (ft)		
Base Capacity (vph)	2135	1776
Starvation Cap Reductn	493	0
Spillback Cap Reductn	0	170
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.61	0.65

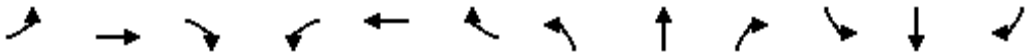
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	892	67	54	944
Future Volume (vph)	0	0	892	67	54	944
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10
Grade (%)	-10%		5%			-5%
Total Lost time (s)			3.0			3.0
Lane Util. Factor			0.95			0.95
Frpb, ped/bikes			0.99			1.00
Flpb, ped/bikes			1.00			1.00
Frt			0.99			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			2826			2832
Flt Permitted			1.00			0.83
Satd. Flow (perm)			2826			2354
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	929	70	56	983
RTOR Reduction (vph)	0	0	5	0	0	0
Lane Group Flow (vph)	0	0	994	0	0	1039
Confl. Peds. (#/hr)	36	71		21	21	
Heavy Vehicles (%)	2%	2%	2%	10%	2%	4%
Parking (#/hr)						0
Turn Type			NA		Perm	NA
Protected Phases			2			6
Permitted Phases					6	
Actuated Green, G (s)			81.0			81.0
Effective Green, g (s)			83.0			83.0
Actuated g/C Ratio			0.75			0.75
Clearance Time (s)			5.0			5.0
Vehicle Extension (s)			1.0			1.0
Lane Grp Cap (vph)			2132			1776
v/s Ratio Prot			0.35			
v/s Ratio Perm						c0.44
v/c Ratio			0.47			0.59
Uniform Delay, d1			5.1			5.9
Progression Factor			0.64			1.00
Incremental Delay, d2			0.3			1.4
Delay (s)			3.6			7.4
Level of Service			A			A
Approach Delay (s)	0.0		3.6			7.4
Approach LOS	A		A			A

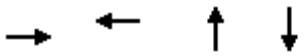
Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	30	53	25	0	18	0	0	0	0	0	0
Future Volume (Veh/h)	68	30	53	25	0	18	0	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		-13%			-10%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	73	32	57	27	0	19	0	0	0	0	0	0
Pedestrians		194			76			165			171	
Lane Width (ft)		12.0			12.0			0.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		16			6			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	384	270	359	314	270	247	194			76		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384	270	359	314	270	247	194			76		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	81	94	90	94	100	97	100			100		
cM capacity (veh/h)	383	501	568	429	500	733	1156			1427		

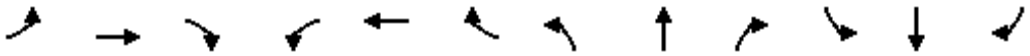
Direction, Lane #	EB 1	WB 1
Volume Total	162	46
Volume Left	73	27
Volume Right	57	19
cSH	456	517
Volume to Capacity	0.36	0.09
Queue Length 95th (ft)	40	7
Control Delay (s)	17.2	12.6
Lane LOS	C	B
Approach Delay (s)	17.2	12.6
Approach LOS	C	B

Intersection Summary				
Average Delay	16.2			
Intersection Capacity Utilization	16.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	15	105	619	298
v/c Ratio	0.09	0.51	0.61	0.24
Control Delay	27.7	36.9	6.0	6.1
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	27.7	36.9	6.1	6.1
Queue Length 50th (ft)	4	42	44	64
Queue Length 95th (ft)	21	92	87	90
Internal Link Dist (ft)	690	766	403	656
Turn Bay Length (ft)				
Base Capacity (vph)	164	205	1021	1265
Starvation Cap Reductn	0	0	43	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.51	0.63	0.24

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	8	43	1	45	8	496	22	1	247	5
Future Volume (vph)	4	1	8	43	1	45	8	496	22	1	247	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	8	8	8	12	12	12	12	12	8	15	15	8
Grade (%)		-13%			6%			6%			0%	
Total Lost time (s)		5.0			5.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.88			0.98			1.00			1.00	
Flpb, ped/bikes		1.00			0.91			1.00			1.00	
Frt		0.92			0.93			0.99			1.00	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		1098			1302			1446			1786	
Flt Permitted		0.91			0.84			1.00			1.00	
Satd. Flow (perm)		1012			1118			1440			1785	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	5	1	9	51	1	53	9	584	26	1	291	6
RTOR Reduction (vph)	0	8	0	0	33	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	72	0	0	618	0	0	297	0
Confl. Peds. (#/hr)	4		45	45		4	2		14	14		2
Heavy Vehicles (%)	2%	2%	2%	5%	2%	2%	2%	2%	9%	2%	5%	2%
Parking (#/hr)		0						0				
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			6			2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		15.0			15.0			76.0			76.0	
Effective Green, g (s)		17.0			17.0			78.0			78.0	
Actuated g/C Ratio		0.15			0.15			0.71			0.71	
Clearance Time (s)		7.0			7.0			6.0			6.0	
Lane Grp Cap (vph)		156			172			1021			1265	
v/s Ratio Prot												
v/s Ratio Perm		0.01			c0.06			c0.43			0.17	
v/c Ratio		0.05			0.42			0.60			0.24	
Uniform Delay, d1		39.6			42.0			8.1			5.6	
Progression Factor		1.00			1.00			0.44			1.00	
Incremental Delay, d2		0.6			7.3			2.2			0.4	
Delay (s)		40.2			49.4			5.8			6.0	
Level of Service		D			D			A			A	
Approach Delay (s)		40.2			49.4			5.8			6.0	
Approach LOS		D			D			A			A	

