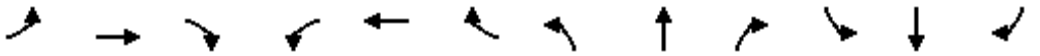
Appendix

HCM reports (Synchro and Vistro)

Lafayette Ave Full Closure HCM Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	140	30	740	135	235	65	200	900	215	405	5
Future Volume (vph)	10	140	30	740	135	235	65	200	900	215	405	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		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		0.98		1.00	0.90		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1697		1662	1552		1662	1750	1465	1612	1747	
Flt Permitted		1.00		0.95	1.00		0.15	1.00	1.00	0.48	1.00	
Satd. Flow (perm)		1697		1662	1552		262	1750	1465	821	1747	
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)	11	156	33	822	150	261	72	222	1000	239	450	6
RTOR Reduction (vph)	0	6	0	0	52	0	0	0	91	0	1	0
Lane Group Flow (vph)	0	194	0	822	359	0	72	222	909	239	455	0
Confl. Peds. (#/hr)			5	5					1	1		
Confl. Bikes (#/hr)						2			1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	0%	0%
Turn Type	Split	NA		Split	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	8	8		4	4			6	4		2	
Permitted Phases							6		6	2		
Actuated Green, G (s)		16.8		49.1	49.1		32.0	32.0	81.1	32.0	32.0	
Effective Green, g (s)		17.8		50.1	50.1		33.0	33.0	83.1	33.0	33.0	
Actuated g/C Ratio		0.16		0.44	0.44		0.29	0.29	0.74	0.29	0.29	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		2.5		4.0	4.0		5.2	5.2	4.0	5.2	5.2	
Lane Grp Cap (vph)		267		737	688		76	511	1130	239	510	
v/s Ratio Prot		c0.11		c0.49	0.23			0.13	0.36		0.26	
v/s Ratio Perm							0.27		0.26	c0.29		
v/c Ratio		0.73		1.12	0.52		0.95	0.43	0.80	1.00	0.89	
Uniform Delay, d1		45.2		31.4	22.7		39.1	32.4	9.6	40.0	38.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.9		69.5	0.9		86.5	1.3	4.5	58.2	18.9	
Delay (s)		54.1		100.9	23.7		125.6	33.7	14.1	98.2	57.2	
Level of Service		D		F	C		F	C	B	F	E	
Approach Delay (s)		54.1			75.2			23.7			71.3	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	155.7

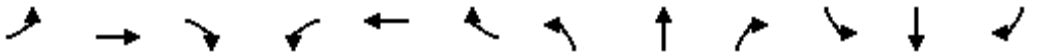
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	415	0	3815	3470	320
Future Vol, veh/h	0	415	0	3815	3470	320
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	3	3	1
Mvmt Flow	0	451	0	4147	3772	348

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1886	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.92	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.31	-	-	-	-
Pot Cap-1 Maneuver	0	~ 61	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 61	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	3008.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	61	-	-
HCM Lane V/C Ratio	-	7.395	-	-
HCM Control Delay (s)		$ 3008.4	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	52	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	225	95	65	215	160	70	760	75	40	490	485
Future Volume (vph)	380	225	95	65	215	160	70	760	75	40	490	485
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	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	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1646	1647		1662	1750	1432	1662	1718		1599	1733	1418
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.23	1.00		0.09	1.00	1.00
Satd. Flow (perm)	1646	1647		1662	1750	1432	406	1718		152	1733	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	245	103	71	234	174	76	826	82	43	533	527
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	286
Lane Group Flow (vph)	413	334	0	71	234	174	76	905	0	43	533	241
Confl. Peds. (#/hr)	3					3	5		4	4		5
Confl. Bikes (#/hr)			7			16			7			6
Heavy Vehicles (%)	1%	1%	0%	0%	0%	1%	0%	0%	2%	4%	1%	1%
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						Free	8			4		4
Actuated Green, G (s)	19.2	32.6		5.5	18.9	105.2	48.2	44.3		46.0	43.2	43.2
Effective Green, g (s)	20.2	33.6		6.5	19.9	105.2	50.2	45.3		48.0	44.2	44.2
Actuated g/C Ratio	0.19	0.32		0.06	0.19	1.00	0.48	0.43		0.46	0.42	0.42
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	316	526		102	331	1432	252	739		121	728	595
v/s Ratio Prot	c0.25	c0.20		0.04	0.13		c0.01	c0.53		0.01	0.31	
v/s Ratio Perm						c0.12	0.13			0.15		0.17
v/c Ratio	1.31	0.64		0.70	0.71	0.12	0.30	1.22		0.36	0.73	0.41
Uniform Delay, d1	42.5	30.6		48.4	39.9	0.0	17.8	30.0		23.9	25.5	21.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	159.2	2.5		18.6	6.7	0.2	0.7	113.1		1.8	3.8	0.5
Delay (s)	201.7	33.1		67.0	46.7	0.2	18.5	143.0		25.7	29.4	21.8
Level of Service	F	C		E	D	A	B	F		C	C	C
Approach Delay (s)		124.6			32.8			133.4			25.6	
Approach LOS		F			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	81.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	105.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

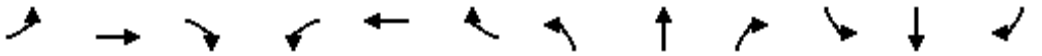
Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	95	620	35	25	740
Future Vol, veh/h	20	95	620	35	25	740
Conflicting Peds, #/hr	1	0	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	22	107	697	39	28	831

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1633	745	0	0	764	0
Stage 1	745	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	113	417	-	-	858	-
Stage 1	473	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	107	407	-	-	838	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	405	-	-	-	-	-

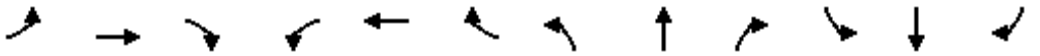
Approach	WB	NB	SB
HCM Control Delay, s	29.3	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	274	838	-
HCM Lane V/C Ratio	-	-	0.472	0.034	-
HCM Control Delay (s)	-	-	29.3	9.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.4	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	435	210	440	695	15	0	0	0	120	540	200
Future Volume (vph)	85	435	210	440	695	15	0	0	0	120	540	200
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00						0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00						1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.95		1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1646	3057		1646	1726						3257	1296
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1646	3057		1646	1726						3257	1296
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)	89	458	221	463	732	16	0	0	0	126	568	211
RTOR Reduction (vph)	0	66	0	0	1	0	0	0	0	0	0	156
Lane Group Flow (vph)	89	613	0	463	747	0	0	0	0	0	694	55
Confl. Peds. (#/hr)	12		47	47		12	38		18	18		38
Confl. Bikes (#/hr)			1			11			1			24
Heavy Vehicles (%)	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	1%
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	5.9	22.9		24.4	41.4						20.7	20.7
Effective Green, g (s)	5.9	22.9		24.4	41.4						20.7	20.7
Actuated g/C Ratio	0.07	0.29		0.30	0.52						0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	121	875		502	893						842	335
v/s Ratio Prot	0.05	0.20		c0.28	c0.43							
v/s Ratio Perm											0.21	0.04
v/c Ratio	0.74	0.70		0.92	0.84						0.82	0.16
Uniform Delay, d1	36.3	25.5		26.9	16.4						27.9	22.9
Progression Factor	1.00	1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2	20.5	4.7		22.6	9.2						6.6	0.2
Delay (s)	56.8	30.2		49.4	25.6						34.5	23.2
Level of Service	E	C		D	C						C	C
Approach Delay (s)		33.2			34.7			0.0			31.9	
Approach LOS		C			C			A			C	

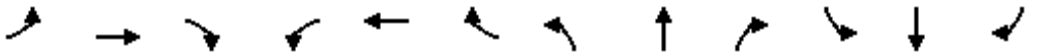
Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	870	245	360	695	295	235	975	265	375	1010	125
Future Volume (vph)	285	870	245	360	695	295	235	975	265	375	1010	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	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	0.97		1.00	0.96		1.00	0.97		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)	1599	3172		1646	3101		1646	3167		1583	3228	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1599	3172		1646	3101		1646	3167		1583	3228	
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)	297	906	255	375	724	307	245	1016	276	391	1052	130
RTOR Reduction (vph)	0	16	0	0	29	0	0	16	0	0	6	0
Lane Group Flow (vph)	297	1145	0	375	1002	0	245	1276	0	391	1176	0
Confl. Peds. (#/hr)	2		1	1		2	6		7	7		6
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	4%	1%	1%	1%	1%	4%	1%	1%	1%	5%	1%	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)	21.0	41.0		23.0	43.0		16.0	50.0		26.0	60.0	
Effective Green, g (s)	22.0	42.0		24.0	44.0		17.0	51.0		27.0	61.0	
Actuated g/C Ratio	0.14	0.26		0.15	0.28		0.11	0.32		0.17	0.38	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.3		2.5	4.3		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)	219	832		246	852		174	1009		267	1230	
v/s Ratio Prot	0.19	c0.36		c0.23	0.32		0.15	c0.40		c0.25	0.36	
v/s Ratio Perm												
v/c Ratio	1.36	1.38		1.52	1.18		1.41	1.26		1.46	0.96	
Uniform Delay, d1	69.0	59.0		68.0	58.0		71.5	54.5		66.5	48.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	187.1	176.7		255.6	91.5		214.2	127.2		228.4	16.3	
Delay (s)	256.1	235.7		323.6	149.5		285.7	181.7		294.9	64.5	
Level of Service	F	F		F	F		F	F		F	E	
Approach Delay (s)		239.9			195.9			198.3			121.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	187.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	130.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lafayette Ave Right In Only HCM Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	140	30	735	135	255	65	210	905	215	395	5
Future Volume (vph)	10	140	30	735	135	255	65	210	905	215	395	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		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		0.98		1.00	0.90		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1697		1662	1546		1662	1750	1465	1613	1746	
Flt Permitted		1.00		0.95	1.00		0.16	1.00	1.00	0.47	1.00	
Satd. Flow (perm)		1697		1662	1546		288	1750	1465	793	1746	
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)	11	156	33	817	150	283	72	233	1006	239	439	6
RTOR Reduction (vph)	0	6	0	0	56	0	0	0	91	0	1	0
Lane Group Flow (vph)	0	194	0	817	377	0	72	233	915	239	444	0
Confl. Peds. (#/hr)			5	5					1	1		
Confl. Bikes (#/hr)						2			1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	0%	0%
Turn Type	Split	NA		Split	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	8	8		4	4			6	4		2	
Permitted Phases							6		6	2		
Actuated Green, G (s)		16.8		49.1	49.1		32.0	32.0	81.1	32.0	32.0	
Effective Green, g (s)		17.8		50.1	50.1		33.0	33.0	83.1	33.0	33.0	
Actuated g/C Ratio		0.16		0.44	0.44		0.29	0.29	0.74	0.29	0.29	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		2.5		4.0	4.0		5.2	5.2	4.0	5.2	5.2	
Lane Grp Cap (vph)		267		737	686		84	511	1130	231	510	
v/s Ratio Prot		c0.11		c0.49	0.24			0.13	0.36		0.25	
v/s Ratio Perm							0.25		0.27	c0.30		
v/c Ratio		0.73		1.11	0.55		0.86	0.46	0.81	1.03	0.87	
Uniform Delay, d1		45.2		31.4	23.1		37.7	32.6	9.7	40.0	37.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.9		67.0	1.1		57.5	1.4	4.6	68.5	16.3	
Delay (s)		54.1		98.4	24.2		95.3	34.1	14.4	108.5	54.2	
Level of Service		D		F	C		F	C	B	F	D	
Approach Delay (s)		54.1			72.7			22.3			73.2	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	168.7

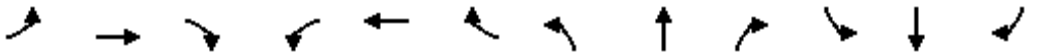
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	435	0	3810	3460	315
Future Vol, veh/h	0	435	0	3810	3460	315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	3	3	1
Mvmt Flow	0	473	0	4141	3761	342

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1881	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.92	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.31	-	-	-	-
Pot Cap-1 Maneuver	0	~ 62	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 62	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	3110.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	62	-	-
HCM Lane V/C Ratio	-	7.626	-	-
HCM Control Delay (s)	-	$ 3110.3	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	54.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	225	90	65	210	160	70	770	75	40	475	485
Future Volume (vph)	385	225	90	65	210	160	70	770	75	40	475	485
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	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	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1646	1650		1662	1750	1432	1662	1718		1599	1733	1417
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.24	1.00		0.09	1.00	1.00
Satd. Flow (perm)	1646	1650		1662	1750	1432	418	1718		156	1733	1417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	245	98	71	228	174	76	837	82	43	516	527
RTOR Reduction (vph)	0	13	0	0	0	0	0	3	0	0	0	295
Lane Group Flow (vph)	418	330	0	71	228	174	76	916	0	43	516	232
Confl. Peds. (#/hr)	3					3	5		4	4		5
Confl. Bikes (#/hr)			7			16			7			6
Heavy Vehicles (%)	1%	1%	0%	0%	0%	1%	0%	0%	2%	4%	1%	1%
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						Free	8			4		4
Actuated Green, G (s)	20.2	33.4		5.5	18.7	105.0	47.2	43.3		45.0	42.2	42.2
Effective Green, g (s)	21.2	34.4		6.5	19.7	105.0	49.2	44.3		47.0	43.2	43.2
Actuated g/C Ratio	0.20	0.33		0.06	0.19	1.00	0.47	0.42		0.45	0.41	0.41
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	332	540		102	328	1432	253	724		122	713	582
v/s Ratio Prot	c0.25	0.20		0.04	c0.13		c0.01	c0.53		0.01	0.30	
v/s Ratio Perm						c0.12	0.13			0.15		0.16
v/c Ratio	1.26	0.61		0.70	0.70	0.12	0.30	1.27		0.35	0.72	0.40
Uniform Delay, d1	41.9	29.7		48.3	39.8	0.0	18.1	30.4		24.0	25.9	21.8
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	138.7	2.1		18.6	6.3	0.2	0.7	130.3		1.8	3.6	0.5
Delay (s)	180.6	31.7		66.9	46.1	0.2	18.7	160.6		25.7	29.5	22.2
Level of Service	F	C		E	D	A	B	F		C	C	C
Approach Delay (s)		113.5			32.3			149.8			25.8	
Approach LOS		F			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	84.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

