APPENDIX H

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS
EXISTING + CUMULATIVE PROJECTS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	508	10	270	604	570	0	0	611	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.6	5.6	5.6	5.2	5.6			5.6	5.6
Lane Util. Factor				0.95	0.91	0.95	0.97	0.95			0.91	1.00
Frt				1.00	0.99	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1681	1601	1504	3433	3539			5085	1583
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1681	1601	1504	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	552	11	293	657	620	0	0	664	402
RTOR Reduction (vph)	0	0	0	0	4	167	0	0	0	0	0	251
Lane Group Flow (vph)	0	0	0	298	290	97	657	620	0	0	664	151
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				26.2	26.2	26.2	19.8	62.6			37.6	37.6
Effective Green, g (s)				26.2	26.2	26.2	19.8	62.6			37.6	37.6
Actuated g/C Ratio				0.26	0.26	0.26	0.20	0.63			0.38	0.38
Clearance Time (s)				5.6	5.6	5.6	5.2	5.6			5.6	5.6
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				440	419	394	680	2215			1912	595
v/s Ratio Prot				0.18	c0.18		c0.19	0.18			c0.13	
v/s Ratio Perm						0.06						0.10
v/c Ratio				0.68	0.69	0.25	0.97	0.28			0.35	0.25
Uniform Delay, d1				33.1	33.3	29.1	39.8	8.5			22.4	21.5
Progression Factor				1.00	1.00	1.00	0.62	0.39			1.00	1.00
Incremental Delay, d2				4.1	4.9	0.3	21.2	0.2			0.5	1.0
Delay (s)				37.2	38.1	29.4	45.8	3.6			22.9	22.6
Level of Service				D	D	C	D	A			C	C
Approach Delay (s)		0.0			35.1			25.3			22.8	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	265	140	725	0	0	0	0	909	434	220	899	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	5.6					5.6	5.6	5.2	5.5	
Lane Util. Factor	0.95	0.91	0.95					0.95	0.88	0.97	0.95	
Frt	1.00	0.90	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1529	1504					3539	2787	3433	3539	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1529	1504					3539	2787	3433	3539	
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)	288	152	788	0	0	0	0	988	472	239	977	0
RTOR Reduction (vph)	0	42	42	0	0	0	0	0	302	0	0	0
Lane Group Flow (vph)	259	454	431	0	0	0	0	988	170	239	977	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	36.7	36.7	36.7					36.1	36.1	10.8	52.2	
Effective Green, g (s)	36.7	36.7	36.7					36.1	36.1	10.8	52.2	
Actuated g/C Ratio	0.37	0.37	0.37					0.36	0.36	0.11	0.52	
Clearance Time (s)	5.6	5.6	5.6					5.6	5.6	5.2	5.5	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	617	561	552					1278	1006	371	1847	
v/s Ratio Prot	0.15	c0.30						c0.28		0.07	c0.28	
v/s Ratio Perm			0.29						0.06			
v/c Ratio	0.42	0.81	0.78					0.77	0.17	0.64	0.53	
Uniform Delay, d1	23.7	28.5	28.1					28.3	21.7	42.8	15.8	
Progression Factor	1.00	1.00	1.00					0.52	0.81	1.07	0.37	
Incremental Delay, d2	0.5	8.4	7.1					3.6	0.3	3.5	1.0	
Delay (s)	24.1	37.0	35.2					18.2	17.8	49.2	6.9	
Level of Service	C	D	D					B	B	D	A	
Approach Delay (s)		33.6			0.0			18.1			15.2	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	340	420	210	104	640	245	443	803	58	404	874	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	4895	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	4895	
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)	370	457	228	113	696	266	482	873	63	439	950	315
RTOR Reduction (vph)	0	0	153	0	0	168	0	0	27	0	59	0
Lane Group Flow (vph)	370	457	75	113	696	98	482	873	36	439	1206	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	12.7	33.0	33.0	5.0	26.3	26.3	11.0	29.0	29.0	13.0	31.0	
Effective Green, g (s)	12.7	33.0	33.0	5.0	26.3	26.3	11.0	29.0	29.0	13.0	31.0	
Actuated g/C Ratio	0.13	0.33	0.33	0.05	0.26	0.26	0.11	0.29	0.29	0.13	0.31	
Clearance Time (s)	4.0	5.0	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	3.0	3.0	
Lane Grp Cap (vph)	436	1168	522	172	931	416	378	1475	459	446	1517	
v/s Ratio Prot	c0.11	0.13		0.03	c0.20		c0.14	0.17		c0.13	c0.25	
v/s Ratio Perm			0.05			0.06			0.02			
v/c Ratio	0.85	0.39	0.14	0.66	0.75	0.24	1.28	0.59	0.08	0.98	0.79	
Uniform Delay, d1	42.7	25.8	23.6	46.7	33.8	29.0	44.5	30.4	25.8	43.4	31.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.11	0.85	
Incremental Delay, d2	14.2	0.2	0.1	8.7	3.3	0.3	142.9	1.8	0.3	33.7	3.5	
Delay (s)	57.0	26.0	23.7	55.4	37.1	29.2	187.4	32.2	26.1	81.8	30.3	