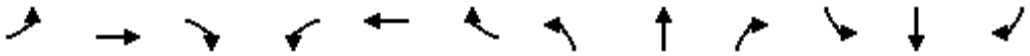
Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	329	173	33	27	400	85	55	507
v/c Ratio	0.78	0.42	0.09	0.07	0.43	0.13	0.15	0.28
Control Delay	45.6	29.9	8.2	11.6	15.6	3.3	12.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	29.9	8.2	11.6	15.6	3.3	12.9	12.7
Queue Length 50th (ft)	203	90	0	8	154	2	18	90
Queue Length 95th (ft)	#353	155	21	22	227	24	40	122
Internal Link Dist (ft)	139	246			167			404
Turn Bay Length (ft)			100	110		100	95	
Base Capacity (vph)	421	411	387	386	935	654	356	1802
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.42	0.09	0.07	0.43	0.13	0.15	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	169	5	61	105	32	26	384	82	53	453	34
Future Volume (vph)	142	169	5	61	105	32	26	384	82	53	453	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	9	9	12	12	12	10	12	10
Grade (%)		-1%			3%			0%			-3%	
Total Lost time (s)		4.0			4.0	4.0	3.5	3.5	3.5	3.5	3.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.84	1.00	1.00	0.83	1.00	1.00	
Flpb, ped/bikes		0.95			0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98			0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1567			1405	996	1518	1660	1099	1367	3188	
Flt Permitted		0.71			0.78	1.00	0.43	1.00	1.00	0.44	1.00	
Satd. Flow (perm)		1142			1119	996	685	1660	1099	633	3188	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	148	176	5	64	109	33	27	400	85	55	472	35
RTOR Reduction (vph)	0	1	0	0	0	21	0	0	35	0	5	0
Lane Group Flow (vph)	0	328	0	0	173	12	27	400	50	55	502	0
Confl. Peds. (#/hr)	51		59	59		51	26		33	33		26
Heavy Vehicles (%)	2%	2%	2%	3%	5%	9%	2%	3%	10%	7%	2%	3%
Parking (#/hr)												0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)		38.5			38.5	38.5	60.0	60.0	60.0	60.0	60.0	
Effective Green, g (s)		40.5			40.5	40.5	62.0	62.0	62.0	62.0	62.0	
Actuated g/C Ratio		0.37			0.37	0.37	0.56	0.56	0.56	0.56	0.56	
Clearance Time (s)		6.0			6.0	6.0	5.5	5.5	5.5	5.5	5.5	
Lane Grp Cap (vph)		420			411	366	386	935	619	356	1796	
v/s Ratio Prot								c0.24			0.16	
v/s Ratio Perm		c0.29			0.15	0.01	0.04		0.05	0.09		
v/c Ratio		0.78			0.42	0.03	0.07	0.43	0.08	0.15	0.28	
Uniform Delay, d1		30.8			26.0	22.2	10.9	13.8	11.0	11.5	12.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		13.5			3.1	0.2	0.4	1.4	0.3	0.9	0.4	
Delay (s)		44.3			29.1	22.4	11.3	15.2	11.2	12.4	12.8	
Level of Service		D			C	C	B	B	B	B	B	
Approach Delay (s)		44.3			28.0			14.4			12.8	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

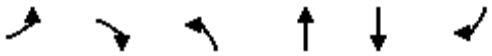
Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	307	48	797	894	169
v/c Ratio	1.23	0.22	0.78	1.05	0.45
Control Delay	167.8	5.8	5.9	64.4	5.0
Queue Delay	0.0	0.0	0.7	0.0	0.0
Total Delay	167.8	5.8	6.6	64.4	5.0
Queue Length 50th (ft)	~257	3	44	~691	4
Queue Length 95th (ft)	#434	m4	m67	#938	25
Internal Link Dist (ft)	494		293	410	
Turn Bay Length (ft)		125			
Base Capacity (vph)	250	215	1022	851	379
Starvation Cap Reductn	0	0	55	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.23	0.22	0.82	1.05	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