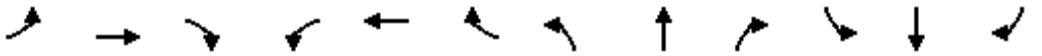
Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	95	625	35	10	745
Future Vol, veh/h	20	95	625	35	10	745
Conflicting Peds, #/hr	1	0	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	22	107	702	39	11	837

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1610	750	0	0	769	0
Stage 1	750	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	116	415	-	-	854	-
Stage 1	470	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	112	405	-	-	834	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.7	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	278	834	-
HCM Lane V/C Ratio	-	-	0.465	0.013	-
HCM Control Delay (s)	-	-	28.7	9.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	430	215	445	695	15	0	0	0	120	555	200
Future Volume (vph)	80	430	215	445	695	15	0	0	0	120	555	200
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00						0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00						1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.95		1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1646	3052		1646	1726						3257	1297
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1646	3052		1646	1726						3257	1297
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)	84	453	226	468	732	16	0	0	0	126	584	211
RTOR Reduction (vph)	0	64	0	0	1	0	0	0	0	0	0	156
Lane Group Flow (vph)	84	615	0	468	747	0	0	0	0	0	710	55
Confl. Peds. (#/hr)	12		47	47		12	38		18	18		38
Confl. Bikes (#/hr)			1			11			1			24
Heavy Vehicles (%)	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	1%
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	5.8	22.4		24.7	41.3						20.9	20.9
Effective Green, g (s)	5.8	22.4		24.7	41.3						20.9	20.9
Actuated g/C Ratio	0.07	0.28		0.31	0.52						0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	119	854		508	891						850	338
v/s Ratio Prot	0.05	0.20		c0.28	c0.43							
v/s Ratio Perm											0.22	0.04
v/c Ratio	0.71	0.72		0.92	0.84						0.84	0.16
Uniform Delay, d1	36.3	26.0		26.7	16.5						27.9	22.8
Progression Factor	1.00	1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2	17.3	5.2		22.2	9.3						7.1	0.2
Delay (s)	53.6	31.2		48.9	25.8						35.1	23.0
Level of Service	D	C		D	C						D	C
Approach Delay (s)		33.6			34.7			0.0			32.3	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Hawthorne Ave Full Closure HCM Reports

Intersection	
Int Delay, s/veh	26.1

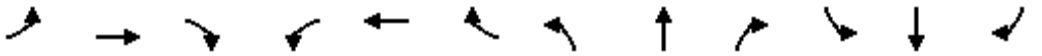
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	150	0	3815	3845	55
Future Vol, veh/h	0	150	0	3815	3845	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	115
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	163	0	4147	4179	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	2090	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	~ 45	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 45	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1367.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	45	-	-
HCM Lane V/C Ratio	-	3.623	-	-
HCM Control Delay (s)	-	$ 1367.2	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	18.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	225	100	70	215	160	70	735	70	35	505	480
Future Volume (vph)	390	225	100	70	215	160	70	735	70	35	505	480
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	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	0.95		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1646	1643		1662	1750	1432	1662	1719		1599	1733	1417
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.21	1.00		0.09	1.00	1.00
Satd. Flow (perm)	1646	1643		1662	1750	1432	362	1719		156	1733	1417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	245	109	76	234	174	76	799	76	38	549	522
RTOR Reduction (vph)	0	15	0	0	0	0	0	3	0	0	0	275
Lane Group Flow (vph)	424	339	0	76	234	174	76	872	0	38	549	247
Confl. Peds. (#/hr)	3					3	5		4	4		5
Confl. Bikes (#/hr)			7			16			7			6
Heavy Vehicles (%)	1%	1%	0%	0%	0%	1%	0%	0%	2%	4%	1%	1%
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						Free	8			4		4
Actuated Green, G (s)	20.2	33.7		5.5	19.0	105.3	47.2	43.3		45.0	42.2	42.2
Effective Green, g (s)	21.2	34.7		6.5	20.0	105.3	49.2	44.3		47.0	43.2	43.2
Actuated g/C Ratio	0.20	0.33		0.06	0.19	1.00	0.47	0.42		0.45	0.41	0.41
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	331	541		102	332	1432	229	723		121	710	581
v/s Ratio Prot	c0.26	c0.21		0.05	0.13		c0.02	c0.51		0.01	0.32	
v/s Ratio Perm						c0.12	0.14			0.13		0.17
v/c Ratio	1.28	0.63		0.75	0.70	0.12	0.33	1.21		0.31	0.77	0.42
Uniform Delay, d1	42.0	29.8		48.6	39.9	0.0	18.8	30.5		24.0	26.8	22.2
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	147.7	2.3		25.2	6.7	0.2	0.9	105.6		1.5	5.2	0.5
Delay (s)	189.7	32.1		73.8	46.5	0.2	19.6	136.1		25.5	32.1	22.7
Level of Service	F	C		E	D	A	B	F		C	C	C
Approach Delay (s)		118.0			34.2			126.8			27.4	
Approach LOS		F			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	78.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	105.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

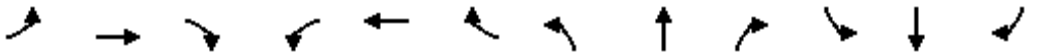
Intersection	
Int Delay, s/veh	13.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	50	710	55	60	740
Future Vol, veh/h	65	50	710	55	60	740
Conflicting Peds, #/hr	1	0	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	73	56	798	62	67	831

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1823	857	0	0	888	0
Stage 1	857	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	86	360	-	-	771	-
Stage 1	419	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	76	352	-	-	753	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	372	-	-	-	-	-

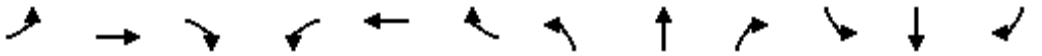
Approach	WB	NB	SB
HCM Control Delay, s	193	0	0.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	115	753	-
HCM Lane V/C Ratio	-	-	1.124	0.09	-
HCM Control Delay (s)	-	-	193	10.2	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	7.9	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	405	180	380	705	25	0	0	0	125	525	225
Future Volume (vph)	135	405	180	380	705	25	0	0	0	125	525	225
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00						0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00						1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.95		1.00	0.99						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1646	3068		1646	1722						3255	1296
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1646	3068		1646	1722						3255	1296
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)	142	426	189	400	742	26	0	0	0	132	553	237
RTOR Reduction (vph)	0	60	0	0	2	0	0	0	0	0	0	176
Lane Group Flow (vph)	142	555	0	400	766	0	0	0	0	0	685	61
Confl. Peds. (#/hr)	12		47	47		12	38		18	18		38
Confl. Bikes (#/hr)			1			11			1			24
Heavy Vehicles (%)	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	1%
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	8.5	25.5		21.9	38.9						20.6	20.6
Effective Green, g (s)	8.5	25.5		21.9	38.9						20.6	20.6
Actuated g/C Ratio	0.11	0.32		0.27	0.49						0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	174	977		450	837						838	333
v/s Ratio Prot	0.09	0.18		c0.24	c0.45							
v/s Ratio Perm											0.21	0.05
v/c Ratio	0.82	0.57		0.89	0.92						0.82	0.18
Uniform Delay, d1	35.0	22.7		27.9	19.0						27.9	23.1
Progression Factor	1.00	1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2	24.6	2.4		18.8	16.3						6.2	0.3
Delay (s)	59.6	25.1		46.7	35.4						34.2	23.4
Level of Service	E	C		D	D						C	C
Approach Delay (s)		31.5			39.2			0.0			31.4	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	870	250	350	705	285	245	970	260	370	1010	125
Future Volume (vph)	285	870	250	350	705	285	245	970	260	370	1010	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	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	0.97		1.00	0.96		1.00	0.97		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)	1599	3171		1646	3107		1646	3168		1583	3228	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1599	3171		1646	3107		1646	3168		1583	3228	
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)	297	906	260	365	734	297	255	1010	271	385	1052	130
RTOR Reduction (vph)	0	17	0	0	27	0	0	15	0	0	6	0
Lane Group Flow (vph)	297	1149	0	365	1004	0	255	1266	0	385	1176	0
Confl. Peds. (#/hr)	2		1	1		2	6		7	7		6
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	4%	1%	1%	1%	1%	4%	1%	1%	1%	5%	1%	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)	22.0	42.0		23.0	43.0		17.0	49.0		26.0	58.0	
Effective Green, g (s)	23.0	43.0		24.0	44.0		18.0	50.0		27.0	59.0	
Actuated g/C Ratio	0.14	0.27		0.15	0.28		0.11	0.31		0.17	0.37	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.3		2.5	4.3		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)	229	852		246	854		185	990		267	1190	
v/s Ratio Prot	0.19	c0.36		c0.22	0.32		0.15	c0.40		c0.24	0.36	
v/s Ratio Perm												
v/c Ratio	1.30	1.35		1.48	1.18		1.38	1.28		1.44	0.99	
Uniform Delay, d1	68.5	58.5		68.0	58.0		71.0	55.0		66.5	50.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	162.0	164.7		238.2	91.3		200.4	133.2		218.9	23.1	
Delay (s)	230.5	223.2		306.2	149.3		271.4	188.2		285.4	73.3	
Level of Service	F	F		F	F		F	F		F	E	
Approach Delay (s)		224.7			190.4			202.1			125.4	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	184.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	129.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Hawthorne Ave Right In Only HCM Reports

Intersection	
Int Delay, s/veh	24.4

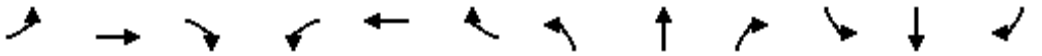
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	140	0	3825	3905	45
Future Vol, veh/h	0	140	0	3825	3905	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	115
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	152	0	4158	4245	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	2123	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	~ 42	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 42	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1379.6	0	0
HCM LOS	F		

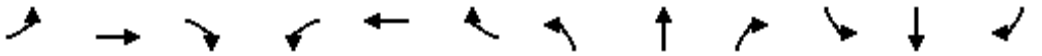
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	42	-	-
HCM Lane V/C Ratio	-	3.623	-	-
HCM Control Delay (s)	-	$ 1379.6	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	17.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



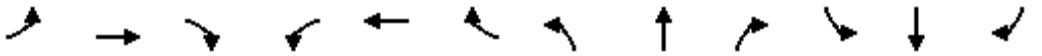
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	435	40	10	455	1195	140	0	585
Future Volume (vph)	0	0	0	0	435	40	10	455	1195	140	0	585
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)					4.0			4.0	4.0	4.0		4.0
Lane Util. Factor					1.00			1.00	1.00	1.00		1.00
Frpb, ped/bikes					1.00			1.00	0.99	1.00		0.99
Flpb, ped/bikes					1.00			1.00	1.00	1.00		1.00
Frt					0.99			1.00	0.85	1.00		0.85
Flt Protected					1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)					1711			1731	1458	1630		1468
Flt Permitted					1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)					1711			1731	1458	1630		1468
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)	0	0	0	0	483	44	11	506	1328	156	0	650
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	314	0	0	218
Lane Group Flow (vph)	0	0	0	0	520	0	0	517	1014	156	0	432
Confl. Peds. (#/hr)	2					2	1		1	1		1
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	1%	1%	2%	0%	0%
Turn Type					NA		Split	NA	custom	Prot		Perm
Protected Phases		2			6		8	8	1	4		
Permitted Phases									2 8			4
Actuated Green, G (s)					33.0			27.0	60.0	27.0		27.0
Effective Green, g (s)					34.0			28.0	62.0	28.0		28.0
Actuated g/C Ratio					0.33			0.27	0.61	0.27		0.27
Clearance Time (s)					5.0			5.0	5.0	5.0		5.0
Vehicle Extension (s)					3.0			3.0	3.0	3.0		3.0
Lane Grp Cap (vph)					570			475	943	447		402
v/s Ratio Prot					0.30			0.30	c0.36	0.10		
v/s Ratio Perm									0.34			c0.29
v/c Ratio					0.91			1.09	1.08	0.35		1.08
Uniform Delay, d1					32.6			37.0	20.0	29.7		37.0
Progression Factor					1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2					21.4			67.3	51.8	0.5		66.5
Delay (s)					54.0			104.3	71.8	30.2		103.5
Level of Service					D			F	E	C		F
Approach Delay (s)		0.0			54.0			80.9			89.3	
Approach LOS		A			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	78.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