Level of Service	E	C	C	E	D	C	F	C	C	F	C	
Approach Delay (s)		36.4			37.1			84.7			43.6	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	334	5	56	5	5	5	183	850	5	70	1040	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1723		1770	3536		1770	3451	
Flt Permitted	0.75	1.00	1.00	0.75	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1399	1863	1583	1405	1723		1770	3536		1770	3451	
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)	363	5	61	5	5	5	199	924	5	76	1130	226
RTOR Reduction (vph)	0	0	44	0	4	0	0	0	0	0	18	0
Lane Group Flow (vph)	363	5	17	5	6	0	199	929	0	76	1338	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	25.3	25.3	25.3	25.3	25.3		11.0	45.1		6.8	40.9	
Effective Green, g (s)	25.3	25.3	25.3	25.3	25.3		11.0	45.1		6.8	40.9	
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28		0.12	0.51		0.08	0.46	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	397	528	449	399	489		218	1788		135	1582	
v/s Ratio Prot		0.00			0.00		c0.11	0.26		0.04	c0.39	
v/s Ratio Perm	c0.26		0.01	0.00								
v/c Ratio	0.91	0.01	0.04	0.01	0.01		0.91	0.52		0.56	0.85	
Uniform Delay, d1	30.9	22.9	23.1	23.0	23.0		38.6	14.8		39.8	21.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	25.1	0.0	0.0	0.0	0.0		37.7	1.1		5.3	5.8	
Delay (s)	56.0	23.0	23.2	23.0	23.0		76.4	15.9		45.1	27.1	
Level of Service	E	C	C	C	C		E	B		D	C	
Approach Delay (s)		50.9			23.0			26.5			28.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	184	130	255	401	183	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	141	277	436	199	220
RTOR Reduction (vph)	0	113	0	0	0	96
Lane Group Flow (vph)	200	28	277	436	199	124
Turn Type		Perm	Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases		4				2
Actuated Green, G (s)	11.4	11.4	13.2	29.1	18.7	31.9
Effective Green, g (s)	11.4	11.4	13.2	29.1	18.7	31.9
Actuated g/C Ratio	0.20	0.20	0.23	0.51	0.33	0.56
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	374	318	411	954	583	1014
v/s Ratio Prot	0.11		c0.16	c0.23	c0.11	0.03
v/s Ratio Perm		0.02				0.05
v/c Ratio	0.53	0.09	0.67	0.46	0.34	0.12
Uniform Delay, d1	20.3	18.5	19.8	8.8	14.4	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	4.3	0.3	1.6	0.1
Delay (s)	21.8	18.6	24.2	9.2	16.0	5.9
Level of Service	C	B	C	A	B	A
Approach Delay (s)	20.5			15.0	10.7	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	22	0	0	259	11	162	151	0	285	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	24	0	0	282	12	176	164	0	310	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	703	674	155	379	510	88	310			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	703	674	155	379	510	88	310			340		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	70	99			100		
cM capacity (veh/h)	227	371	863	534	461	953	1248			1216		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	24	282	12	88	88	164	207	103
Volume Left	0	0	12	0	0	0	0	0
Volume Right	24	282	0	0	0	164	0	0
cSH	863	953	1248	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.30	0.01	0.05	0.05	0.10	0.12	0.06
Queue Length 95th (ft)	2	31	1	0	0	0	0	0
Control Delay (s)	9.3	10.4	7.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B	A					
Approach Delay (s)	9.3	10.4	0.3				0.0	
Approach LOS	A	B						

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	447	946	0	0	966	201	440	3	470	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.5			5.5	5.5		4.6	4.6			
Lane Util. Factor	0.97	0.91			0.91	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98		1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	3433	5085			5085	1556		1775	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	3433	5085			5085	1556		1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	486	1028	0	0	1050	218	478	3	511	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	153	0	0	47	0	0	0
Lane Group Flow (vph)	486	1028	0	0	1050	65	0	481	464	0	0	0
Confl. Peds. (#/hr)			2			3	6					
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	18.9	54.5			31.4	31.4		40.4	40.4			
Effective Green, g (s)	18.9	54.5			31.4	31.4		40.4	40.4			
Actuated g/C Ratio	0.18	0.52			0.30	0.30		0.38	0.38			
Clearance Time (s)	4.2	5.5			5.5	5.5		4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	618	2639			1521	465		683	609			