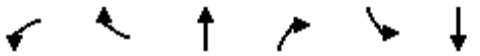
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	191	95	45	741	831	157
Future Volume (vph)	191	95	45	741	831	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	10	10	10
Grade (%)	4%			3%	-5%	
Total Lost time (s)	3.0		3.0	3.0	3.0	3.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.81		1.00	1.00	1.00	0.43
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1030		1464	1541	1588	581
Flt Permitted	0.97		0.08	1.00	1.00	1.00
Satd. Flow (perm)	1030		121	1541	1588	581
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	205	102	48	797	894	169
RTOR Reduction (vph)	16	0	0	0	0	68
Lane Group Flow (vph)	291	0	48	797	894	101
Confl. Peds. (#/hr)	165	259	128			128
Heavy Vehicles (%)	7%	2%	2%	2%	3%	4%
Parking (#/hr)	0	0				
Turn Type	Prot		pm+pt	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases			2			6
Actuated Green, G (s)	23.0		71.0	71.0	57.0	57.0
Effective Green, g (s)	25.0		73.0	73.0	59.0	59.0
Actuated g/C Ratio	0.23		0.66	0.66	0.54	0.54
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	234		214	1022	851	311
v/s Ratio Prot	c0.28		0.02	c0.52	c0.56	
v/s Ratio Perm			0.13			0.17
v/c Ratio	1.24		0.22	0.78	1.05	0.32
Uniform Delay, d1	42.5		35.7	12.9	25.5	14.3
Progression Factor	1.00		0.28	0.21	0.77	0.50
Incremental Delay, d2	139.9		1.2	2.9	42.7	2.3
Delay (s)	182.4		11.2	5.7	62.3	9.4
Level of Service	F		B	A	E	A
Approach Delay (s)	182.4			6.0	53.9	
Approach LOS	F			A	D	

Intersection Summary			
HCM 2000 Control Delay	53.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

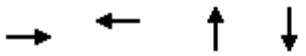
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	40	0	0	0	27	75
Future Volume (vph)	40	0	0	0	27	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	0	0	0	29	82

Direction, Lane #	WB 1	SB 1
Volume Total (vph)	43	111
Volume Left (vph)	43	29
Volume Right (vph)	0	0
Hadj (s)	0.23	0.11
Departure Headway (s)	4.4	4.1
Degree Utilization, x	0.05	0.13
Capacity (veh/h)	798	856
Control Delay (s)	7.6	7.7
Approach Delay (s)	7.6	7.7
Approach LOS	A	A

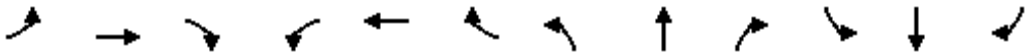
Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	60	7	614	388
v/c Ratio	0.33	0.03	0.60	0.36
Control Delay	29.0	26.5	5.7	5.7
Queue Delay	0.0	0.0	0.0	0.2
Total Delay	29.0	26.5	5.7	5.9
Queue Length 50th (ft)	20	2	90	73
Queue Length 95th (ft)	56	13	m128	95
Internal Link Dist (ft)	696	244	287	403
Turn Bay Length (ft)				
Base Capacity (vph)	183	220	1017	1091
Starvation Cap Reductn	0	0	12	233
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.03	0.61	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1	22	2	1	3	32	488	2	1	315	14
Future Volume (vph)	28	1	22	2	1	3	32	488	2	1	315	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			6%			-8%	
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.74			0.90			1.00			0.98	
Flpb, ped/bikes		0.87			0.86			0.98			1.00	
Frt		0.94			0.92			1.00			0.99	
Flt Protected		0.97			0.99			1.00			1.00	
Satd. Flow (prot)		875			1069			1434			1482	
Flt Permitted		0.87			0.96			0.96			1.00	
Satd. Flow (perm)		781			1041			1380			1482	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	33	1	26	2	1	4	38	574	2	1	371	16
RTOR Reduction (vph)	0	21	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	39	0	0	4	0	0	614	0	0	387	0
Confl. Peds. (#/hr)	63		247	247		63	158		195	195		158
Heavy Vehicles (%)	4%	2%	2%	2%	2%	2%	3%	2%	2%	2%	5%	2%
Parking (#/hr)		0			0			0			0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		21.0			21.0			79.0			79.0	
Effective Green, g (s)		23.0			23.0			81.0			81.0	
Actuated g/C Ratio		0.21			0.21			0.74			0.74	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		163			217			1016			1091	
v/s Ratio Prot												
v/s Ratio Perm		c0.05			0.00			c0.44			0.26	
v/c Ratio		0.24			0.02			0.60			0.35	
Uniform Delay, d1		36.2			34.5			6.9			5.2	
Progression Factor		1.00			1.00			0.49			0.91	
Incremental Delay, d2		3.5			0.1			2.1			0.9	
Delay (s)		39.7			34.7			5.5			5.6	
Level of Service		D			C			A			A	
Approach Delay (s)		39.7			34.7			5.5			5.6	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