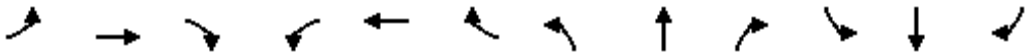
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	715	35	225	535	0	0	0	0	185	595	305
Future Volume (vph)	0	715	35	225	535	0	0	0	0	185	595	305
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frpb, ped/bikes		0.99		1.00	1.00						1.00	0.85
Flpb, ped/bikes		1.00		1.00	1.00						0.99	1.00
Frt		0.99		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)		1712		1614	1733						3220	1267
Flt Permitted		1.00		0.11	1.00						0.99	1.00
Satd. Flow (perm)		1712		189	1733						3220	1267
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)	0	794	39	250	594	0	0	0	0	206	661	339
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	175
Lane Group Flow (vph)	0	831	0	250	594	0	0	0	0	0	867	164
Confl. Peds. (#/hr)	30		138	138		30	71		53	53		71
Confl. Bikes (#/hr)			3			14						12
Heavy Vehicles (%)	0%	1%	0%	3%	1%	0%	0%	0%	0%	0%	1%	0%
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		8		7	4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		31.0		46.0	46.0						24.0	24.0
Effective Green, g (s)		32.0		47.0	47.0						25.0	25.0
Actuated g/C Ratio		0.40		0.59	0.59						0.31	0.31
Clearance Time (s)		5.0		5.0	5.0						5.0	5.0
Vehicle Extension (s)		0.2		0.2	0.2						0.2	0.2
Lane Grp Cap (vph)		684		306	1018						1006	395
v/s Ratio Prot		c0.49		c0.11	0.34							
v/s Ratio Perm				0.37							0.27	0.13
v/c Ratio		1.21		0.82	0.58						0.86	0.41
Uniform Delay, d1		24.0		30.1	10.4						25.9	21.7
Progression Factor		1.00		0.51	0.14						1.00	1.00
Incremental Delay, d2		109.6		1.5	0.0						9.7	3.2
Delay (s)		133.6		16.8	1.5						35.5	24.9
Level of Service		F		B	A						D	C
Approach Delay (s)		133.6			6.0			0.0			32.5	
Approach LOS		F			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.3%	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)	430	590	0	0	695	160	110	675	205	0	0	0
Future Volume (vph)	430	590	0	0	695	160	110	675	205	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	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			
Frpb, ped/bikes	1.00	1.00			1.00	0.96		1.00	0.92			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1662	1716			1733	1434		3247	1362			
Flt Permitted	0.12	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	212	1716			1733	1434		3247	1362			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	641	0	0	755	174	120	734	223	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	162	0	0	0
Lane Group Flow (vph)	467	641	0	0	755	113	0	854	61	0	0	0
Confl. Peds. (#/hr)	23		47	47		23	103		27	27		103
Confl. Bikes (#/hr)			3			7			4			
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	3	8			4			6				
Permitted Phases	8					4	6		6			
Actuated Green, G (s)	49.0	49.0			28.0	28.0		21.0	21.0			
Effective Green, g (s)	50.0	50.0			29.0	29.0		22.0	22.0			
Actuated g/C Ratio	0.62	0.62			0.36	0.36		0.28	0.28			
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			
Lane Grp Cap (vph)	440	1072			628	519		892	374			
v/s Ratio Prot	c0.23	0.37			c0.44							
v/s Ratio Perm	0.44					0.08		0.26	0.05			
v/c Ratio	1.06	0.60			1.20	0.22		0.96	0.16			
Uniform Delay, d1	28.2	9.0			25.5	17.7		28.5	22.0			
Progression Factor	0.50	0.20			1.00	1.00		1.00	1.00			
Incremental Delay, d2	33.0	0.1			105.7	0.1		21.4	0.9			
Delay (s)	47.1	1.8			131.2	17.7		50.0	23.0			
Level of Service	D	A			F	B		D	C			
Approach Delay (s)		20.9			109.9			44.4			0.0	
Approach LOS		C			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	55.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.3%	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)	365	1445	0	0	0	0	0	510	265	0	0	0
Future Volume (vph)	365	1445	0	0	0	0	0	510	265	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.95				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.95				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3230						3106				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3230						3106				
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)	415	1642	0	0	0	0	0	580	301	0	0	0
RTOR Reduction (vph)	0	39	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	2018	0	0	0	0	0	872	0	0	0	0
Confl. Peds. (#/hr)	5		7	7		5	10		4	4		10
Confl. Bikes (#/hr)			3						1			
Heavy Vehicles (%)	1%	2%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)		29.2						17.8				
Effective Green, g (s)		29.7						18.3				
Actuated g/C Ratio		0.53						0.33				
Clearance Time (s)		4.5						4.5				
Vehicle Extension (s)		2.6						2.0				
Lane Grp Cap (vph)		1713						1014				
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.62										
v/c Ratio		1.18						0.86				
Uniform Delay, d1		13.2						17.6				
Progression Factor		1.00						1.00				
Incremental Delay, d2		86.6						7.1				
Delay (s)		99.7						24.8				
Level of Service		F						C				
Approach Delay (s)		99.7			0.0			24.8			0.0	
Approach LOS		F			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	77.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

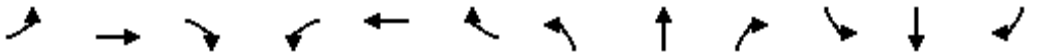
Intersection	
Int Delay, s/veh	9.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	45	715	50	60	710
Future Vol, veh/h	60	45	715	50	60	710
Conflicting Peds, #/hr	1	0	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	67	51	803	56	67	798

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1792	859	0	0	887	0
Stage 1	859	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	90	359	-	-	772	-
Stage 1	418	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	351	-	-	754	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	372	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	146.5	0	0.8
HCM LOS	F		

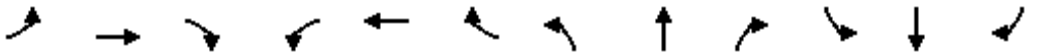
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	120	754	-
HCM Lane V/C Ratio	-	-	0.983	0.089	-
HCM Control Delay (s)	-	-	146.5	10.2	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	6.5	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	410	185	380	705	25	0	0	0	115	500	215
Future Volume (vph)	145	410	185	380	705	25	0	0	0	115	500	215
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00						0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00						1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.95		1.00	0.99						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1646	3066		1646	1722						3256	1295
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1646	3066		1646	1722						3256	1295
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)	153	432	195	400	742	26	0	0	0	121	526	226
RTOR Reduction (vph)	0	64	0	0	2	0	0	0	0	0	0	169
Lane Group Flow (vph)	153	563	0	400	766	0	0	0	0	0	647	57
Confl. Peds. (#/hr)	12		47	47		12	38		18	18		38
Confl. Bikes (#/hr)			1			11			1			24
Heavy Vehicles (%)	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	1%
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	9.1	26.5		21.3	38.7						20.2	20.2
Effective Green, g (s)	9.1	26.5		21.3	38.7						20.2	20.2
Actuated g/C Ratio	0.11	0.33		0.27	0.48						0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	187	1015		438	833						822	326
v/s Ratio Prot	0.09	0.18		c0.24	c0.45							
v/s Ratio Perm											0.20	0.04
v/c Ratio	0.82	0.56		0.91	0.92						0.79	0.18
Uniform Delay, d1	34.6	21.9		28.5	19.2						27.9	23.4
Progression Factor	1.00	1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2	23.4	2.2		23.2	16.9						5.0	0.3
Delay (s)	58.1	24.1		51.7	36.1						32.9	23.6
Level of Service	E	C		D	D						C	C
Approach Delay (s)		30.8			41.5			0.0			30.5	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Truman Ave, Reed Ln, Nels Anderson Pl Closure HCM Reports



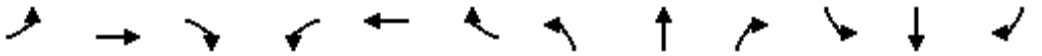
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	70	95	290	95	45	370	2285	60	90	2380	50
Future Volume (vph)	235	70	95	290	95	45	370	2285	60	90	2380	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	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	0.95		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1548	1597	1488	1646	1512		3225	3210		1511	3131	
Flt Permitted	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1548	1597	1488	1646	1512		3225	3210		1511	3131	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	76	103	315	103	49	402	2484	65	98	2587	54
RTOR Reduction (vph)	0	0	87	0	11	0	0	1	0	0	1	0
Lane Group Flow (vph)	150	181	16	315	141	0	402	2548	0	98	2640	0
Confl. Peds. (#/hr)	1					1			4	4		
Heavy Vehicles (%)	2%	0%	0%	1%	9%	11%	0%	3%	7%	10%	6%	0%
Turn Type	Split	NA	Prot	Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4	4	8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	21.8	21.8	21.8	28.0	28.0		9.0	61.2		16.0	68.2	
Effective Green, g (s)	22.8	22.8	22.8	29.0	29.0		10.0	63.2		17.0	70.2	
Actuated g/C Ratio	0.15	0.15	0.15	0.20	0.20		0.07	0.43		0.11	0.47	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	238	246	229	322	296		217	1370		173	1485	
v/s Ratio Prot	0.10	c0.11	0.01	c0.19	0.09		c0.12	c0.79		0.06	c0.84	
v/s Ratio Perm												
v/c Ratio	0.63	0.74	0.07	0.98	0.48		1.85	1.86		0.57	1.78	
Uniform Delay, d1	58.7	59.7	53.5	59.2	52.8		69.0	42.4		62.0	38.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	10.9	0.1	43.8	1.2		400.9	389.7		4.2	352.7	
Delay (s)	64.0	70.6	53.7	102.9	54.0		469.9	432.1		66.2	391.6	
Level of Service	E	E	D	F	D		F	F		E	F	
Approach Delay (s)		64.3			87.0			437.3			380.0	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	364.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	124.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	415	35	10	425	1195	150	0	645
Future Volume (vph)	0	0	0	0	415	35	10	425	1195	150	0	645
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)					4.0			4.0	4.0	4.0		4.0
Lane Util. Factor					1.00			1.00	1.00	1.00		1.00
Frpb, ped/bikes					1.00			1.00	0.99	1.00		0.99
Flpb, ped/bikes					1.00			1.00	1.00	1.00		1.00
Frt					0.99			1.00	0.85	1.00		0.85
Flt Protected					1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)					1712			1731	1458	1630		1468
Flt Permitted					1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)					1712			1731	1458	1630		1468
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)	0	0	0	0	461	39	11	472	1328	167	0	717
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	314	0	0	218
Lane Group Flow (vph)	0	0	0	0	493	0	0	483	1014	167	0	499
Confl. Peds. (#/hr)	2					2	1		1	1		1
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	1%	1%	2%	0%	0%
Turn Type					NA		Split	NA	custom	Prot		Perm
Protected Phases		2			6		8	8	1	4		
Permitted Phases									2 8			4
Actuated Green, G (s)					33.0			27.0	60.0	27.0		27.0
Effective Green, g (s)					34.0			28.0	62.0	28.0		28.0
Actuated g/C Ratio					0.33			0.27	0.61	0.27		0.27
Clearance Time (s)					5.0			5.0	5.0	5.0		5.0
Vehicle Extension (s)					3.0			3.0	3.0	3.0		3.0
Lane Grp Cap (vph)					570			475	943	447		402
v/s Ratio Prot					0.29			0.28	c0.36	0.10		
v/s Ratio Perm									0.34			c0.34
v/c Ratio					0.87			1.02	1.08	0.37		1.24
Uniform Delay, d1					31.9			37.0	20.0	29.9		37.0
Progression Factor					1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2					16.1			45.6	51.8	0.5		128.5
Delay (s)					47.9			82.6	71.8	30.4		165.5
Level of Service					D			F	E	C		F
Approach Delay (s)		0.0			47.9			74.7			140.0	
Approach LOS		A			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	88.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.4%	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)	0	1125	100	0	775	360	0	0	0	980	0	245
Future Volume (vph)	0	1125	100	0	775	360	0	0	0	980	0	245
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00				1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.99				1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00				1.00	1.00	
Frt		0.99			1.00	0.85				1.00	0.85	
Flt Protected		1.00			1.00	1.00				0.95	1.00	
Satd. Flow (prot)		3214			1716	1441				1630	1458	
Flt Permitted		1.00			1.00	1.00				0.95	1.00	
Satd. Flow (perm)		3214			1716	1441				1630	1458	
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	1236	110	0	852	396	0	0	0	1077	0	269
RTOR Reduction (vph)	0	56	0	0	0	24	0	0	0	0	46	0
Lane Group Flow (vph)	0	1290	0	0	852	372	0	0	0	1077	223	0
Confl. Peds. (#/hr)	2		1	1		2						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%	0%	0%	0%	2%	0%	2%
Turn Type		NA			NA	custom				Perm	NA	
Protected Phases		2			6	4					4	
Permitted Phases						6				4		
Actuated Green, G (s)		28.0			28.0	56.0				28.0	28.0	
Effective Green, g (s)		29.0			29.0	58.0				29.0	29.0	
Actuated g/C Ratio		0.44			0.44	0.88				0.44	0.44	
Clearance Time (s)		5.0			5.0	5.0				5.0	5.0	
Vehicle Extension (s)		5.2			5.2	3.0				3.0	3.0	
Lane Grp Cap (vph)		1412			754	1441				716	640	
v/s Ratio Prot		0.40			c0.50	0.11					0.15	
v/s Ratio Perm						0.14				c0.66		
v/c Ratio		0.91			1.13	0.26				1.50	0.35	
Uniform Delay, d1		17.3			18.5	0.6				18.5	12.2	
Progression Factor		1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2		9.9			74.7	0.1				234.2	0.3	
Delay (s)		27.2			93.2	0.7				252.7	12.6	
Level of Service		C			F	A				F	B	
Approach Delay (s)		27.2			63.9			0.0			204.7	
Approach LOS		C			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	99.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	109.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

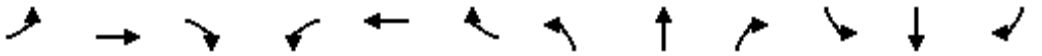
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	1255	775	5	1030	490	0	0	40	5	0	15
Future Vol, veh/h	105	1255	775	5	1030	490	0	0	40	5	0	15
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	0	1	4	0	0	5	0	0	6
Mvmt Flow	111	1321	816	5	1084	516	0	0	42	5	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1601	0	0	2137	0	0	-	-	1069	2236	3712	801
Stage 1	-	-	-	-	-	-	-	-	-	1353	1353	-
Stage 2	-	-	-	-	-	-	-	-	-	883	2359	-
Critical Hdwy	4.14	-	-	4.1	-	-	-	-	7	7.5	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	-	-	3.35	3.5	4	3.36
Pot Cap-1 Maneuver	405	-	-	257	-	-	0	0	212	24	5	319
Stage 1	-	-	-	-	-	-	0	0	-	161	220	-
Stage 2	-	-	-	-	-	-	0	0	-	311	69	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	405	-	-	257	-	-	-	-	212	14	3	319
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	14	3	-
Stage 1	-	-	-	-	-	-	-	-	-	161	140	-
Stage 2	-	-	-	-	-	-	-	-	-	249	69	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	2.4	26.1	125.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	212	405	-	-	257	-	-	49
HCM Lane V/C Ratio	0.199	0.273	-	-	0.02	-	-	0.43
HCM Control Delay (s)	26.1	17.2	0	-	19.3	3.5	-	125.3
HCM Lane LOS	D	C	A	-	C	A	-	F
HCM 95th %tile Q(veh)	0.7	1.1	-	-	0.1	-	-	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	895	175	170	485	80	555	760	250	110	945	310
Future Volume (vph)	190	895	175	170	485	80	555	760	250	110	945	310
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		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	
Frt		0.98			0.98		1.00	0.96		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3123			3162		1646	3101		1630	3128	
Flt Permitted		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3123			3162		1646	3101		1630	3128	
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)	198	932	182	177	505	83	578	792	260	115	984	323
RTOR Reduction (vph)	0	9	0	0	6	0	0	21	0	0	21	0
Lane Group Flow (vph)	0	1303	0	0	759	0	578	1031	0	115	1286	0
Confl. Peds. (#/hr)	2		1	1		2	1		9	9		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	5%	2%	2%	3%	1%	3%	1%	2%	2%	2%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		42.5			29.5		20.5	51.3		8.7	39.5	
Effective Green, g (s)		43.0			30.0		21.0	51.8		9.2	40.0	
Actuated g/C Ratio		0.29			0.20		0.14	0.35		0.06	0.27	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)		895			632		230	1070		99	834	
v/s Ratio Prot		c0.42			c0.24		c0.35	0.33		0.07	c0.41	
v/s Ratio Perm												
v/c Ratio		1.46			1.20		2.51	0.96		1.16	1.54	
Uniform Delay, d1		53.5			60.0		64.5	48.2		70.4	55.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		211.6			104.8		693.6	20.0		140.4	249.7	
Delay (s)		265.1			164.8		758.1	68.2		210.8	304.7	
Level of Service		F			F		F	E		F	F	
Approach Delay (s)		265.1			164.8			312.9			297.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	274.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	147.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