v/s Ratio Prot	c0.14	0.20			c0.21			0.27				
v/s Ratio Perm						0.04			c0.29			
v/c Ratio	0.79	0.39			0.69	0.14		0.70	0.76			
Uniform Delay, d1	41.1	15.2			32.5	26.9		27.3	28.1			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	6.5	0.4			2.6	0.6		6.0	8.7			
Delay (s)	47.7	15.7			35.1	27.6		33.3	36.8			
Level of Service	D	B			D	C		C	D			
Approach Delay (s)		25.9			33.8			35.1			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	870	90	200	936	270	70	80	170	353	120	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.5	5.5	4.2	5.5	5.5	4.6	4.6	4.6		4.6	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.81	0.81	1.00	1.00	1.00		0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	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		1.00	
Frt	1.00	1.00	0.85	1.00	0.99	0.85	1.00	1.00	0.85		0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	3433	5085	1560	3433	5977	1258	1770	1863	1583		3182	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	3433	5085	1560	3433	5977	1258	1770	1863	1583		3182	
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)	86	946	98	217	1017	293	76	87	185	384	130	707
RTOR Reduction (vph)	0	0	72	0	7	159	0	0	162	0	212	0
Lane Group Flow (vph)	86	946	26	217	1072	72	76	87	23	0	1009	0
Confl. Peds. (#/hr)			2			5						
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			
Actuated Green, G (s)	4.9	28.8	28.8	10.4	34.3	34.3	13.5	13.5	13.5		38.4	
Effective Green, g (s)	4.9	28.8	28.8	10.4	34.3	34.3	13.5	13.5	13.5		38.4	
Actuated g/C Ratio	0.04	0.26	0.26	0.09	0.31	0.31	0.12	0.12	0.12		0.35	
Clearance Time (s)	4.2	5.5	5.5	4.2	5.5	5.5	4.6	4.6	4.6		4.6	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	153	1331	408	325	1864	392	217	229	194		1111	
v/s Ratio Prot	0.03	c0.19		c0.06	0.18		0.04	c0.05			c0.32	
v/s Ratio Perm			0.02			0.06			0.01			
v/c Ratio	0.56	0.71	0.06	0.67	0.58	0.18	0.35	0.38	0.12		0.91	
Uniform Delay, d1	51.5	36.8	30.5	48.1	31.7	27.6	44.2	44.4	42.9		34.1	
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	4.7	3.2	0.3	5.1	0.4	0.2	1.0	1.1	0.3		10.7	
Delay (s)	56.2	40.1	30.8	53.3	32.2	27.9	45.2	45.5	43.2		44.8	
Level of Service	E	D	C	D	C	C	D	D	D		D	
Approach Delay (s)		40.5			34.5			44.2			44.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.9
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	442	430	100	731	40	300	706	50	150	913	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	3.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.93		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3277		3433	3512		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3277		3433	3512		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	480	467	109	795	43	326	767	54	163	992	613
RTOR Reduction (vph)	0	143	0	0	4	0	0	0	37	0	0	5
Lane Group Flow (vph)	228	804	0	109	834	0	326	767	17	163	992	608
Turn Type	Prot			Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	16.3	33.4		5.0	22.1		10.1	29.2	29.2	7.0	24.1	40.4
Effective Green, g (s)	16.3	33.4		5.0	22.1		10.1	29.2	29.2	7.0	24.1	40.4
Actuated g/C Ratio	0.18	0.36		0.05	0.24		0.11	0.32	0.32	0.08	0.26	0.44
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	3.0	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	3.0
Lane Grp Cap (vph)	604	1182		185	838		374	1603	499	260	1323	776
v/s Ratio Prot	0.07	0.25		0.03	c0.24		c0.09	0.15		0.05	0.20	c0.14
v/s Ratio Perm									0.01			0.25
v/c Ratio	0.38	0.68		0.59	1.00		0.87	0.48	0.03	0.63	0.75	0.78
Uniform Delay, d1	33.7	25.1		42.8	35.2		40.6	25.6	21.9	41.5	31.5	22.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.6		4.7	29.8		19.4	1.0	0.1	4.7	3.9	5.2
Delay (s)	34.1	26.7		47.5	65.0		60.0	26.6	22.1	46.2	35.4	27.5
Level of Service	C	C		D	E		E	C	C	D	D	C
Approach Delay (s)		28.1			63.0			35.9			33.7	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	38.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	318	15	150	328	180	20	680	170	120	1180	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	0.99		1.00	0.95		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3516		1770	3351		1770	4933		1770	4938	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3516		1770	3351		1770	4933		1770	4938	
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)	191	346	16	163	357	196	22	739	185	130	1283	307