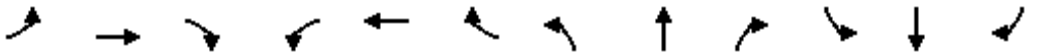
c Critical Lane Group

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	833	125	149	754
v/c Ratio	0.13	0.88	0.32	0.52	0.68
Control Delay	24.6	23.4	9.9	7.3	1.8
Queue Delay	0.0	2.9	0.0	0.0	1.1
Total Delay	24.6	26.3	9.9	7.3	2.9
Queue Length 50th (ft)	16	395	26	3	25
Queue Length 95th (ft)	48	#770	m44	m3	m22
Internal Link Dist (ft)	190	279			293
Turn Bay Length (ft)			100	125	
Base Capacity (vph)	352	948	390	286	1105
Starvation Cap Reductn	0	54	0	0	157
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.93	0.32	0.52	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

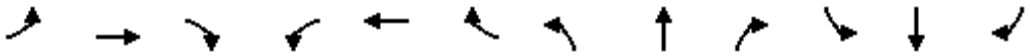
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	5	17	0	0	0	5	794	120	143	704	19
Future Volume (vph)	20	5	17	0	0	0	5	794	120	143	704	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	10	12	10	10	10	10	12
Grade (%)		0%			0%			2%			-3%	
Total Lost time (s)		3.5						3.5	3.5	3.0	3.5	
Lane Util. Factor		1.00						1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00						1.00	0.48	1.00	1.00	
Flpb, ped/bikes		1.00						1.00	1.00	1.00	1.00	
Frt		0.95						1.00	0.85	1.00	1.00	
Flt Protected		0.98						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1549						1519	622	1509	1538	
Flt Permitted		0.98						1.00	1.00	0.18	1.00	
Satd. Flow (perm)		1549						1513	622	289	1538	
Peak-hour factor, PHF	0.90	0.90	0.90	0.96	0.90	0.96	0.90	0.96	0.96	0.96	0.96	0.90
Adj. Flow (vph)	22	6	19	0	0	0	6	827	125	149	733	21
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	0	0	0	833	125	149	753	0
Confl. Peds. (#/hr)				41		88			118	118		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	4%	2%	5%	2%
Turn Type	Perm	NA					Perm	NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)		22.0						67.0	67.0	77.0	77.0	
Effective Green, g (s)		24.0						69.0	69.0	79.0	79.0	
Actuated g/C Ratio		0.22						0.63	0.63	0.72	0.72	
Clearance Time (s)		5.5						5.5	5.5	5.0	5.5	
Vehicle Extension (s)		1.0						1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)		337						949	390	285	1104	
v/s Ratio Prot										0.03	c0.49	
v/s Ratio Perm		0.02						c0.55	0.20	0.34		
v/c Ratio		0.10						0.88	0.32	0.52	0.68	
Uniform Delay, d1		34.3						17.0	9.6	12.4	8.6	
Progression Factor		1.00						0.78	0.82	1.39	0.16	
Incremental Delay, d2		0.6						8.6	1.6	0.6	0.3	
Delay (s)		34.9						21.9	9.4	17.9	1.7	
Level of Service		C						C	A	B	A	
Approach Delay (s)		34.9			0.0			20.3			4.3	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

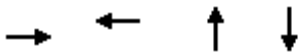
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	270	23	0	0	0	0	0	39	43	60	0
Future Volume (Veh/h)	0	270	23	0	0	0	0	0	39	43	60	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	318	27	0	0	0	0	0	46	51	71	0
Pedestrians		57			67			95			163	
Lane Width (ft)		12.0			0.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		5			0			8			14	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		339			770							
pX, platoon unblocked												
vC, conflicting volume	163			440			519	590	494	608	603	220
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	163			440			519	590	494	608	603	220
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	91	81	78	100
cM capacity (veh/h)	1223			1031			290	335	530	271	329	675

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	345	46	122
Volume Left	0	0	51
Volume Right	27	46	0
cSH	1700	530	302
Volume to Capacity	0.20	0.09	0.40
Queue Length 95th (ft)	0	7	47
Control Delay (s)	0.0	12.4	24.8
Lane LOS		B	C
Approach Delay (s)	0.0	12.4	24.8
Approach LOS		B	C

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

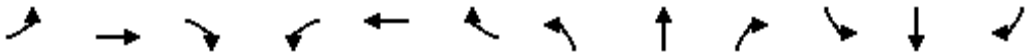


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	386	159	456	376
v/c Ratio	0.99	0.58	0.57	0.56
Control Delay	71.1	26.6	1.6	15.2
Queue Delay	0.0	0.1	0.6	0.5
Total Delay	71.1	26.7	2.2	15.7
Queue Length 50th (ft)	256	54	0	76
Queue Length 95th (ft)	#470	132	m0	207
Internal Link Dist (ft)	690	359	289	287
Turn Bay Length (ft)				
Base Capacity (vph)	390	276	794	675
Starvation Cap Reductn	0	0	106	79
Spillback Cap Reductn	0	2	0	33
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.99	0.58	0.66	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