US 97 Bend Parkway Future No Build

Vistro File:
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Scenario: Base Scenario

Report File:
X:\...\Roundabouts_RIRO_6004_Truman_ReedLn_Nels_Closure.pdf

3/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Reed Market and Brookswood	Roundabout	HCM 6th Edition	SEB Thru		439.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Reed Market and Brookswood

Control Type:	Roundabout	Delay (sec / veh):	439.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	255	300	150	450	550	70	155	390	295	90	585	330
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	1.00	5.00	1.00	1.00	0.00	2.00	1.00	3.00	0.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	300	150	450	550	70	155	390	295	90	585	330
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	77	39	116	142	18	40	101	76	23	151	85
Total Analysis Volume [veh/h]	263	309	155	464	567	72	160	402	304	93	603	340
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1171			832			668			1205		
Exiting Flow Rate [veh/h]	1079			718			1240			741		
Demand Flow Rate [veh/h]	255	300	150	450	550	70	155	390	295	90	585	330
Adjusted Demand Flow Rate [veh/h]	263	309	155	464	567	72	160	402	304	93	603	340

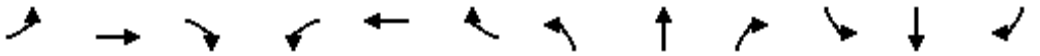
Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.99	0.99	0.98	0.99
Entry Flow Rate [veh/h]	738	1114	883	1046
Capacity of Entry and Bypass Lanes [veh/h]	419	591	699	404
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	413	586	686	401
X, volume / capacity	1.76	1.89	1.26	2.59

Movement, Approach, & Intersection Results

Lane LOS	F	F	F	F
95th-Percentile Queue Length [veh]	45.37	70.60	32.57	84.08
95th-Percentile Queue Length [ft]	1134.24	1765.09	814.17	2102.11
Approach Delay [s/veh]	376.67	422.26	150.29	743.02
Approach LOS	F	F	F	F
Intersection Delay [s/veh]	439.31			
Intersection LOS	F			

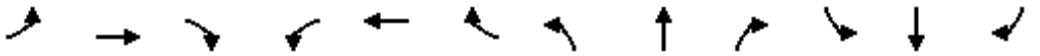
All Closure HCM Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	70	95	290	100	45	375	2280	60	90	2385	50
Future Volume (vph)	235	70	95	290	100	45	375	2280	60	90	2385	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	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	0.95		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1548	1597	1488	1646	1516		3225	3210		1511	3131	
Flt Permitted	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1548	1597	1488	1646	1516		3225	3210		1511	3131	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	76	103	315	109	49	408	2478	65	98	2592	54
RTOR Reduction (vph)	0	0	87	0	11	0	0	1	0	0	1	0
Lane Group Flow (vph)	150	181	16	315	147	0	408	2542	0	98	2645	0
Confl. Peds. (#/hr)	1					1			4	4		
Heavy Vehicles (%)	2%	0%	0%	1%	9%	11%	0%	3%	7%	10%	6%	0%
Turn Type	Split	NA	Prot	Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4	4	8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	21.8	21.8	21.8	28.0	28.0		9.0	61.2		16.0	68.2	
Effective Green, g (s)	22.8	22.8	22.8	29.0	29.0		10.0	63.2		17.0	70.2	
Actuated g/C Ratio	0.15	0.15	0.15	0.20	0.20		0.07	0.43		0.11	0.47	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	238	246	229	322	297		217	1370		173	1485	
v/s Ratio Prot	0.10	c0.11	0.01	c0.19	0.10		c0.13	c0.79		0.06	c0.84	
v/s Ratio Perm												
v/c Ratio	0.63	0.74	0.07	0.98	0.49		1.88	1.86		0.57	1.78	
Uniform Delay, d1	58.7	59.7	53.5	59.2	53.0		69.0	42.4		62.0	38.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	10.9	0.1	43.8	1.3		413.1	387.7		4.2	354.2	
Delay (s)	64.0	70.6	53.7	102.9	54.3		482.1	430.1		66.2	393.1	
Level of Service	E	E	D	F	D		F	F		E	F	
Approach Delay (s)		64.3			86.7			437.3			381.5	
Approach LOS		E			F			F			F	

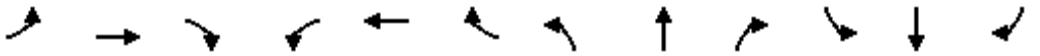
Intersection Summary			
HCM 2000 Control Delay	364.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	124.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	135	30	700	130	280	70	280	905	215	460	5
Future Volume (vph)	10	135	30	700	130	280	70	280	905	215	460	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		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		0.98		1.00	0.90		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1695		1662	1537		1662	1750	1463	1613	1747	
Flt Permitted		1.00		0.95	1.00		0.15	1.00	1.00	0.40	1.00	
Satd. Flow (perm)		1695		1662	1537		260	1750	1463	674	1747	
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)	11	150	33	778	144	311	78	311	1006	239	511	6
RTOR Reduction (vph)	0	7	0	0	65	0	0	0	94	0	1	0
Lane Group Flow (vph)	0	187	0	778	390	0	78	311	912	239	516	0
Confl. Peds. (#/hr)			5	5					1	1		
Confl. Bikes (#/hr)						2			1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	0%	0%
Turn Type	Split	NA		Split	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	8	8		4	4			6	4		2	
Permitted Phases							6		6	2		
Actuated Green, G (s)		16.5		44.1	44.1		37.0	37.0	81.1	37.0	37.0	
Effective Green, g (s)		17.5		45.1	45.1		38.0	38.0	83.1	38.0	38.0	
Actuated g/C Ratio		0.16		0.40	0.40		0.34	0.34	0.74	0.34	0.34	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		2.5		4.0	4.0		5.2	5.2	4.0	5.2	5.2	
Lane Grp Cap (vph)		263		665	615		87	590	1131	227	589	
v/s Ratio Prot		c0.11		c0.47	0.25			0.18	0.32		0.30	
v/s Ratio Perm							0.30		0.30	c0.35		
v/c Ratio		0.71		1.17	0.63		0.90	0.53	0.81	1.05	0.88	
Uniform Delay, d1		45.2		33.8	27.1		35.4	30.1	9.5	37.3	35.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.2		92.0	2.4		66.3	1.7	4.5	74.3	14.9	
Delay (s)		53.4		125.7	29.5		101.7	31.8	14.1	111.6	50.0	
Level of Service		D		F	C		F	C	B	F	D	
Approach Delay (s)		53.4			90.2			22.9			69.5	
Approach LOS		D			F			C			E	

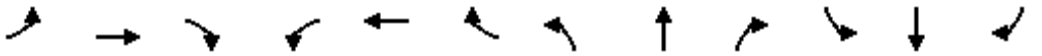
Intersection Summary			
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	112.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	300	100	170	300	85	100	1300	105	120	1195	40
Future Volume (vph)	160	300	100	170	300	85	100	1300	105	120	1195	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	1.00		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	0.96		1.00	0.97		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)	1644	1677		1659	1686		1662	3189		1662	3210	
Flt Permitted	0.44	1.00		0.42	1.00		0.25	1.00		0.25	1.00	
Satd. Flow (perm)	762	1677		740	1686		437	3189		437	3210	
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)	163	306	102	173	306	87	102	1327	107	122	1219	41
RTOR Reduction (vph)	0	10	0	0	7	0	0	15	0	0	6	0
Lane Group Flow (vph)	163	398	0	173	386	0	102	1419	0	122	1254	0
Confl. Peds. (#/hr)	3		5	5		3	4		1	1		4
Confl. Bikes (#/hr)			2			4						2
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	3%	2%	0%	3%	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)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	304	670		296	674		174	1275		174	1284	
v/s Ratio Prot		c0.24			0.23			c0.44			0.39	
v/s Ratio Perm	0.21			0.23			0.23			0.28		
v/c Ratio	0.54	0.59		0.58	0.57		0.59	1.11		0.70	0.98	
Uniform Delay, d1	9.2	9.4		9.4	9.3		9.4	12.0		10.0	11.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	3.8		8.2	3.5		13.7	62.2		21.0	20.1	
Delay (s)	15.8	13.3		17.6	12.9		23.1	74.2		31.0	31.9	
Level of Service	B	B		B	B		C	E		C	C	
Approach Delay (s)		14.0			14.3			70.8			31.8	
Approach LOS		B			B			E			C	

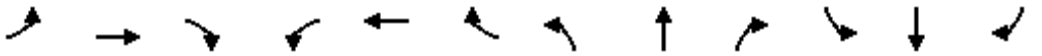
Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



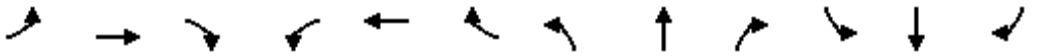
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	400	45	10	555	1200	150	0	660
Future Volume (vph)	0	0	0	0	400	45	10	555	1200	150	0	660
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)					4.0			4.0	4.0	4.0		4.0
Lane Util. Factor					1.00			1.00	1.00	1.00		1.00
Frpb, ped/bikes					1.00			1.00	0.99	1.00		0.99
Flpb, ped/bikes					1.00			1.00	1.00	1.00		1.00
Frt					0.99			1.00	0.85	1.00		0.85
Flt Protected					1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)					1706			1731	1457	1630		1468
Flt Permitted					1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)					1706			1731	1457	1630		1468
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)	0	0	0	0	444	50	11	617	1333	167	0	733
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	314	0	0	218
Lane Group Flow (vph)	0	0	0	0	487	0	0	628	1019	167	0	515
Confl. Peds. (#/hr)	2					2	1		1	1		1
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	1%	1%	2%	0%	0%
Turn Type					NA		Split	NA	custom	Prot		Perm
Protected Phases		2			6		8	8	1	4		
Permitted Phases									2 8			4
Actuated Green, G (s)					32.0			28.0	60.0	27.0		27.0
Effective Green, g (s)					33.0			29.0	62.0	28.0		28.0
Actuated g/C Ratio					0.32			0.28	0.61	0.27		0.27
Clearance Time (s)					5.0			5.0	5.0	5.0		5.0
Vehicle Extension (s)					3.0			3.0	3.0	3.0		3.0
Lane Grp Cap (vph)					551			492	942	447		402
v/s Ratio Prot					0.29			c0.36	c0.35	0.10		
v/s Ratio Perm									0.35			c0.35
v/c Ratio					0.88			1.28	1.08	0.37		1.28
Uniform Delay, d1					32.7			36.5	20.0	29.9		37.0
Progression Factor					1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2					18.4			139.5	54.1	0.5		144.7
Delay (s)					51.1			176.0	74.1	30.4		181.7
Level of Service					D			F	E	C		F
Approach Delay (s)		0.0			51.1			106.7			153.7	
Approach LOS		A			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	111.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



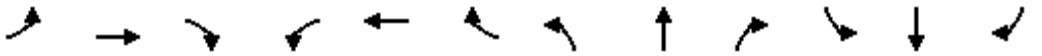
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	705	40	250	555	0	0	0	0	180	615	295
Future Volume (vph)	0	705	40	250	555	0	0	0	0	180	615	295
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frpb, ped/bikes		0.99		1.00	1.00						1.00	0.85
Flpb, ped/bikes		1.00		1.00	1.00						0.99	1.00
Frt		0.99		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)		1709		1614	1733						3223	1267
Flt Permitted		1.00		0.11	1.00						0.99	1.00
Satd. Flow (perm)		1709		189	1733						3223	1267
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)	0	783	44	278	617	0	0	0	0	200	683	328
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	166
Lane Group Flow (vph)	0	825	0	278	617	0	0	0	0	0	883	162
Confl. Peds. (#/hr)	30		138	138		30	71		53	53		71
Confl. Bikes (#/hr)			3			14						12
Heavy Vehicles (%)	0%	1%	0%	3%	1%	0%	0%	0%	0%	0%	1%	0%
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		8		7	4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		31.0		46.0	46.0						24.0	24.0
Effective Green, g (s)		32.0		47.0	47.0						25.0	25.0
Actuated g/C Ratio		0.40		0.59	0.59						0.31	0.31
Clearance Time (s)		5.0		5.0	5.0						5.0	5.0
Vehicle Extension (s)		0.2		0.2	0.2						0.2	0.2
Lane Grp Cap (vph)		683		306	1018						1007	395
v/s Ratio Prot		c0.48		c0.12	0.36							
v/s Ratio Perm				0.41							0.27	0.13
v/c Ratio		1.21		0.91	0.61						0.88	0.41
Uniform Delay, d1		24.0		30.6	10.6						26.0	21.7
Progression Factor		1.00		0.51	0.15						1.00	1.00
Incremental Delay, d2		106.7		3.9	0.1						10.7	3.1
Delay (s)		130.7		19.6	1.6						36.7	24.8
Level of Service		F		B	A						D	C
Approach Delay (s)		130.7			7.2			0.0			33.5	
Approach LOS		F			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	52.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



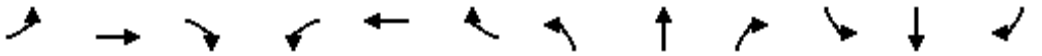
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	415	595	0	0	725	160	110	655	215	0	0	0
Future Volume (vph)	415	595	0	0	725	160	110	655	215	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	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			
Frpb, ped/bikes	1.00	1.00			1.00	0.96		1.00	0.92			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1662	1716			1733	1434		3245	1362			
Flt Permitted	0.12	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	212	1716			1733	1434		3245	1362			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	451	647	0	0	788	174	120	712	234	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	167	0	0	0
Lane Group Flow (vph)	451	647	0	0	788	113	0	832	67	0	0	0
Confl. Peds. (#/hr)	23		47	47		23	103		27	27		103
Confl. Bikes (#/hr)			3			7			4			
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	3	8			4			6				
Permitted Phases	8					4	6		6			
Actuated Green, G (s)	49.0	49.0			28.0	28.0		21.0	21.0			
Effective Green, g (s)	50.0	50.0			29.0	29.0		22.0	22.0			
Actuated g/C Ratio	0.62	0.62			0.36	0.36		0.28	0.28			
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			
Lane Grp Cap (vph)	440	1072			628	519		892	374			
v/s Ratio Prot	c0.22	0.38			c0.45							
v/s Ratio Perm	0.42					0.08		0.26	0.05			
v/c Ratio	1.02	0.60			1.25	0.22		0.93	0.18			
Uniform Delay, d1	28.2	9.0			25.5	17.7		28.3	22.1			
Progression Factor	0.50	0.20			1.00	1.00		1.00	1.00			
Incremental Delay, d2	19.8	0.1			127.4	0.1		17.7	1.0			
Delay (s)	33.9	1.9			152.9	17.7		45.9	23.1			
Level of Service	C	A			F	B		D	C			
Approach Delay (s)		15.0			128.4			40.9			0.0	
Approach LOS		B			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