RTOR Reduction (vph)	0	4	0	0	84	0	0	40	0	0	35	0
Lane Group Flow (vph)	191	358	0	163	469	0	22	884	0	130	1555	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	12.5	19.9		11.4	18.8		1.5	32.3		8.9	39.7	
Effective Green, g (s)	12.5	19.9		11.4	18.8		1.5	32.3		8.9	39.7	
Actuated g/C Ratio	0.14	0.22		0.12	0.20		0.02	0.35		0.10	0.43	
Clearance Time (s)	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	
Lane Grp Cap (vph)	239	756		218	681		29	1723		170	2119	
v/s Ratio Prot	c0.11	0.10		0.09	c0.14		0.01	0.18		c0.07	c0.31	
v/s Ratio Perm												
v/c Ratio	0.80	0.47		0.75	0.69		0.76	0.51		0.76	0.73	
Uniform Delay, d1	38.8	31.7		39.2	34.1		45.3	23.9		40.8	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.8	0.5		13.1	2.9		71.7	1.1		18.3	2.3	
Delay (s)	55.6	32.2		52.2	37.1		117.0	25.0		59.1	24.3	
Level of Service	E	C		D	D		F	C		E	C	
Approach Delay (s)		40.3			40.5			27.1			26.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	21	27	16	47	75	22	733	7	28	1105	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1707		1770	1690		1770	3534		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1707		1770	1690		1770	3534		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	23	29	17	51	82	24	797	8	30	1201	51
RTOR Reduction (vph)	0	26	0	0	74	0	0	1	0	0	0	26
Lane Group Flow (vph)	83	26	0	17	59	0	24	804	0	30	1201	25
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.8	6.8		6.3	6.3		1.3	30.0		1.9	30.6	30.6
Effective Green, g (s)	6.8	6.8		6.3	6.3		1.3	30.0		1.9	30.6	30.6
Actuated g/C Ratio	0.11	0.11		0.10	0.10		0.02	0.48		0.03	0.49	0.49
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
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)	191	184		177	169		37	1683		53	1719	769
v/s Ratio Prot	c0.05	0.02		0.01	c0.04		0.01	0.23		c0.02	c0.34	
v/s Ratio Perm												0.02
v/c Ratio	0.43	0.14		0.10	0.35		0.65	0.48		0.57	0.70	0.03
Uniform Delay, d1	26.3	25.5		25.8	26.4		30.6	11.2		30.1	12.6	8.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.4		0.2	1.3		33.0	1.0		13.1	2.4	0.1
Delay (s)	27.9	25.8		26.0	27.7		63.6	12.2		43.3	15.0	8.5
Level of Service	C	C		C	C		E	B		D	B	A
Approach Delay (s)		27.1			27.5			13.7			15.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	10	386	90	12	52	325	317	43	138	1037	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3476		1770	3526	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3476		1770	3526	
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)	90	11	420	98	13	57	353	345	47	150	1127	29
RTOR Reduction (vph)	0	0	311	0	0	51	0	10	0	0	2	0
Lane Group Flow (vph)	90	11	109	98	13	6	353	382	0	150	1154	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.2	11.8	11.8	7.5	10.1	10.1	21.2	43.1		12.6	34.5	
Effective Green, g (s)	9.2	11.8	11.8	7.5	10.1	10.1	21.2	43.1		12.6	34.5	
Actuated g/C Ratio	0.10	0.13	0.13	0.08	0.11	0.11	0.23	0.46		0.14	0.37	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	175	236	201	143	202	172	403	1611		240	1308	
v/s Ratio Prot	0.05	0.01		c0.06	0.01		c0.20	0.11		0.08	c0.33	
v/s Ratio Perm			c0.07			0.00						
v/c Ratio	0.51	0.05	0.54	0.69	0.06	0.04	0.88	0.24		0.62	0.88	
Uniform Delay, d1	39.8	35.7	38.1	41.6	37.2	37.1	34.6	15.0		38.0	27.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.1	3.0	12.8	0.1	0.1	18.7	0.1		5.0	7.3	
Delay (s)	42.3	35.7	41.1	54.4	37.3	37.2	53.3	15.1		43.0	34.7	
Level of Service	D	D	D	D	D	D	D	B		D	C	
Approach Delay (s)		41.2			47.2			33.2			35.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	580	658	127	1214	0	0	0	0	163	7	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	4.2	5.0					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95					0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97	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
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3374	1467	1687	3374					1603	1615	1509
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3374	1467	1687	3374					1603	1615	1509
Peak-hour factor, PHF	0.92	0.78	0.94	0.69	0.86	0.92	0.92	0.92	0.92	0.78	0.58	0.76
Adj. Flow (vph)	0	744	700	184	1412	0	0	0	0	209	12	101
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	32
Lane Group Flow (vph)	0	744	700	184	1412	0	0	0	0	111	110	69