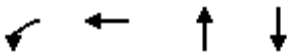
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	220	55	66	0	77	0	387	23	51	287	0
Future Volume (vph)	73	220	55	66	0	77	0	387	23	51	287	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	14	14	14	11	11	8	11	11	8
Grade (%)		0%			0%			5%			-8%	
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.91			0.69			0.96			1.00	
Flpb, ped/bikes		0.93			1.00			1.00			1.00	
Frt		0.98			0.93			0.99			1.00	
Flt Protected		0.99			0.98			1.00			0.99	
Satd. Flow (prot)		1154			955			1504			1468	
Flt Permitted		0.90			0.67			1.00			0.87	
Satd. Flow (perm)		1056			653			1504			1281	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	81	244	61	73	0	86	0	430	26	57	319	0
RTOR Reduction (vph)	0	6	0	0	39	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	380	0	0	120	0	0	454	0	0	376	0
Confl. Peds. (#/hr)	175		150	150		175	74		253	253		74
Heavy Vehicles (%)	3%	2%	6%	10%	2%	6%	2%	2%	2%	8%	4%	2%
Parking (#/hr)		0			0						0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4						2		
Actuated Green, G (s)		38.0			38.0			56.0			56.0	
Effective Green, g (s)		40.0			40.0			58.0			58.0	
Actuated g/C Ratio		0.36			0.36			0.53			0.53	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		384			237			793			675	
v/s Ratio Prot								c0.30				
v/s Ratio Perm		c0.36			0.18						0.29	
v/c Ratio		0.99			0.51			0.57			0.56	
Uniform Delay, d1		34.8			27.3			17.6			17.4	
Progression Factor		0.77			1.00			0.00			0.67	
Incremental Delay, d2		42.7			7.6			1.6			3.1	
Delay (s)		69.4			34.9			1.6			14.7	
Level of Service		E			C			A			B	
Approach Delay (s)		69.4			34.9			1.6			14.7	
Approach LOS		E			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.0	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)	10.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

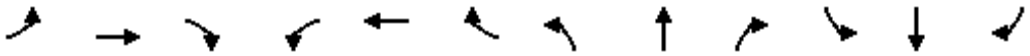
c Critical Lane Group



Lane Group	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	145	214	812	737
v/c Ratio	0.60	0.56	0.70	0.63
Control Delay	53.5	16.1	5.8	2.2
Queue Delay	0.0	0.4	4.3	0.2
Total Delay	53.5	16.5	10.1	2.4
Queue Length 50th (ft)	90	10	136	9
Queue Length 95th (ft)	m157	m85	m181	14
Internal Link Dist (ft)		302	370	279
Turn Bay Length (ft)				
Base Capacity (vph)	243	381	1156	1175
Starvation Cap Reductn	0	0	264	61
Spillback Cap Reductn	0	21	176	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.60	0.59	0.91	0.66

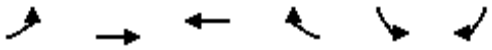
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	138	16	187	13	758	0	0	675	25
Future Volume (vph)	0	0	0	138	16	187	13	758	0	0	675	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	12	10	12	10	10	10	10	12
Grade (%)		0%			1%			1%			-2%	
Total Lost time (s)				3.0	3.0			3.5			3.5	
Lane Util. Factor				1.00	1.00			1.00			1.00	
Frpb, ped/bikes				1.00	0.92			1.00			1.00	
Flpb, ped/bikes				0.95	1.00			1.00			1.00	
Frt				1.00	0.86			1.00			1.00	
Flt Protected				0.95	1.00			1.00			1.00	
Satd. Flow (prot)				1407	1323			1526			1529	
Flt Permitted				0.95	1.00			0.99			1.00	
Satd. Flow (perm)				1407	1323			1506			1529	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	145	17	197	14	798	0	0	711	26
RTOR Reduction (vph)	0	0	0	0	153	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	145	61	0	0	812	0	0	736	0
Confl. Peds. (#/hr)	21		15	15		21			118	118		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	5%	2%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4			2					
Actuated Green, G (s)				17.0	17.0			82.5			82.5	
Effective Green, g (s)				19.0	19.0			84.5			84.5	
Actuated g/C Ratio				0.17	0.17			0.77			0.77	
Clearance Time (s)				5.0	5.0			5.5			5.5	
Lane Grp Cap (vph)				243	228			1156			1174	
v/s Ratio Prot					0.05						0.48	
v/s Ratio Perm				c0.10				c0.54				
v/c Ratio				0.60	0.27			0.70			0.63	
Uniform Delay, d1				42.0	39.5			6.4			5.7	
Progression Factor				1.01	1.12			0.65			0.05	
Incremental Delay, d2				10.2	2.8			1.3			1.9	
Delay (s)				52.6	47.1			5.5			2.2	
Level of Service				D	D			A			A	
Approach Delay (s)		0.0			49.3			5.5			2.2	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	230	23	0	88
Future Volume (Veh/h)	0	0	230	23	0	88
Sign Control		Free	Free		Stop	
Grade		0%	1%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	271	27	0	104
Pedestrians		56	74		67	
Lane Width (ft)		0.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	6		6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		382	771			
pX, platoon unblocked						
vC, conflicting volume	365				426	408
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	365				426	408
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	83
cM capacity (veh/h)	1127				519	608