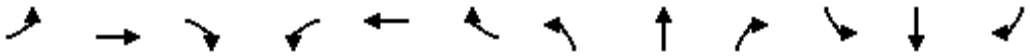
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1125	100	0	775	370	0	0	0	910	0	235
Future Volume (vph)	0	1125	100	0	775	370	0	0	0	910	0	235
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00				1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.99				1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00				1.00	1.00	
Frt		0.99			1.00	0.85				1.00	0.85	
Flt Protected		1.00			1.00	1.00				0.95	1.00	
Satd. Flow (prot)		3214			1716	1440				1630	1458	
Flt Permitted		1.00			1.00	1.00				0.95	1.00	
Satd. Flow (perm)		3214			1716	1440				1630	1458	
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	1236	110	0	852	407	0	0	0	1000	0	258
RTOR Reduction (vph)	0	55	0	0	0	24	0	0	0	0	51	0
Lane Group Flow (vph)	0	1291	0	0	852	383	0	0	0	1000	207	0
Confl. Peds. (#/hr)	2		1	1		2						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%	0%	0%	0%	2%	0%	2%
Turn Type		NA			NA	custom				Perm	NA	
Protected Phases		2			6	4					4	
Permitted Phases						6				4		
Actuated Green, G (s)		29.0			29.0	56.0				27.0	27.0	
Effective Green, g (s)		30.0			30.0	58.0				28.0	28.0	
Actuated g/C Ratio		0.45			0.45	0.88				0.42	0.42	
Clearance Time (s)		5.0			5.0	5.0				5.0	5.0	
Vehicle Extension (s)		5.2			5.2	3.0				3.0	3.0	
Lane Grp Cap (vph)		1460			780	1440				691	618	
v/s Ratio Prot		0.40			c0.50	0.11					0.14	
v/s Ratio Perm						0.15				c0.61		
v/c Ratio		0.88			1.09	0.27				1.45	0.33	
Uniform Delay, d1		16.4			18.0	0.6				19.0	12.7	
Progression Factor		1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2		7.3			60.3	0.1				209.3	0.3	
Delay (s)		23.7			78.3	0.7				228.3	13.1	
Level of Service		C			E	A				F	B	
Approach Delay (s)		23.7			53.3			0.0			184.2	
Approach LOS		C			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	85.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



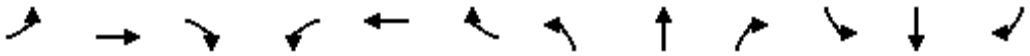
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	630	195	265	610	100	215	905	195	150	1145	180
Future Volume (vph)	355	630	195	265	610	100	215	905	195	150	1145	180
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	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	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)	1630	1733	1408	1614	3176		1646	3148		1630	3219	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	1733	1408	1614	3176		1646	3148		1630	3219	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	378	670	207	282	649	106	229	963	207	160	1218	191
RTOR Reduction (vph)	0	0	102	0	11	0	0	15	0	0	10	0
Lane Group Flow (vph)	378	670	105	282	744	0	229	1155	0	160	1399	0
Confl. Peds. (#/hr)	7		13	13		7	8		14	14		8
Confl. Bikes (#/hr)			5			1			1			
Heavy Vehicles (%)	2%	1%	2%	3%	2%	3%	1%	2%	1%	2%	1%	0%
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)	17.5	35.5	35.5	13.5	31.5		11.5	44.5		8.5	41.5	
Effective Green, g (s)	18.0	36.0	36.0	14.0	32.0		12.0	45.0		9.0	42.0	
Actuated g/C Ratio	0.15	0.30	0.30	0.12	0.27		0.10	0.38		0.08	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	244	519	422	188	846		164	1180		122	1126	
v/s Ratio Prot	c0.23	c0.39		0.17	0.23		c0.14	c0.37		0.10	c0.43	
v/s Ratio Perm			0.07									
v/c Ratio	1.55	1.29	0.25	1.50	0.88		1.40	0.98		1.31	1.24	
Uniform Delay, d1	51.0	42.0	31.8	53.0	42.2		54.0	37.0		55.5	39.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	266.4	144.8	0.2	250.8	10.3		211.0	21.6		186.8	116.6	
Delay (s)	317.4	186.8	32.0	303.8	52.4		265.0	58.6		242.3	155.6	
Level of Service	F	F	C	F	D		F	E		F	F	
Approach Delay (s)		200.6			120.8			92.4			164.4	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	145.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



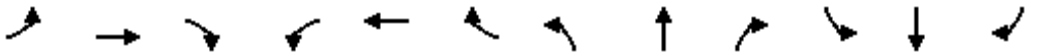
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	175	1050	0	0	0	0	0	685	250
Future Volume (vph)	0	0	0	175	1050	0	0	0	0	0	685	250
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.95	
Frpb, ped/bikes					1.00						1.00	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.96	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3273						3170	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3273						3170	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	186	1117	0	0	0	0	0	729	266
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	35	0
Lane Group Flow (vph)	0	0	0	0	1280	0	0	0	0	0	960	0
Confl. Peds. (#/hr)	3		2	2		3	2		11	11		2
Confl. Bikes (#/hr)						1						3
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					28.2						18.8	
Effective Green, g (s)					28.7						19.3	
Actuated g/C Ratio					0.51						0.34	
Clearance Time (s)					4.5						4.5	
Vehicle Extension (s)					2.6						2.0	
Lane Grp Cap (vph)					1677						1092	
v/s Ratio Prot											c0.30	
v/s Ratio Perm					0.39							
v/c Ratio					0.76						0.88	
Uniform Delay, d1					10.9						17.3	
Progression Factor					1.00						1.00	
Incremental Delay, d2					3.4						8.0	
Delay (s)					14.3						25.2	
Level of Service					B						C	
Approach Delay (s)		0.0			14.3			0.0			25.2	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
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)	370	1515	0	0	0	0	0	515	280	0	0	0
Future Volume (vph)	370	1515	0	0	0	0	0	515	280	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.95				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.95				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3231						3100				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3231						3100				
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)	420	1722	0	0	0	0	0	585	318	0	0	0
RTOR Reduction (vph)	0	37	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	2105	0	0	0	0	0	896	0	0	0	0
Confl. Peds. (#/hr)	5		7	7		5	10		4	4		10
Confl. Bikes (#/hr)			3						1			
Heavy Vehicles (%)	1%	2%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)		29.1						17.9				
Effective Green, g (s)		29.6						18.4				
Actuated g/C Ratio		0.53						0.33				
Clearance Time (s)		4.5						4.5				
Vehicle Extension (s)		2.6						2.0				
Lane Grp Cap (vph)		1707						1018				
v/s Ratio Prot								c0.29				
v/s Ratio Perm		0.65										
v/c Ratio		1.23						0.88				
Uniform Delay, d1		13.2						17.8				
Progression Factor		1.00						1.00				
Incremental Delay, d2		110.2						8.6				
Delay (s)		123.4						26.3				
Level of Service		F						C				
Approach Delay (s)		123.4			0.0			26.3			0.0	
Approach LOS		F			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	94.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.4%	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)	285	380	95	155	375	65	210	830	70	180	1195	190
Future Volume (vph)	285	380	95	155	375	65	210	830	70	180	1195	190
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		4.3	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	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		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)	1646	1646		1614	1678		1646	3240		1630	3202	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1646	1646		1614	1678		1646	3240		1630	3202	
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)	324	432	108	176	426	74	239	943	80	205	1358	216
RTOR Reduction (vph)	0	7	0	0	5	0	0	5	0	0	10	0
Lane Group Flow (vph)	324	533	0	176	495	0	239	1018	0	205	1564	0
Confl. Peds. (#/hr)	3		1	1		3	10		1	1		10
Confl. Bikes (#/hr)			3									1
Heavy Vehicles (%)	1%	3%	2%	3%	2%	0%	1%	1%	4%	2%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	30.0	30.0		28.0	28.0		11.5	41.5		10.5	40.5	
Effective Green, g (s)	31.0	31.0		29.0	29.0		11.7	42.5		11.0	41.5	
Actuated g/C Ratio	0.24	0.24		0.22	0.22		0.09	0.33		0.08	0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	394	394		361	375		148	1063		138	1026	
v/s Ratio Prot	0.20	c0.32		0.11	c0.30		c0.15	0.31		0.13	c0.49	
v/s Ratio Perm												
v/c Ratio	0.82	1.35		0.49	1.32		1.61	0.96		1.49	1.52	
Uniform Delay, d1	46.6	49.2		43.8	50.2		58.9	42.6		59.2	44.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.7	174.8		0.8	162.0		305.6	18.1		252.9	241.2	
Delay (s)	59.3	224.1		44.5	212.3		364.5	60.8		312.2	285.2	
Level of Service	E	F		D	F		F	E		F	F	
Approach Delay (s)		162.3			168.6			118.3			288.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	200.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	16.3
Intersection Capacity Utilization	111.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	215	15	20	550	35	20
Future Vol, veh/h	215	15	20	550	35	20
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	8	0	0	7	0
Mvmt Flow	250	17	23	640	41	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	268	0	946	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	686	-
Critical Hdwy	-	-	4.1	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.2	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1307	-	284	784
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1306	-	276	783
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	491	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	361	-	-	1306	-
HCM Lane V/C Ratio	0.177	-	-	0.018	-
HCM Control Delay (s)	17.1	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

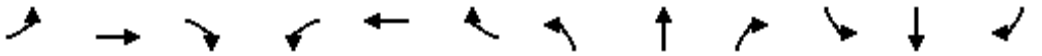
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	1170	795	5	1025	490	0	0	35	5	0	15
Future Vol, veh/h	105	1170	795	5	1025	490	0	0	35	5	0	15
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	0	1	4	0	0	5	0	0	6
Mvmt Flow	111	1232	837	5	1079	516	0	0	37	5	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1596	0	0	2069	0	0	-	-	1035	2186	3639	799
Stage 1	-	-	-	-	-	-	-	-	-	1348	1348	-
Stage 2	-	-	-	-	-	-	-	-	-	838	2291	-
Critical Hdwy	4.14	-	-	4.1	-	-	-	-	7	7.5	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	-	-	3.35	3.5	4	3.36
Pot Cap-1 Maneuver	407	-	-	273	-	-	0	0	224	26	5	320
Stage 1	-	-	-	-	-	-	0	0	-	162	221	-
Stage 2	-	-	-	-	-	-	0	0	-	331	75	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	407	-	-	273	-	-	-	-	224	16	3	320
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	16	3	-
Stage 1	-	-	-	-	-	-	-	-	-	162	149	-
Stage 2	-	-	-	-	-	-	-	-	-	277	75	-

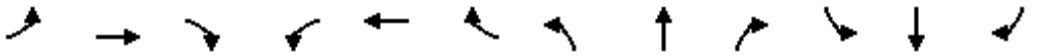
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.1	24.2	103.8
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	224	407	-	-	273	-	-	56
HCM Lane V/C Ratio	0.164	0.272	-	-	0.019	-	-	0.376
HCM Control Delay (s)	24.2	17.1	0	-	18.4	3	-	103.8
HCM Lane LOS	C	C	A	-	C	A	-	F
HCM 95th %tile Q(veh)	0.6	1.1	-	-	0.1	-	-	1.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	850	155	165	485	85	535	780	265	135	980	330
Future Volume (vph)	180	850	155	165	485	85	535	780	265	135	980	330
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		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	
Frt		0.98			0.98		1.00	0.96		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3128			3158		1646	3098		1630	3126	
Flt Permitted		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3128			3158		1646	3098		1630	3126	
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)	188	885	161	172	505	89	557	812	276	141	1021	344
RTOR Reduction (vph)	0	8	0	0	7	0	0	22	0	0	22	0
Lane Group Flow (vph)	0	1226	0	0	759	0	557	1067	0	141	1343	0
Confl. Peds. (#/hr)	2		1	1		2	1		9	9		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	5%	2%	2%	3%	1%	3%	1%	2%	2%	2%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		41.5			29.5		19.5	53.5		7.5	41.5	
Effective Green, g (s)		42.0			30.0		20.0	54.0		8.0	42.0	
Actuated g/C Ratio		0.28			0.20		0.13	0.36		0.05	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)		875			631		219	1115		86	875	
v/s Ratio Prot		c0.39			c0.24		c0.34	0.34		0.09	c0.43	
v/s Ratio Perm												
v/c Ratio		1.40			1.20		2.54	0.96		1.64	1.53	
Uniform Delay, d1		54.0			60.0		65.0	46.9		71.0	54.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		187.5			105.7		707.8	18.3		334.0	246.3	
Delay (s)		241.5			165.7		772.8	65.2		405.0	300.3	
Level of Service		F			F		F	E		F	F	
Approach Delay (s)		241.5			165.7			304.7			310.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	270.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	145.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	225	95	70	210	170	75	850	85	40	520	490
Future Volume (vph)	385	225	95	70	210	170	75	850	85	40	520	490
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	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	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1646	1647		1662	1750	1432	1662	1718		1599	1733	1418
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.21	1.00		0.09	1.00	1.00
Satd. Flow (perm)	1646	1647		1662	1750	1432	374	1718		149	1733	1418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	245	103	76	228	185	82	924	92	43	565	533
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	272
Lane Group Flow (vph)	418	334	0	76	228	185	82	1013	0	43	565	261
Confl. Peds. (#/hr)	3					3	5		4	4		5
Confl. Bikes (#/hr)			7			16			7			6
Heavy Vehicles (%)	1%	1%	0%	0%	0%	1%	0%	0%	2%	4%	1%	1%
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						Free	8			4		4
Actuated Green, G (s)	18.1	31.4		5.5	18.8	105.1	49.3	45.4		47.1	44.3	44.3
Effective Green, g (s)	19.1	32.4		6.5	19.8	105.1	51.3	46.4		49.1	45.3	45.3
Actuated g/C Ratio	0.18	0.31		0.06	0.19	1.00	0.49	0.44		0.47	0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	299	507		102	329	1432	242	758		122	746	611
v/s Ratio Prot	c0.25	c0.20		0.05	0.13		c0.02	c0.59		0.01	0.33	
v/s Ratio Perm						c0.13	0.15			0.15		0.18
v/c Ratio	1.40	0.66		0.75	0.69	0.13	0.34	1.34		0.35	0.76	0.43
Uniform Delay, d1	43.0	31.6		48.5	39.8	0.0	17.7	29.3		23.7	25.3	20.9
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	198.2	3.1		25.2	6.2	0.2	0.8	160.1		1.8	4.4	0.5
Delay (s)	241.2	34.7		73.7	46.0	0.2	18.5	189.4		25.4	29.7	21.3
Level of Service	F	C		E	D	A	B	F		C	C	C
Approach Delay (s)		147.4			33.0			176.7			25.6	
Approach LOS		F			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	100.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	105.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