Confl. Peds. (#/hr)			11									
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	2%	7%	7%	7%	7%	2%	2%	2%	2%	7%	7%	7%
Turn Type			Perm	Prot						Split		custom
Protected Phases		2		1	6					4	4	4 5
Permitted Phases			2									4
Actuated Green, G (s)		46.0	46.0	13.6	55.6					11.6	11.6	20.4
Effective Green, g (s)		46.0	46.0	13.6	55.6					11.6	11.6	20.4
Actuated g/C Ratio		0.54	0.54	0.16	0.65					0.14	0.14	0.24
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6	4.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1826	794	270	2207					219	220	362
v/s Ratio Prot		0.22		c0.11	0.42					c0.07	0.07	0.05
v/s Ratio Perm			c0.48									
v/c Ratio		0.41	0.88	0.68	0.64					0.51	0.50	0.19
Uniform Delay, d1		11.5	17.1	33.7	8.7					34.0	34.0	25.7
Progression Factor		1.00	1.00	1.11	1.11					1.00	1.00	1.00
Incremental Delay, d2		0.7	13.5	6.0	1.1					1.8	1.8	0.3
Delay (s)		12.2	30.6	43.3	10.8					35.9	35.8	26.0
Level of Service		B	C	D	B					D	D	C
Approach Delay (s)		21.1			14.6			0.0			32.8	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	625	0	0	665	318	676	1	187	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0			5.0	5.0	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3273	3374			3374	1476	1603	1607	1509			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3273	3374			3374	1476	1603	1607	1509			
Peak-hour factor, PHF	0.82	0.80	0.92	0.92	0.88	0.88	0.83	0.25	0.74	0.92	0.92	0.92
Adj. Flow (vph)	144	781	0	0	756	361	814	4	253	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	213	0	0	107	0	0	0
Lane Group Flow (vph)	144	781	0	0	756	148	407	411	146	0	0	0
Confl. Peds. (#/hr)						7						
Heavy Vehicles (%)	7%	7%	2%	2%	7%	7%	7%	7%	7%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	9.1	48.2			34.9	34.9	27.2	27.2	27.2			
Effective Green, g (s)	9.1	48.2			34.9	34.9	27.2	27.2	27.2			
Actuated g/C Ratio	0.11	0.57			0.41	0.41	0.32	0.32	0.32			
Clearance Time (s)	4.2	5.0			5.0	5.0	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	350	1913			1385	606	513	514	483			
v/s Ratio Prot	0.04	c0.23			c0.22		0.25	c0.26				
v/s Ratio Perm						0.10			0.10			
v/c Ratio	0.41	0.41			0.55	0.24	0.79	0.80	0.30			
Uniform Delay, d1	35.4	10.4			19.0	16.4	26.3	26.4	21.8			
Progression Factor	1.63	0.79			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.7	0.6			0.4	0.2	8.2	8.5	0.4			
Delay (s)	58.6	8.8			19.5	16.6	34.6	34.9	22.1			
Level of Service	E	A			B	B	C	C	C			
Approach Delay (s)		16.6			18.6			31.8			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	22	92	224	60	85	153
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	100	243	65	92	166

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	124	309	259
Volume Left (vph)	24	0	92
Volume Right (vph)	100	65	0
Hadj (s)	-0.41	-0.09	0.11
Departure Headway (s)	4.8	4.4	4.7
Degree Utilization, x	0.16	0.38	0.34
Capacity (veh/h)	680	786	741
Control Delay (s)	8.7	10.1	10.0
Approach Delay (s)	8.7	10.1	10.0
Approach LOS	A	B	A

Intersection Summary			
Delay	9.8		
HCM Level of Service	A		
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	156	235	182	55	7	194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	170	255	198	60	8	211

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	170	255	198	60	8	211
Volume Left (vph)	170	0	0	0	8	0
Volume Right (vph)	0	0	0	60	0	211
Hadj (s)	0.53	0.03	0.03	-0.67	0.53	-0.67
Departure Headway (s)	6.0	5.5	5.7	5.0	6.7	5.5
Degree Utilization, x	0.28	0.39	0.31	0.08	0.01	0.32
Capacity (veh/h)	577	636	606	683	503	611
Control Delay (s)	10.1	10.7	10.1	7.2	8.6	9.9
Approach Delay (s)	10.5		9.4		9.8	
Approach LOS	B		A		A	

Intersection Summary			
Delay	10.0		
HCM Level of Service	B		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	260	10	10	431	5	10	15	25	5	10	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1852		1770	1863	1583		1719		1770	1597	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	1852		1770	1863	1583		1719		1770	1597	
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)	125	283	11	11	468	5	11	16	27	5	11	218
RTOR Reduction (vph)	0	1	0	0	0	2	0	21	0	0	171	0
Lane Group Flow (vph)	125	293	0	11	468	3	0	33	0	5	58	0
Turn Type	Prot			Prot		pm+ov	Split			Split		