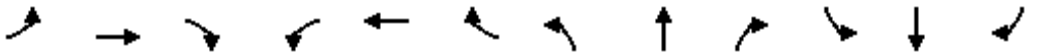
Direction, Lane #	WB 1	SB 1
Volume Total	298	104
Volume Left	0	0
Volume Right	27	104
cSH	1700	608
Volume to Capacity	0.18	0.17
Queue Length 95th (ft)	0	15
Control Delay (s)	0.0	12.1
Lane LOS		B
Approach Delay (s)	0.0	12.1
Approach LOS		B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	NBT	SBT	SBR
Lane Group Flow (vph)	519	296	170
v/c Ratio	0.83	0.68	0.41
Control Delay	39.7	39.9	10.8
Queue Delay	0.0	3.0	0.0
Total Delay	39.7	42.9	10.8
Queue Length 50th (ft)	311	189	36
Queue Length 95th (ft)	#489	m287	m64
Internal Link Dist (ft)	301	289	
Turn Bay Length (ft)			110
Base Capacity (vph)	624	437	415
Starvation Cap Reductn	0	68	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.83	0.80	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	28	408	20	9	252	150
Future Volume (vph)	0	0	0	0	0	0	28	408	20	9	252	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	14	14	14	14	14	10	10	8	10	10	10
Grade (%)		0%			0%			2%			-4%	
Total Lost time (s)								3.0			3.0	3.0
Lane Util. Factor								1.00			1.00	1.00
Frpb, ped/bikes								1.00			1.00	0.82
Flpb, ped/bikes								1.00			1.00	1.00
Frt								0.99			1.00	0.85
Flt Protected								1.00			1.00	1.00
Satd. Flow (prot)								1371			1533	1078
Flt Permitted								1.00			0.98	1.00
Satd. Flow (perm)								1371			1504	1078
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	0	0	0	32	464	23	10	286	170
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	101
Lane Group Flow (vph)	0	0	0	0	0	0	0	517	0	0	296	69
Confl. Peds. (#/hr)	31		24	24		31	27		18	18		27
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	10%	2%	6%	5%
Parking (#/hr)		0			0			0				
Turn Type							Split	NA		Perm	NA	Perm
Protected Phases							2	2			4	
Permitted Phases										4		4
Actuated Green, G (s)								48.0			30.0	30.0
Effective Green, g (s)								50.0			32.0	32.0
Actuated g/C Ratio								0.45			0.29	0.29
Clearance Time (s)								5.0			5.0	5.0
Lane Grp Cap (vph)								623			437	313
v/s Ratio Prot								c0.38				
v/s Ratio Perm											c0.20	0.06
v/c Ratio								0.83			0.68	0.22
Uniform Delay, d1								26.3			34.4	29.5
Progression Factor								1.00			0.94	1.08
Incremental Delay, d2								12.2			6.6	1.3
Delay (s)								38.5			39.1	33.1
Level of Service								D			D	C
Approach Delay (s)		0.0			0.0			38.5			36.9	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

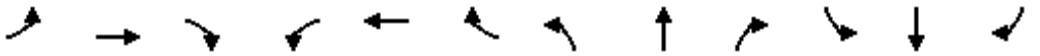
Lane Group	EBT	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	303	91	51	691	10	642	216
v/c Ratio	1.14	0.27	0.14	0.96	0.02	0.63	0.27
Control Delay	135.1	34.9	9.7	19.2	0.9	12.6	2.3
Queue Delay	0.0	0.0	0.0	23.6	0.0	0.9	0.0
Total Delay	135.1	34.9	9.7	42.8	0.9	13.5	2.3
Queue Length 50th (ft)	~239	51	0	173	0	218	6
Queue Length 95th (ft)	#415	98	30	m172	m0	298	20
Internal Link Dist (ft)	191	145		200		370	
Turn Bay Length (ft)					115		150
Base Capacity (vph)	265	331	355	718	428	1025	809
Starvation Cap Reductn	0	0	0	62	0	156	0
Spillback Cap Reductn	0	0	0	8	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.27	0.14	1.05	0.02	0.74	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