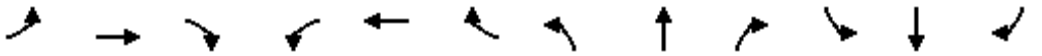
Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	95	700	35	25	775
Future Vol, veh/h	20	95	700	35	25	775
Conflicting Peds, #/hr	1	0	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	22	107	787	39	28	871

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1763	835	0	0	854	0
Stage 1	835	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	94	371	-	-	794	-
Stage 1	429	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	88	362	-	-	775	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	404	-	-	-	-	-
Stage 2	388	-	-	-	-	-

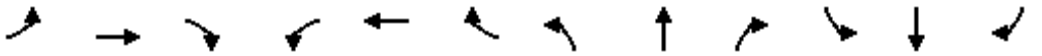
Approach	WB	NB	SB
HCM Control Delay, s	37.6	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	775	-
HCM Lane V/C Ratio	-	-	0.55	0.036	-
HCM Control Delay (s)	-	-	37.6	9.8	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	3	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	465	165	420	705	20	0	0	0	150	515	200
Future Volume (vph)	100	465	165	420	705	20	0	0	0	150	515	200
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	3.5	3.5		3.5	3.5						3.5	3.5
Lane Util. Factor	1.00	0.95		1.00	1.00						0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00						1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.96		1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1646	3096		1646	1724						3248	1298
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1646	3096		1646	1724						3248	1298
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)	105	489	174	442	742	21	0	0	0	158	542	211
RTOR Reduction (vph)	0	43	0	0	1	0	0	0	0	0	0	155
Lane Group Flow (vph)	105	620	0	442	762	0	0	0	0	0	700	56
Confl. Peds. (#/hr)	12		47	47		12	38		18	18		38
Confl. Bikes (#/hr)			1			11			1			24
Heavy Vehicles (%)	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	1%
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	7.0	24.0		23.3	40.3						20.7	20.7
Effective Green, g (s)	7.5	24.5		23.8	40.8						21.2	21.2
Actuated g/C Ratio	0.09	0.31		0.30	0.51						0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	154	948		489	879						860	343
v/s Ratio Prot	0.06	0.20		c0.27	c0.44							
v/s Ratio Perm											0.22	0.04
v/c Ratio	0.68	0.65		0.90	0.87						0.81	0.16
Uniform Delay, d1	35.1	24.1		27.0	17.2						27.6	22.6
Progression Factor	1.00	1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2	11.8	3.5		19.9	11.2						6.0	0.2
Delay (s)	46.9	27.6		46.9	28.4						33.5	22.8
Level of Service	D	C		D	C						C	C
Approach Delay (s)		30.2			35.2			0.0			31.0	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	900	280	360	705	270	250	960	255	345	1030	125
Future Volume (vph)	295	900	280	360	705	270	250	960	255	345	1030	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	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	0.96		1.00	0.96		1.00	0.97		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)	1599	3163		1646	3114		1646	3169		1583	3230	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1599	3163		1646	3114		1646	3169		1583	3230	
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)	307	938	292	375	734	281	260	1000	266	359	1073	130
RTOR Reduction (vph)	0	19	0	0	25	0	0	15	0	0	6	0
Lane Group Flow (vph)	307	1211	0	375	990	0	260	1251	0	359	1197	0
Confl. Peds. (#/hr)	2		1	1		2	6		7	7		6
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	4%	1%	1%	1%	1%	4%	1%	1%	1%	5%	1%	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)	22.0	44.0		23.0	45.0		17.0	48.0		25.0	56.0	
Effective Green, g (s)	23.0	45.0		24.0	46.0		18.0	49.0		26.0	57.0	
Actuated g/C Ratio	0.14	0.28		0.15	0.29		0.11	0.31		0.16	0.36	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.3		2.5	4.3		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)	229	889		246	895		185	970		257	1150	
v/s Ratio Prot	0.19	c0.38		c0.23	0.32		0.16	c0.39		c0.23	0.37	
v/s Ratio Perm												
v/c Ratio	1.34	1.36		1.52	1.11		1.41	1.29		1.40	1.04	
Uniform Delay, d1	68.5	57.5		68.0	57.0		71.0	55.5		67.0	51.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	179.7	170.4		255.6	63.6		211.5	138.0		200.6	37.8	
Delay (s)	248.2	227.9		323.6	120.6		282.5	193.5		267.6	89.3	
Level of Service	F	F		F	F		F	F		F	F	
Approach Delay (s)		232.0			175.3			208.7			130.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	186.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	130.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

US 97 Bend Parkway Future No Build

Vistro File: X:\...\Future_NoBuild_RIRO_6006_All_Closure.vistro
Scenario: Base Scenario
Report File: X:\...\Roundabouts_RIRO_6006_All_Closure.pdf
3/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Reed Market and Brookswood	Roundabout	HCM 6th Edition	SEB Thru		438.9	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Reed Market and Brookswood

Control Type:	Roundabout	Delay (sec / veh):	438.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	255	295	150	440	550	70	155	395	290	90	590	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	1.00	5.00	1.00	1.00	0.00	2.00	1.00	3.00	0.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	295	150	440	550	70	155	395	290	90	590	340
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	76	39	113	142	18	40	102	75	23	152	88
Total Analysis Volume [veh/h]	263	304	155	454	567	72	160	407	299	93	608	351
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1166			837			663			1194		
Exiting Flow Rate [veh/h]	1090			708			1235			746		
Demand Flow Rate [veh/h]	255	295	150	440	550	70	155	395	290	90	590	340
Adjusted Demand Flow Rate [veh/h]	263	304	155	454	567	72	160	407	299	93	608	351

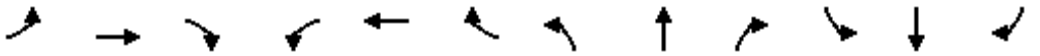
Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.99	0.99	0.98	0.99
Entry Flow Rate [veh/h]	733	1104	883	1062
Capacity of Entry and Bypass Lanes [veh/h]	421	588	702	409
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	415	583	689	405
X, volume / capacity	1.74	1.88	1.26	2.60

Movement, Approach, & Intersection Results

Lane LOS	F	F	F	F
95th-Percentile Queue Length [veh]	44.55	69.75	32.22	85.56
95th-Percentile Queue Length [ft]	1113.72	1743.68	805.53	2138.94
Approach Delay [s/veh]	367.31	419.05	147.48	748.63
Approach LOS	F	F	F	F
Intersection Delay [s/veh]	438.92			
Intersection LOS	F			

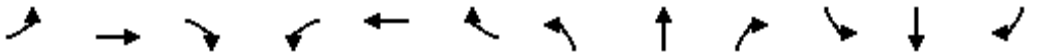
2040 Future No-Build HCM Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	45	100	285	100	45	375	2255	35	50	2410	50
Future Volume (vph)	250	45	100	285	100	45	375	2255	35	50	2410	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	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	0.95		1.00	1.00		1.00	1.00	
Flt Protected	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1548	1585	1488	1646	1516		3225	3217		1511	3131	
Flt Permitted	0.95	0.97	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1548	1585	1488	1646	1516		3225	3217		1511	3131	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	49	109	310	109	49	408	2451	38	54	2620	54
RTOR Reduction (vph)	0	0	93	0	11	0	0	1	0	0	1	0
Lane Group Flow (vph)	160	161	16	310	147	0	408	2488	0	54	2673	0
Confl. Peds. (#/hr)	1					1			4	4		
Heavy Vehicles (%)	2%	0%	0%	1%	9%	11%	0%	3%	7%	10%	6%	0%
Turn Type	Split	NA	Prot	Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4	4	8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	20.7	20.7	20.7	28.0	28.0		10.0	65.5		12.8	68.3	
Effective Green, g (s)	21.7	21.7	21.7	29.0	29.0		11.0	67.5		13.8	70.3	
Actuated g/C Ratio	0.15	0.15	0.15	0.20	0.20		0.07	0.46		0.09	0.47	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	226	232	218	322	297		239	1467		140	1487	
v/s Ratio Prot	c0.10	0.10	0.01	c0.19	0.10		c0.13	0.77		c0.04	c0.85	
v/s Ratio Perm												
v/c Ratio	0.71	0.69	0.07	0.96	0.49		1.71	1.70		0.39	1.80	
Uniform Delay, d1	60.1	60.0	54.5	59.0	53.0		68.5	40.2		63.1	38.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.7	8.7	0.1	40.0	1.3		335.4	316.3		1.8	361.6	
Delay (s)	69.8	68.7	54.6	98.9	54.3		403.9	356.5		64.9	400.5	
Level of Service	E	E	D	F	D		F	F		E	F	
Approach Delay (s)		65.5			83.8			363.2			393.8	
Approach LOS		E			F			F			F	

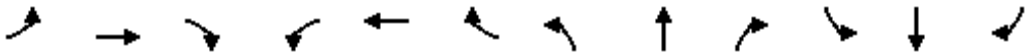
Intersection Summary			
HCM 2000 Control Delay	336.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	125.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	140	30	735	135	230	65	190	900	215	400	5
Future Volume (vph)	10	140	30	735	135	230	65	190	900	215	400	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	1.00	1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.99		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		0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1697		1662	1553		1662	1750	1465	1612	1746	
Flt Permitted		1.00		0.95	1.00		0.16	1.00	1.00	0.50	1.00	
Satd. Flow (perm)		1697		1662	1553		276	1750	1465	850	1746	
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)	11	156	33	817	150	256	72	211	1000	239	444	6
RTOR Reduction (vph)	0	6	0	0	51	0	0	0	91	0	1	0
Lane Group Flow (vph)	0	194	0	817	355	0	72	211	909	239	449	0
Confl. Peds. (#/hr)			5	5					1	1		
Confl. Bikes (#/hr)						2			1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	0%	0%
Turn Type	Split	NA		Split	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	8	8		4	4			6	4		2	
Permitted Phases							6		6	2		
Actuated Green, G (s)		16.8		49.1	49.1		32.0	32.0	81.1	32.0	32.0	
Effective Green, g (s)		17.8		50.1	50.1		33.0	33.0	83.1	33.0	33.0	
Actuated g/C Ratio		0.16		0.44	0.44		0.29	0.29	0.74	0.29	0.29	
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		2.5		4.0	4.0		5.2	5.2	4.0	5.2	5.2	
Lane Grp Cap (vph)		267		737	689		80	511	1130	248	510	
v/s Ratio Prot		c0.11		c0.49	0.23			0.12	0.36		0.26	
v/s Ratio Perm							0.26		0.26	c0.28		
v/c Ratio		0.73		1.11	0.51		0.90	0.41	0.80	0.96	0.88	
Uniform Delay, d1		45.2		31.4	22.6		38.4	32.2	9.6	39.4	38.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.9		67.0	0.9		71.2	1.2	4.5	47.5	17.4	
Delay (s)		54.1		98.4	23.5		109.6	33.4	14.1	86.9	55.5	
Level of Service		D		F	C		F	C	B	F	E	
Approach Delay (s)		54.1			73.6			22.6			66.4	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.8%	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)	135	285	100	175	270	75	95	1235	115	105	1120	35
Future Volume (vph)	135	285	100	175	270	75	95	1235	115	105	1120	35
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	1.00		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	0.96		1.00	0.97		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)	1644	1675		1659	1687		1661	3184		1662	3211	
Flt Permitted	0.49	1.00		0.44	1.00		0.25	1.00		0.25	1.00	
Satd. Flow (perm)	841	1675		769	1687		437	3184		437	3211	
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)	138	291	102	179	276	77	97	1260	117	107	1143	36
RTOR Reduction (vph)	0	13	0	0	9	0	0	17	0	0	5	0
Lane Group Flow (vph)	138	380	0	179	344	0	97	1360	0	107	1174	0
Confl. Peds. (#/hr)	3		5	5		3	4		1	1		4
Confl. Bikes (#/hr)			2			4						2
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	3%	2%	0%	3%	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)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Effective Green, g (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.40	0.40		0.40	0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	336	670		307	674		174	1273		174	1284	
v/s Ratio Prot		0.23			0.20			c0.43			0.37	
v/s Ratio Perm	0.16			c0.23			0.22			0.24		
v/c Ratio	0.41	0.57		0.58	0.51		0.56	1.07		0.61	0.91	
Uniform Delay, d1	8.6	9.3		9.4	9.0		9.3	12.0		9.5	11.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	3.5		7.9	2.7		12.3	45.5		15.2	11.5	
Delay (s)	12.3	12.8		17.3	11.8		21.5	57.5		24.7	22.8	
Level of Service	B	B		B	B		C	E		C	C	
Approach Delay (s)		12.6			13.6			55.2			23.0	
Approach LOS		B			B			E			C	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	85	0	3820	3840	45
Future Vol, veh/h	0	85	0	3820	3840	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	115
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	92	0	4152	4174	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	2087	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	~ 45	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 45	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 682.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	45	-	-
HCM Lane V/C Ratio	-	2.053	-	-
HCM Control Delay (s)	-	$ 682.6	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	9.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	116.8

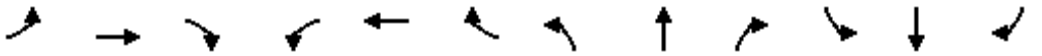
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	340	0	3820	3605	320
Future Vol, veh/h	0	340	0	3820	3605	320
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	3	3	1
Mvmt Flow	0	370	0	4152	3918	348