Protected Phases	5	2		1	6	4	8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	6.0	30.4		0.8	25.2	43.2		18.0		18.0	18.0	
Effective Green, g (s)	6.0	30.4		0.8	25.2	43.2		18.0		18.0	18.0	
Actuated g/C Ratio	0.07	0.37		0.01	0.30	0.52		0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	128	677		17	564	898		372		383	346	
v/s Ratio Prot	c0.07	0.16		0.01	c0.25	0.00		c0.02		0.00	c0.04	
v/s Ratio Perm						0.00						
v/c Ratio	0.98	0.43		0.65	0.83	0.00		0.09		0.01	0.17	
Uniform Delay, d1	38.5	19.9		41.1	27.0	9.6		26.0		25.6	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	71.6	2.0		62.0	13.3	0.0		0.5		0.1	1.0	
Delay (s)	110.1	21.9		103.1	40.3	9.6		26.5		25.7	27.6	
Level of Service	F	C		F	D	A		C		C	C	
Approach Delay (s)		48.2			41.4			26.5			27.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	40.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	135	20	500	94	30	300
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	147	22	543	102	33	326
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		1347	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		1347	158
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			61		68	63
cM capacity (veh/h)			1409		102	888

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	168	646	359
Volume Left	0	543	33
Volume Right	22	0	326
cSH	1700	1409	523
Volume to Capacity	0.10	0.39	0.69
Queue Length 95th (ft)	0	46	131
Control Delay (s)	0.0	8.3	25.6
Lane LOS		A	D
Approach Delay (s)	0.0	8.3	25.6
Approach LOS			D

Intersection Summary			
Average Delay	12.4		
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	124	1	304	77	44	2	205	146	11	358	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1861		1770	1761		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1861		1770	1761		1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	135	1	330	84	48	2	223	159	12	389	155
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	97	0	0	95
Lane Group Flow (vph)	111	136	0	330	107	0	2	223	62	12	389	60
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	7.8	8.8		17.9	18.9		0.6	28.7	28.7	0.6	28.7	28.7
Effective Green, g (s)	7.8	8.8		17.9	18.9		0.6	28.7	28.7	0.6	28.7	28.7
Actuated g/C Ratio	0.11	0.12		0.24	0.26		0.01	0.39	0.39	0.01	0.39	0.39
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	187	221		428	450		14	723	614	14	723	614
v/s Ratio Prot	0.06	c0.07		c0.19	0.06		0.00	0.12		c0.01	c0.21	
v/s Ratio Perm									0.04			0.04
v/c Ratio	0.59	0.62		0.77	0.24		0.14	0.31	0.10	0.86	0.54	0.10
Uniform Delay, d1	31.6	31.0		26.1	21.8		36.4	15.7	14.4	36.7	17.5	14.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	5.0		8.4	0.3		4.7	1.1	0.3	164.6	2.9	0.3
Delay (s)	36.6	36.0		34.5	22.1		41.1	16.9	14.8	201.3	20.4	14.7
Level of Service	D	D		C	C		D	B	B	F	C	B
Approach Delay (s)		36.3			31.0			16.1			22.7	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	499	10	640	668	962	0	0	1045	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.6	5.6	5.6	5.2	5.6			5.6	5.6
Lane Util. Factor				0.95	0.91	0.95	0.97	0.95			0.91	1.00
Frt				1.00	0.89	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1681	1495	1504	3433	3539			5085	1583
Flt Permitted				0.95	0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1681	1495	1504	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	542	11	696	726	1046	0	0	1136	598
RTOR Reduction (vph)	0	0	0	0	56	56	0	0	0	0	0	427
Lane Group Flow (vph)	0	0	0	434	355	348	726	1046	0	0	1136	171
Turn Type				Split		Perm	Prot					Perm
Protected Phases				8	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				32.1	32.1	32.1	22.9	56.7			28.6	28.6
Effective Green, g (s)				32.1	32.1	32.1	22.9	56.7			28.6	28.6
Actuated g/C Ratio				0.32	0.32	0.32	0.23	0.57			0.29	0.29
Clearance Time (s)				5.6	5.6	5.6	5.2	5.6			5.6	5.6
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				540	480	483	786	2007			1454	453
v/s Ratio Prot				c0.26	0.24		c0.21	0.30			c0.22	
v/s Ratio Perm						0.23						0.11
v/c Ratio				0.80	0.74	0.72	0.92	0.52			0.78	0.38
Uniform Delay, d1				31.1	30.2	30.0	37.7	13.3			32.8	28.6
Progression Factor				1.00	1.00	1.00	1.26	0.18			1.00	1.00
Incremental Delay, d2				8.5	6.1	5.3	7.8	0.4			4.2	2.4
Delay (s)				39.5	36.3	35.3	55.4	2.7			37.1	31.0