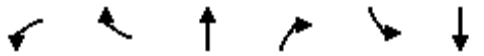
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	30	100	39	48	49	105	559	10	9	608	207
Future Volume (vph)	161	30	100	39	48	49	105	559	10	9	608	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	12	10	10	10	10	10	10
Grade (%)		3%			-1%			1%			-2%	
Total Lost time (s)		3.5			3.5	3.5		4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes		0.98			1.00	0.91		1.00	0.48		1.00	0.84
Flpb, ped/bikes		0.96			0.99	1.00		0.99	1.00		1.00	1.00
Frt		0.95			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.97			0.98	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)		1211			1559	1205		1481	629		1548	1104
Flt Permitted		0.76			0.79	1.00		0.72	1.00		0.99	1.00
Satd. Flow (perm)		941			1257	1205		1075	629		1534	1104
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	168	31	104	41	50	51	109	582	10	9	633	216
RTOR Reduction (vph)	0	17	0	0	0	38	0	0	3	0	0	72
Lane Group Flow (vph)	0	286	0	0	91	13	0	691	7	0	642	144
Confl. Peds. (#/hr)	23		16	16		23	50		157	157		50
Heavy Vehicles (%)	2%	2%	2%	8%	6%	10%	10%	5%	2%	10%	4%	4%
Parking (#/hr)	0	0	0									
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		8			4			2			6	
Permitted Phases	8			4		4	2		2	6		6
Actuated Green, G (s)		27.0			27.0	27.0		71.5	71.5		71.5	71.5
Effective Green, g (s)		29.0			29.0	29.0		73.5	73.5		73.5	73.5
Actuated g/C Ratio		0.26			0.26	0.26		0.67	0.67		0.67	0.67
Clearance Time (s)		5.5			5.5	5.5		6.0	6.0		6.0	6.0
Lane Grp Cap (vph)		248			331	317		718	420		1024	737
v/s Ratio Prot												
v/s Ratio Perm		c0.30			0.07	0.01		c0.64	0.01		0.42	0.13
v/c Ratio		1.15			0.27	0.04		0.96	0.02		0.63	0.20
Uniform Delay, d1		40.5			32.2	30.2		17.0	6.1		10.4	7.0
Progression Factor		1.00			1.00	1.00		0.72	1.18		0.95	1.74
Incremental Delay, d2		105.0			2.0	0.3		4.6	0.0		2.3	0.5
Delay (s)		145.5			34.2	30.4		16.7	7.2		12.2	12.6
Level of Service		F			C	C		B	A		B	B
Approach Delay (s)		145.5			32.8			16.6			12.3	
Approach LOS		F			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	695	32	31	699
Future Volume (Veh/h)	0	0	695	32	31	699
Sign Control	Stop		Free			Free
Grade	0%		1%			-2%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	724	33	32	728
Pedestrians	296		19			
Lane Width (ft)	0.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	0		2			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			259			280
pX, platoon unblocked	0.79	0.68			0.68	
vC, conflicting volume	1848	1036			1053	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1290	819			843	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			94	
cM capacity (veh/h)	133	256			540	

Direction, Lane #	NB 1	SB 1
Volume Total	757	760
Volume Left	0	32
Volume Right	33	0
cSH	1700	540
Volume to Capacity	0.45	0.06
Queue Length 95th (ft)	0	5
Control Delay (s)	0.0	1.7
Lane LOS		A
Approach Delay (s)	0.0	1.7
Approach LOS		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

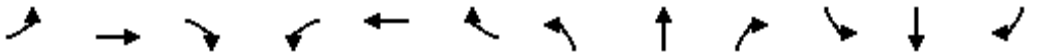
Lane Group	EBT	WBT	NBT	SBL	SBR
Lane Group Flow (vph)	573	1053	477	248	489	63
v/c Ratio	0.54	0.97	1.05	0.71	0.58	0.11
Control Delay	28.2	55.3	90.9	32.2	21.0	4.3
Queue Delay	0.0	0.0	20.7	0.0	0.5	0.0
Total Delay	28.2	55.3	111.6	32.2	21.5	4.3
Queue Length 50th (ft)	161	379	~367	102	207	2
Queue Length 95th (ft)	214	#517	#563	m171	m254	m11
Internal Link Dist (ft)	189	477	172		179	
Turn Bay Length (ft)				100		160
Base Capacity (vph)	1065	1082	456	351	839	548
Starvation Cap Reductn	0	0	0	0	101	0
Spillback Cap Reductn	0	0	59	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.97	1.20	0.71	0.66	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