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1959	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.92	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.31	-	-	-	-
Pot Cap-1 Maneuver	0	~ 54	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 54	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	2777.3	0	0
HCM LOS	F		

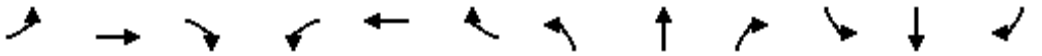
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	54	-	-
HCM Lane V/C Ratio	-	6.844	-	-
HCM Control Delay (s)	-	$ 2777.3	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	42.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



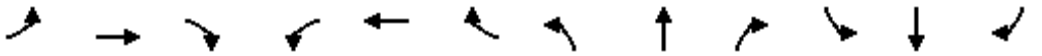
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	435	40	10	405	1190	140	0	590
Future Volume (vph)	0	0	0	0	435	40	10	405	1190	140	0	590
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)					4.0			4.0	4.0	4.0		4.0
Lane Util. Factor					1.00			1.00	1.00	1.00		1.00
Frpb, ped/bikes					1.00			1.00	0.99	1.00		0.99
Flpb, ped/bikes					1.00			1.00	1.00	1.00		1.00
Frt					0.99			1.00	0.85	1.00		0.85
Flt Protected					1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)					1711			1731	1458	1630		1468
Flt Permitted					1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)					1711			1731	1458	1630		1468
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)	0	0	0	0	483	44	11	450	1322	156	0	656
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	314	0	0	218
Lane Group Flow (vph)	0	0	0	0	520	0	0	461	1008	156	0	438
Confl. Peds. (#/hr)	2					2	1		1	1		1
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	1%	1%	2%	0%	0%
Turn Type					NA		Split	NA	custom	Prot		Perm
Protected Phases		2			6		8	8	1	4		
Permitted Phases									2 8			4
Actuated Green, G (s)					33.0			27.0	60.0	27.0		27.0
Effective Green, g (s)					34.0			28.0	62.0	28.0		28.0
Actuated g/C Ratio					0.33			0.27	0.61	0.27		0.27
Clearance Time (s)					5.0			5.0	5.0	5.0		5.0
Vehicle Extension (s)					3.0			3.0	3.0	3.0		3.0
Lane Grp Cap (vph)					570			475	943	447		402
v/s Ratio Prot					0.30			0.27	c0.36	0.10		
v/s Ratio Perm									0.34			c0.30
v/c Ratio					0.91			0.97	1.07	0.35		1.09
Uniform Delay, d1					32.6			36.6	20.0	29.7		37.0
Progression Factor					1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2					21.4			33.6	49.6	0.5		71.4
Delay (s)					54.0			70.2	69.6	30.2		108.4
Level of Service					D			E	E	C		F
Approach Delay (s)		0.0			54.0			69.8			93.4	
Approach LOS		A			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	73.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



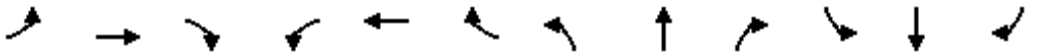
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	690	35	205	505	0	0	0	0	180	560	295
Future Volume (vph)	0	690	35	205	505	0	0	0	0	180	560	295
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.95	1.00
Frpb, ped/bikes		0.99		1.00	1.00						1.00	0.85
Flpb, ped/bikes		1.00		1.00	1.00						0.99	1.00
Frt		0.99		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)		1711		1614	1733						3218	1267
Flt Permitted		1.00		0.11	1.00						0.99	1.00
Satd. Flow (perm)		1711		189	1733						3218	1267
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)	0	767	39	228	561	0	0	0	0	200	622	328
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	189
Lane Group Flow (vph)	0	804	0	228	561	0	0	0	0	0	822	139
Confl. Peds. (#/hr)	30		138	138		30	71		53	53		71
Confl. Bikes (#/hr)			3			14						12
Heavy Vehicles (%)	0%	1%	0%	3%	1%	0%	0%	0%	0%	0%	1%	0%
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		8		7	4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		31.0		46.0	46.0						24.0	24.0
Effective Green, g (s)		32.0		47.0	47.0						25.0	25.0
Actuated g/C Ratio		0.40		0.59	0.59						0.31	0.31
Clearance Time (s)		5.0		5.0	5.0						5.0	5.0
Vehicle Extension (s)		0.2		0.2	0.2						0.2	0.2
Lane Grp Cap (vph)		684		306	1018						1005	395
v/s Ratio Prot		c0.47		c0.10	0.32							
v/s Ratio Perm				0.33							0.26	0.11
v/c Ratio		1.17		0.75	0.55						0.82	0.35
Uniform Delay, d1		24.0		29.6	10.1						25.4	21.2
Progression Factor		1.00		0.50	0.12						1.00	1.00
Incremental Delay, d2		93.6		0.8	0.0						7.4	2.5
Delay (s)		117.6		15.7	1.3						32.8	23.7
Level of Service		F		B	A						C	C
Approach Delay (s)		117.6			5.4			0.0			30.2	
Approach LOS		F			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



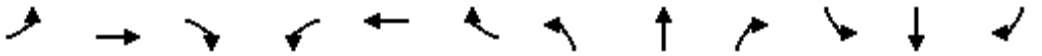
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	545	0	0	640	160	105	710	230	0	0	0
Future Volume (vph)	385	545	0	0	640	160	105	710	230	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	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			
Frpb, ped/bikes	1.00	1.00			1.00	0.96		1.00	0.92			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1662	1716			1733	1434		3254	1362			
Flt Permitted	0.12	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	212	1716			1733	1434		3254	1362			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	592	0	0	696	174	114	772	250	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	181	0	0	0
Lane Group Flow (vph)	418	592	0	0	696	113	0	886	69	0	0	0
Confl. Peds. (#/hr)	23		47	47		23	103		27	27		103
Confl. Bikes (#/hr)			3			7			4			
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	3	8			4			6				
Permitted Phases	8					4	6		6			
Actuated Green, G (s)	49.0	49.0			28.0	28.0		21.0	21.0			
Effective Green, g (s)	50.0	50.0			29.0	29.0		22.0	22.0			
Actuated g/C Ratio	0.62	0.62			0.36	0.36		0.28	0.28			
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0	5.0			
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			
Lane Grp Cap (vph)	440	1072			628	519		894	374			
v/s Ratio Prot	c0.20	0.35			c0.40							
v/s Ratio Perm	0.39					0.08		0.27	0.05			
v/c Ratio	0.95	0.55			1.11	0.22		0.99	0.18			
Uniform Delay, d1	27.4	8.6			25.5	17.7		28.9	22.1			
Progression Factor	0.46	0.17			1.00	1.00		1.00	1.00			
Incremental Delay, d2	5.1	0.0			69.3	0.1		28.0	1.1			
Delay (s)	17.8	1.5			94.8	17.7		56.9	23.2			
Level of Service	B	A			F	B		E	C			
Approach Delay (s)		8.3			79.4			49.5			0.0	
Approach LOS		A			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



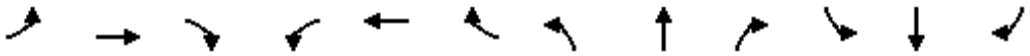
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1130	90	0	770	370	0	0	0	945	0	215
Future Volume (vph)	0	1130	90	0	770	370	0	0	0	945	0	215
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0				4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00				1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.99				1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00				1.00	1.00	
Frt		0.99			1.00	0.85				1.00	0.85	
Flt Protected		1.00			1.00	1.00				0.95	1.00	
Satd. Flow (prot)		3219			1716	1440				1630	1458	
Flt Permitted		1.00			1.00	1.00				0.95	1.00	
Satd. Flow (perm)		3219			1716	1440				1630	1458	
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	1242	99	0	846	407	0	0	0	1038	0	236
RTOR Reduction (vph)	0	55	0	0	0	24	0	0	0	0	52	0
Lane Group Flow (vph)	0	1286	0	0	846	383	0	0	0	1038	184	0
Confl. Peds. (#/hr)	2		1	1		2						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%	0%	0%	0%	2%	0%	2%
Turn Type		NA			NA	custom				Perm	NA	
Protected Phases		2			6	4					4	
Permitted Phases						6				4		
Actuated Green, G (s)		29.0			29.0	56.0				27.0	27.0	
Effective Green, g (s)		30.0			30.0	58.0				28.0	28.0	
Actuated g/C Ratio		0.45			0.45	0.88				0.42	0.42	
Clearance Time (s)		5.0			5.0	5.0				5.0	5.0	
Vehicle Extension (s)		5.2			5.2	3.0				3.0	3.0	
Lane Grp Cap (vph)		1463			780	1440				691	618	
v/s Ratio Prot		0.40			c0.49	0.11					0.13	
v/s Ratio Perm						0.15				c0.64		
v/c Ratio		0.88			1.08	0.27				1.50	0.30	
Uniform Delay, d1		16.4			18.0	0.6				19.0	12.5	
Progression Factor		1.00			1.00	1.00				1.00	1.00	
Incremental Delay, d2		6.9			57.6	0.1				233.5	0.3	
Delay (s)		23.3			75.6	0.7				252.5	12.8	
Level of Service		C			E	A				F	B	
Approach Delay (s)		23.3			51.3			0.0			208.1	
Approach LOS		C			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	93.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



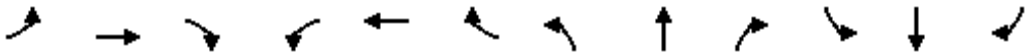
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	585	160	235	580	100	195	860	185	155	1030	175
Future Volume (vph)	335	585	160	235	580	100	195	860	185	155	1030	175
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	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	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)	1630	1733	1408	1614	3173		1646	3148		1630	3214	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	1733	1408	1614	3173		1646	3148		1630	3214	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	356	622	170	250	617	106	207	915	197	165	1096	186
RTOR Reduction (vph)	0	0	90	0	12	0	0	15	0	0	12	0
Lane Group Flow (vph)	356	622	80	250	712	0	207	1097	0	165	1270	0
Confl. Peds. (#/hr)	7		13	13		7	8		14	14		8
Confl. Bikes (#/hr)			5			1			1			
Heavy Vehicles (%)	2%	1%	2%	3%	2%	3%	1%	2%	1%	2%	1%	0%
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)	21.5	35.5	35.5	13.5	27.5		11.5	42.5		10.5	41.5	
Effective Green, g (s)	22.0	36.0	36.0	14.0	28.0		12.0	43.0		11.0	42.0	
Actuated g/C Ratio	0.18	0.30	0.30	0.12	0.23		0.10	0.36		0.09	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	298	519	422	188	740		164	1128		149	1124	
v/s Ratio Prot	c0.22	c0.36		c0.15	0.22		c0.13	0.35		0.10	c0.40	
v/s Ratio Perm			0.06									
v/c Ratio	1.19	1.20	0.19	1.33	0.96		1.26	0.97		1.11	1.13	
Uniform Delay, d1	49.0	42.0	31.2	53.0	45.5		54.0	37.9		54.5	39.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	115.7	106.8	0.2	180.2	23.9		157.6	20.9		105.4	70.2	
Delay (s)	164.7	148.8	31.3	233.2	69.4		211.6	58.8		159.9	109.2	
Level of Service	F	F	C	F	E		F	E		F	F	
Approach Delay (s)		136.3			111.5			82.8			115.0	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	110.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



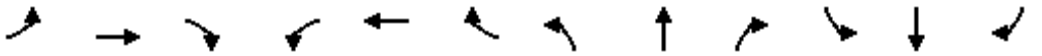
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	135	995	0	0	0	0	0	565	260
Future Volume (vph)	0	0	0	135	995	0	0	0	0	0	565	260
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)					4.0						4.0	
Lane Util. Factor					0.95						0.95	
Frpb, ped/bikes					1.00						1.00	
Flpb, ped/bikes					1.00						1.00	
Frt					1.00						0.95	
Flt Protected					0.99						1.00	
Satd. Flow (prot)					3276						3142	
Flt Permitted					0.99						1.00	
Satd. Flow (perm)					3276						3142	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	144	1059	0	0	0	0	0	601	277
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	42	0
Lane Group Flow (vph)	0	0	0	0	1185	0	0	0	0	0	836	0
Confl. Peds. (#/hr)	3		2	2		3	2		11	11		2
Confl. Bikes (#/hr)						1						3
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Turn Type				Perm	NA						NA	
Protected Phases					6						4	
Permitted Phases				6								
Actuated Green, G (s)					29.0						18.0	
Effective Green, g (s)					29.5						18.5	
Actuated g/C Ratio					0.53						0.33	
Clearance Time (s)					4.5						4.5	
Vehicle Extension (s)					2.6						2.0	
Lane Grp Cap (vph)					1725						1037	
v/s Ratio Prot											c0.27	
v/s Ratio Perm					0.36							
v/c Ratio					0.69						0.81	
Uniform Delay, d1					9.8						17.1	
Progression Factor					1.00						1.00	
Incremental Delay, d2					2.3						4.4	
Delay (s)					12.1						21.5	
Level of Service					B						C	
Approach Delay (s)		0.0			12.1			0.0			21.5	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.2%	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)	360	1340	0	0	0	0	0	500	250	0	0	0
Future Volume (vph)	360	1340	0	0	0	0	0	500	250	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.95				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.95				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3229						3110				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3229						3110				
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)	409	1523	0	0	0	0	0	568	284	0	0	0
RTOR Reduction (vph)	0	42	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	1890	0	0	0	0	0	839	0	0	0	0
Confl. Peds. (#/hr)	5		7	7		5	10		4	4		10
Confl. Bikes (#/hr)			3						1			
Heavy Vehicles (%)	1%	2%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)		29.5						17.5				
Effective Green, g (s)		30.0						18.0				
Actuated g/C Ratio		0.54						0.32				
Clearance Time (s)		4.5						4.5				
Vehicle Extension (s)		2.6						2.0				
Lane Grp Cap (vph)		1729						999				
v/s Ratio Prot								c0.27				
v/s Ratio Perm		0.59										
v/c Ratio		1.09						0.84				
Uniform Delay, d1		13.0						17.7				
Progression Factor		1.00						1.00				
Incremental Delay, d2		51.8						6.1				
Delay (s)		64.8						23.7				
Level of Service		E						C				
Approach Delay (s)		64.8			0.0			23.7			0.0	
Approach LOS		E			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	52.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	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)	270	365	90	150	355	60	195	785	70	160	1065	165
Future Volume (vph)	270	365	90	150	355	60	195	785	70	160	1065	165
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0		4.3	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	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.98		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)	1646	1647		1614	1679		1646	3237		1630	3203	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1646	1647		1614	1679		1646	3237		1630	3203	
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)	307	415	102	170	403	68	222	892	80	182	1210	188
RTOR Reduction (vph)	0	7	0	0	5	0	0	5	0	0	9	0
Lane Group Flow (vph)	307	510	0	170	466	0	222	967	0	182	1389	0
Confl. Peds. (#/hr)	3		1	1		3	10		1	1		10
Confl. Bikes (#/hr)			3									1
Heavy Vehicles (%)	1%	3%	2%	3%	2%	0%	1%	1%	4%	2%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	30.0	30.0		27.0	27.0		11.5	39.5		13.5	41.5	
Effective Green, g (s)	31.0	31.0		28.0	28.0		11.7	40.5		14.0	42.5	
Actuated g/C Ratio	0.24	0.24		0.22	0.22		0.09	0.31		0.11	0.33	
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	394	394		348	363		148	1012		176	1051	
v/s Ratio Prot	0.19	c0.31		0.11	c0.28		c0.13	0.30		0.11	c0.43	
v/s Ratio Perm												
v/c Ratio	0.78	1.29		0.49	1.28		1.50	0.96		1.03	1.32	
Uniform Delay, d1	46.0	49.2		44.5	50.8		58.9	43.6		57.8	43.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	150.4		0.8	147.5		256.9	18.4		77.1	151.3	
Delay (s)	55.1	199.6		45.3	198.2		315.8	62.0		134.8	194.8	
Level of Service	E	F		D	F		F	E		F	F	
Approach Delay (s)		145.8			157.7			109.2			187.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	153.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	16.3
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	210	15	20	515	35	20
Future Vol, veh/h	210	15	20	515	35	20
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	8	0	0	7	0
Mvmt Flow	244	17	23	599	41	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	262	0	899	254
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	645	-
Critical Hdwy	-	-	4.1	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.2	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1314	-	303	790
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	513	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1313	-	295	789
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	382	-	-	1313	-
HCM Lane V/C Ratio	0.167	-	-	0.018	-
HCM Control Delay (s)	16.3	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