Level of Service				D	D	D	E	A			D	C
Approach Delay (s)		0.0			37.1			24.3			35.0	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	60	499	0	0	0	0	1255	655	570	974	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	5.6					5.6	5.6	5.2	5.6	
Lane Util. Factor	0.95	0.91	0.95					0.95	0.88	0.97	0.95	
Frt	1.00	0.90	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1517	1504					3539	2787	3433	3539	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1517	1504					3539	2787	3433	3539	
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)	408	65	542	0	0	0	0	1364	712	620	1059	0
RTOR Reduction (vph)	0	63	63	0	0	0	0	0	363	0	0	0
Lane Group Flow (vph)	355	277	257	0	0	0	0	1364	349	620	1059	0
Turn Type	Split		Perm						Perm	Prot		
Protected Phases	4	4						2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	28.0	28.0	28.0					38.8	38.8	16.8	60.8	
Effective Green, g (s)	28.0	28.0	28.0					38.8	38.8	16.8	60.8	
Actuated g/C Ratio	0.28	0.28	0.28					0.39	0.39	0.17	0.61	
Clearance Time (s)	5.6	5.6	5.6					5.6	5.6	5.2	5.6	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	471	425	421					1373	1081	577	2152	
v/s Ratio Prot	c0.21	0.18						c0.39		c0.18	0.30	
v/s Ratio Perm			0.17						0.13			
v/c Ratio	0.75	0.65	0.61					0.99	0.32	1.07	0.49	
Uniform Delay, d1	32.9	31.7	31.3					30.5	21.4	41.6	11.0	
Progression Factor	1.00	1.00	1.00					0.48	0.08	0.75	0.74	
Incremental Delay, d2	6.7	3.6	2.5					15.8	0.4	51.7	0.5	
Delay (s)	39.6	35.2	33.8					30.3	2.0	82.8	8.6	
Level of Service	D	D	C					C	A	F	A	
Approach Delay (s)		36.3			0.0			20.6			36.0	
Approach LOS		D			A			C			D	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	450	800	349	40	430	500	393	995	63	190	657	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	4815	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	4815	
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)	489	870	379	43	467	543	427	1082	68	207	714	391
RTOR Reduction (vph)	0	0	197	0	0	142	0	0	24	0	102	0
Lane Group Flow (vph)	489	870	182	43	467	401	427	1082	44	207	1003	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	13.3	38.6	38.6	2.4	27.7	27.7	11.0	32.0	32.0	7.0	28.0	
Effective Green, g (s)	13.3	38.6	38.6	2.4	27.7	27.7	11.0	32.0	32.0	7.0	28.0	
Actuated g/C Ratio	0.13	0.39	0.39	0.02	0.28	0.28	0.11	0.32	0.32	0.07	0.28	
Clearance Time (s)	5.0	5.0	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	3.0	3.0	
Lane Grp Cap (vph)	457	1366	611	82	980	438	378	1627	507	240	1348	
v/s Ratio Prot	c0.14	0.25		0.01	0.13		c0.12	0.21		0.06	c0.21	
v/s Ratio Perm			0.11			c0.25			0.03			
v/c Ratio	1.07	0.64	0.30	0.52	0.48	0.92	1.13	0.67	0.09	0.86	0.74	
Uniform Delay, d1	43.4	25.0	21.3	48.2	30.1	35.0	44.5	29.4	23.8	46.0	32.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.12	
Incremental Delay, d2	62.1	1.0	0.3	5.9	0.4	23.6	86.4	2.2	0.3	22.9	3.3	
Delay (s)	105.4	26.0	21.6	54.2	30.5	58.7	130.9	31.5	24.1	72.0	39.8	
Level of Service	F	C	C	D	C	E	F	C	C	E	D	
Approach Delay (s)		47.4			46.0			58.1			44.9	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	5	43	5	5	5	109	1000	5	80	880	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1723		1770	3537		1770	3396	
Flt Permitted	0.75	1.00	1.00	0.75	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1399	1863	1583	1405	1723		1770	3537		1770	3396	
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)	295	5	47	5	5	5	118	1087	5	87	957	354
RTOR Reduction (vph)	0	0	35	0	4	0	0	0	0	0	38	0
Lane Group Flow (vph)	295	5	12	5	6	0	118	1092	0	87	1273	0
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)	21.6	21.6	21.6	21.6	21.6		7.5	43.8		7.2	43.5	
Effective Green, g (s)	21.6	21.6	21.6	21.6	21.6		7.5	43.8		7.2	43.5	
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26		0.09	0.52		0.09	0.51	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	357	476	404	359	440		157	1831		151	1746	
v/s Ratio Prot		0.00			0.00		c0.07	0.31		0.05	c0.37	
v/s Ratio Perm	c0.21		0.01	0.00								
v/c Ratio	0.83	0.01	0.03	0.01	0.01		0.75	0.60		0.58	0.73	
Uniform Delay, d1	29.7	23.5	23.6	23.5	23.5		37.6	14.2		37.2	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.4	0.0	0.0	0.0	0.0		18.2	1.4		5.2	2.7	
Delay (s)	44.2	23.5	23.7	23.6	23.6		55.8	15.7		42.5	18.7	