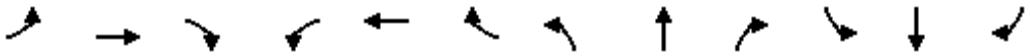
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	78	0	662	275	0	418	6	221	435	56
Future Volume (vph)	0	432	78	0	662	275	0	418	6	221	435	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	10	10	10
Grade (%)		1%			1%			2%			-2%	
Total Lost time (s)		4.0			4.0			4.0		3.0	4.0	4.0
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.95			0.96			0.99		1.00	1.00	0.72
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	1.00
Frt		0.98			0.96			1.00		1.00	1.00	0.85
Flt Protected		1.00			1.00			1.00		0.95	1.00	1.00
Satd. Flow (prot)		2725			2768			1319		1458	1565	969
Flt Permitted		1.00			1.00			1.00		0.19	1.00	1.00
Satd. Flow (perm)		2725			2768			1319		295	1565	969
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	485	88	0	744	309	0	470	7	248	489	63
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	29
Lane Group Flow (vph)	0	573	0	0	1053	0	0	476	0	248	489	34
Confl. Peds. (#/hr)	43		97	97		43	165		447	447		165
Heavy Vehicles (%)	2%	7%	5%	2%	4%	2%	2%	7%	2%	5%	3%	2%
Parking (#/hr)								0	0			
Turn Type		NA			NA			NA		pm+pt	NA	Perm
Protected Phases		6			2			8		7	4	
Permitted Phases										4		4
Actuated Green, G (s)		41.0			41.0			36.0		57.0	57.0	57.0
Effective Green, g (s)		43.0			43.0			38.0		59.0	59.0	59.0
Actuated g/C Ratio		0.39			0.39			0.35		0.54	0.54	0.54
Clearance Time (s)		6.0			6.0			6.0		5.0	6.0	6.0
Lane Grp Cap (vph)		1065			1082			455		348	839	519
v/s Ratio Prot		0.21			c0.38			c0.36		c0.12	0.31	
v/s Ratio Perm										0.27		0.03
v/c Ratio		0.54			0.97			1.05		0.71	0.58	0.07
Uniform Delay, d1		25.8			32.9			36.0		18.5	17.2	12.3
Progression Factor		1.00			1.00			1.00		1.47	1.05	1.22
Incremental Delay, d2		2.0			21.6			55.0		9.4	2.3	0.2
Delay (s)		27.8			54.6			91.0		36.6	20.4	15.2
Level of Service		C			D			F		D	C	B
Approach Delay (s)		27.8			54.6			91.0			25.0	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

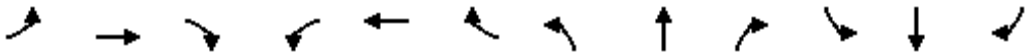
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	54	11	85	10	1155	0	0	752	23
Future Volume (Veh/h)	0	0	0	54	11	85	10	1155	0	0	752	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	0	0	55	11	87	10	1179	0	0	767	23
Pedestrians		109			89			25			37	
Lane Width (ft)		0.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			7			2			3	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								557			210	
pX, platoon unblocked	0.89	0.89	0.85	0.89	0.89	0.81	0.85			0.81		
vC, conflicting volume	1626	2176	529	1696	2187	716	899			1268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707	1327	107	786	1340	187	540			868		
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	100	74	91	85	99			100		
cM capacity (veh/h)	206	125	775	212	123	600	875			581		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	153	403	786	511	279
Volume Left	55	10	0	0	0
Volume Right	87	0	0	0	23
cSH	310	875	1700	1700	1700
Volume to Capacity	0.49	0.01	0.46	0.30	0.16
Queue Length 95th (ft)	65	1	0	0	0
Control Delay (s)	27.5	0.4	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	27.5	0.1		0.0	
Approach LOS	D				

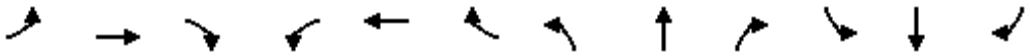
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	68.2%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	25	40	4	4	32	117	6	156	12	249	181	14
Future Volume (vph)	25	40	4	4	32	117	6	156	12	249	181	14
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	27	43	4	4	34	126	6	168	13	268	195	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	74	164	187	268	210
Volume Left (vph)	27	4	6	268	0
Volume Right (vph)	4	126	13	0	15
Hadj (s)	0.07	-0.39	0.04	0.53	0.02
Departure Headway (s)	5.9	5.3	5.3	5.9	5.4
Degree Utilization, x	0.12	0.24	0.28	0.44	0.32
Capacity (veh/h)	549	626	639	588	644
Control Delay (s)	9.7	9.9	10.4	12.4	9.7
Approach Delay (s)	9.7	9.9	10.4	11.2	
Approach LOS	A	A	B	B	

Intersection Summary				
Delay	10.7			
Level of Service	B			
Intersection Capacity Utilization	56.6%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	43	13	23	44	23	13	113	43	29	197	1
Future Volume (vph)	5	43	13	23	44	23	13	113	43	29	197	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	47	14	25	48	25	14	124	47	32	216	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	66	98	185	249
Volume Left (vph)	5	25	14	32
Volume Right (vph)	14	25	47	1
Hadj (s)	-0.06	-0.07	-0.08	0.12
Departure Headway (s)	5.0	5.0	4.5	4.7
Degree Utilization, x	0.09	0.13	0.23	0.32
Capacity (veh/h)	646	658	753	737
Control Delay (s)	8.5	8.7	8.9	9.9
Approach Delay (s)	8.5	8.7	8.9	9.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.2			
Level of Service	A			
Intersection Capacity Utilization	40.4%	ICU Level of Service	A	
Analysis Period (min)	15			