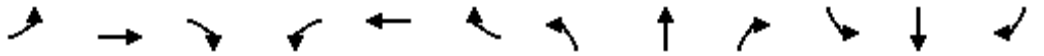
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	95	1215	810	5	1015	430	0	0	35	5	0	15
Future Vol, veh/h	95	1215	810	5	1015	430	0	0	35	5	0	15
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	0	1	4	0	0	5	0	0	6
Mvmt Flow	100	1279	853	5	1068	453	0	0	37	5	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1522	0	0	2132	0	0	-	-	1066	2146	3638	762
Stage 1	-	-	-	-	-	-	-	-	-	1306	1306	-
Stage 2	-	-	-	-	-	-	-	-	-	840	2332	-
Critical Hdwy	4.14	-	-	4.1	-	-	-	-	7	7.5	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Follow-up Hdwy	2.22	-	-	2.2	-	-	-	-	3.35	3.5	4	3.36
Pot Cap-1 Maneuver	434	-	-	258	-	-	0	0	213	28	5	339
Stage 1	-	-	-	-	-	-	0	0	-	172	232	-
Stage 2	-	-	-	-	-	-	0	0	-	330	71	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	434	-	-	258	-	-	-	-	213	20	4	339
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	20	4	-
Stage 1	-	-	-	-	-	-	-	-	-	172	189	-
Stage 2	-	-	-	-	-	-	-	-	-	273	71	-

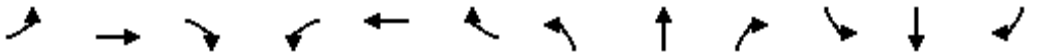
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	1.3	25.4	80.1
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	213	434	-	-	258	-	-	68
HCM Lane V/C Ratio	0.173	0.23	-	-	0.02	-	-	0.31
HCM Control Delay (s)	25.4	15.8	0	-	19.2	1.8	-	80.1
HCM Lane LOS	D	C	A	-	C	A	-	F
HCM 95th %tile Q(veh)	0.6	0.9	-	-	0.1	-	-	1.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	875	155	170	480	90	490	770	250	120	940	305
Future Volume (vph)	190	875	155	170	480	90	490	770	250	120	940	305
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		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	
Frt		0.98			0.98		1.00	0.96		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3129			3154		1646	3102		1630	3129	
Flt Permitted		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3129			3154		1646	3102		1630	3129	
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)	198	911	161	177	500	94	510	802	260	125	979	318
RTOR Reduction (vph)	0	8	0	0	7	0	0	21	0	0	21	0
Lane Group Flow (vph)	0	1262	0	0	764	0	510	1041	0	125	1276	0
Confl. Peds. (#/hr)	2		1	1		2	1		9	9		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	5%	2%	2%	3%	1%	3%	1%	2%	2%	2%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)		41.5			29.5		19.5	52.3		8.7	41.5	
Effective Green, g (s)		42.0			30.0		20.0	52.8		9.2	42.0	
Actuated g/C Ratio		0.28			0.20		0.13	0.35		0.06	0.28	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)		876			630		219	1091		99	876	
v/s Ratio Prot		c0.40			c0.24		c0.31	0.34		0.08	c0.41	
v/s Ratio Perm												
v/c Ratio		1.44			1.21		2.33	0.95		1.26	1.46	
Uniform Delay, d1		54.0			60.0		65.0	47.4		70.4	54.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		204.8			109.8		612.0	18.3		176.7	211.9	
Delay (s)		258.8			169.8		677.0	65.7		247.1	265.9	
Level of Service		F			F		F	E		F	F	
Approach Delay (s)		258.8			169.8			264.0			264.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	248.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	142.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	225	100	70	215	155	70	755	75	35	490	480
Future Volume (vph)	380	225	100	70	215	155	70	755	75	35	490	480
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	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	0.95		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1646	1643		1662	1750	1432	1662	1717		1599	1733	1417
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.22	1.00		0.09	1.00	1.00
Satd. Flow (perm)	1646	1643		1662	1750	1432	389	1717		156	1733	1417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	245	109	76	234	168	76	821	82	38	533	522
RTOR Reduction (vph)	0	15	0	0	0	0	0	3	0	0	0	283
Lane Group Flow (vph)	413	339	0	76	234	168	76	900	0	38	533	239
Confl. Peds. (#/hr)	3					3	5		4	4		5
Confl. Bikes (#/hr)			7			16			7			6
Heavy Vehicles (%)	1%	1%	0%	0%	0%	1%	0%	0%	2%	4%	1%	1%
Turn Type	Prot	NA		Prot	NA	Free	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases						Free	8			4		4
Actuated Green, G (s)	20.2	33.6		5.5	18.9	105.2	47.2	43.3		45.0	42.2	42.2
Effective Green, g (s)	21.2	34.6		6.5	19.9	105.2	49.2	44.3		47.0	43.2	43.2
Actuated g/C Ratio	0.20	0.33		0.06	0.19	1.00	0.47	0.42		0.45	0.41	0.41
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	331	540		102	331	1432	241	723		121	711	581
v/s Ratio Prot	c0.25	0.21		0.05	c0.13		c0.01	c0.52		0.01	0.31	
v/s Ratio Perm						c0.12	0.13			0.13		0.17
v/c Ratio	1.25	0.63		0.75	0.71	0.12	0.32	1.24		0.31	0.75	0.41
Uniform Delay, d1	42.0	29.9		48.5	39.9	0.0	18.4	30.5		24.0	26.4	22.0
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	134.2	2.3		25.2	6.7	0.2	0.8	121.7		1.5	4.4	0.5
Delay (s)	176.2	32.1		73.7	46.7	0.2	19.2	152.1		25.5	30.7	22.4
Level of Service	F	C		E	D	A	B	F		C	C	C
Approach Delay (s)		109.7			34.6			141.8			26.6	
Approach LOS		F			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	81.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	105.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

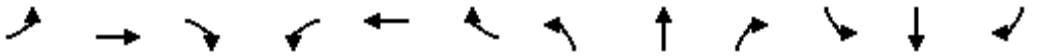
Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	80	675	5	55	730
Future Vol, veh/h	30	80	675	5	55	730
Conflicting Peds, #/hr	1	0	0	28	28	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	34	90	758	6	62	820

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1734	789	0	0	792	0
Stage 1	789	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	98	394	-	-	838	-
Stage 1	451	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	88	385	-	-	818	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	407	-	-	-	-	-
Stage 2	381	-	-	-	-	-

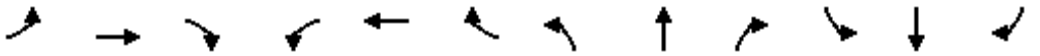
Approach	WB	NB	SB
HCM Control Delay, s	48.4	0	0.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	200	818	-
HCM Lane V/C Ratio	-	-	0.618	0.076	-
HCM Control Delay (s)	-	-	48.4	9.8	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	3.5	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	430	205	410	700	20	0	0	0	115	520	205
Future Volume (vph)	105	430	205	410	700	20	0	0	0	115	520	205
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00						0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00						1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.95		1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1646	3058		1646	1724						3257	1296
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1646	3058		1646	1724						3257	1296
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)	111	453	216	432	737	21	0	0	0	121	547	216
RTOR Reduction (vph)	0	69	0	0	1	0	0	0	0	0	0	161
Lane Group Flow (vph)	111	600	0	432	757	0	0	0	0	0	668	55
Confl. Peds. (#/hr)	12		47	47		12	38		18	18		38
Confl. Bikes (#/hr)			1			11			1			24
Heavy Vehicles (%)	1%	2%	0%	1%	1%	0%	0%	0%	0%	0%	1%	1%
Turn Type	Prot	NA		Prot	NA					Perm	NA	Perm
Protected Phases	5	2		1	6						4	
Permitted Phases										4		4
Actuated Green, G (s)	7.4	24.4		23.2	40.2						20.4	20.4
Effective Green, g (s)	7.4	24.4		23.2	40.2						20.4	20.4
Actuated g/C Ratio	0.09	0.30		0.29	0.50						0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	152	932		477	866						830	330
v/s Ratio Prot	0.07	0.20		c0.26	c0.44							
v/s Ratio Perm											0.21	0.04
v/c Ratio	0.73	0.64		0.91	0.87						0.80	0.17
Uniform Delay, d1	35.3	24.0		27.3	17.6						27.9	23.2
Progression Factor	1.00	1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2	16.4	3.4		20.5	11.9						5.7	0.2
Delay (s)	51.8	27.5		47.9	29.5						33.6	23.4
Level of Service	D	C		D	C						C	C
Approach Delay (s)		30.9			36.2			0.0			31.1	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.0	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			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	815	235	345	675	280	225	915	250	355	960	120
Future Volume (vph)	270	815	235	345	675	280	225	915	250	355	960	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
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	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	0.97		1.00	0.96		1.00	0.97		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)	1599	3170		1646	3104		1646	3167		1583	3228	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1599	3170		1646	3104		1646	3167		1583	3228	
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)	281	849	245	359	703	292	234	953	260	370	1000	125
RTOR Reduction (vph)	0	17	0	0	29	0	0	15	0	0	6	0
Lane Group Flow (vph)	281	1077	0	359	967	0	234	1198	0	370	1119	0
Confl. Peds. (#/hr)	2		1	1		2	6		7	7		6
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	4%	1%	1%	1%	1%	4%	1%	1%	1%	5%	1%	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)	21.0	41.0		25.0	45.0		22.0	47.0		27.0	52.0	
Effective Green, g (s)	22.0	42.0		26.0	46.0		23.0	48.0		28.0	53.0	
Actuated g/C Ratio	0.14	0.26		0.16	0.29		0.14	0.30		0.18	0.33	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.3		2.5	4.3		2.5	4.3		2.5	4.3	
Lane Grp Cap (vph)	219	832		267	892		236	950		277	1069	
v/s Ratio Prot	0.18	c0.34		c0.22	c0.31		0.14	c0.38		c0.23	0.35	
v/s Ratio Perm												
v/c Ratio	1.28	1.29		1.34	1.08		0.99	1.26		1.34	1.05	
Uniform Delay, d1	69.0	59.0		67.0	57.0		68.4	56.0		66.0	53.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	157.5	141.4		178.0	55.4		56.0	125.8		173.6	40.6	
Delay (s)	226.5	200.4		245.0	112.4		124.4	181.8		239.6	94.1	
Level of Service	F	F		F	F		F	F		F	F	
Approach Delay (s)		205.8			147.5			172.5			130.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	163.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	124.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

US 97 Bend Parkway Future No Build

Vistro File: X:\...\Future_NoBuild_RIRO_Baseline.vistro
Scenario: Base Scenario
Report File: X:\...\Roundabouts_RIRO_Baseline.pdf
3/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Reed Market and Brookswood	Roundabout	HCM 6th Edition	SEB Thru		423.5	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Reed Market and Brookswood

Control Type:	Roundabout	Delay (sec / veh):	423.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	290	145	450	535	75	155	400	295	90	580	325
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	1.00	5.00	1.00	1.00	0.00	2.00	1.00	3.00	0.00	1.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	290	145	450	535	75	155	400	295	90	580	325
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	75	37	116	138	19	40	103	76	23	149	84
Total Analysis Volume [veh/h]	258	299	149	464	552	77	160	412	304	93	598	335
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1166			837			653			1189		
Exiting Flow Rate [veh/h]	1059			708			1229			751		
Demand Flow Rate [veh/h]	250	290	145	450	535	75	155	400	295	90	580	325
Adjusted Demand Flow Rate [veh/h]	258	299	149	464	552	77	160	412	304	93	598	335

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.99	0.99	0.98	0.99
Entry Flow Rate [veh/h]	717	1104	893	1036
Capacity of Entry and Bypass Lanes [veh/h]	421	588	709	411
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	415	583	696	407
X, volume / capacity	1.70	1.88	1.26	2.52

Movement, Approach, & Intersection Results

Lane LOS	F	F	F	F
95th-Percentile Queue Length [veh]	42.67	69.75	32.59	82.12
95th-Percentile Queue Length [ft]	1066.75	1743.68	814.68	2052.99
Approach Delay [s/veh]	350.36	419.05	147.87	713.95
Approach LOS	F	F	F	F
Intersection Delay [s/veh]	423.51			
Intersection LOS	F			