Level of Service	D	C	C	C	C		E	B		D	B	
Approach Delay (s)		41.1			23.6			19.6			20.2	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	344	251	281	260	175	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	273	305	283	190	552
RTOR Reduction (vph)	0	198	0	0	0	103
Lane Group Flow (vph)	374	75	305	283	190	449
Turn Type		Perm	Prot			pm+ov
Protected Phases	4		3	8	2	3
Permitted Phases		4				2
Actuated Green, G (s)	16.5	16.5	14.0	35.0	16.4	30.4
Effective Green, g (s)	16.5	16.5	14.0	35.0	16.4	30.4
Actuated g/C Ratio	0.27	0.27	0.23	0.58	0.27	0.50
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	509	432	410	1080	481	915
v/s Ratio Prot	c0.20		c0.17	0.15	0.11	c0.11
v/s Ratio Perm		0.05				0.17
v/c Ratio	0.73	0.17	0.74	0.26	0.40	0.49
Uniform Delay, d1	20.0	16.7	21.5	6.3	18.0	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	0.2	7.2	0.1	2.4	0.4
Delay (s)	25.4	16.9	28.7	6.4	20.4	10.3
Level of Service	C	B	C	A	C	B
Approach Delay (s)	21.8			18.0	12.9	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	18	0	0	222	22	202	112	0	411	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	20	0	0	241	24	220	122	0	447	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	846	836	223	510	714	110	447			341		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	846	836	223	510	714	110	447			341		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	74	98			100		
cM capacity (veh/h)	186	295	780	428	347	923	1110			1214		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	20	241	24	110	110	122	298	149
Volume Left	0	0	24	0	0	0	0	0
Volume Right	20	241	0	0	0	122	0	0
cSH	780	923	1110	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.26	0.02	0.06	0.06	0.07	0.18	0.09
Queue Length 95th (ft)	2	26	2	0	0	0	0	0
Control Delay (s)	9.7	10.3	8.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B	A					
Approach Delay (s)	9.7	10.3	0.5				0.0	
Approach LOS	A	B						

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	810	1374	0	0	1150	373	310	1	430	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.5			5.5	5.5		4.6	4.6			
Lane Util. Factor	0.97	0.91			0.91	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98		1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	3433	5085			5085	1550		1774	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	3433	5085			5085	1550		1774	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	880	1493	0	0	1250	405	337	1	467	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	302	0	0	20	0	0	0
Lane Group Flow (vph)	880	1493	0	0	1250	103	0	338	447	0	0	0
Confl. Peds. (#/hr)						5	10					
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	27.9	58.9			26.8	26.8		36.0	36.0			
Effective Green, g (s)	27.9	58.9			26.8	26.8		36.0	36.0			
Actuated g/C Ratio	0.27	0.56			0.26	0.26		0.34	0.34			
Clearance Time (s)	4.2	5.5			5.5	5.5		4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	912	2852			1298	396		608	543			
v/s Ratio Prot	c0.26	0.29			c0.25			0.19				
v/s Ratio Perm						0.07			c0.28			
v/c Ratio	0.96	0.52			0.96	0.26		0.56	0.82			
Uniform Delay, d1	38.1	14.3			38.6	31.2		28.0	31.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	21.5	0.7			17.6	1.6		3.6	13.3			
Delay (s)	59.6	15.0			56.2	32.8		31.7	44.9			
Level of Service	E	B			E	C		C	D			
Approach Delay (s)		31.5			50.5			39.3			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	1593	120	270	780	410	80	70	330	261	150	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.5	5.5	4.2	5.5	5.5	4.6	4.6	4.6		4.6	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.81	0.81	1.00	1.00	1.00		0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	0.97	0.85	1.00	1.00	0.85		0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	3433	5085	1549	3433	5853	1282	1770	1863	1561		3183	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	3433	5085	1549	3433	5853	1282	1770	1863	1561		3183	
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)	91	1732	130	293	848	446	87	76	359	284	163	457
RTOR Reduction (vph)	0	0	69	0	37	149	0	0	258	0	181	0
Lane Group Flow (vph)	91	1732	61	293	1025	83	87	76	101	0	723	0
Confl. Peds. (#/hr)			8						1			2
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			
Actuated Green, G (s)	6.1	32.8	32.8	12.8	39.5	39.5	14.0	14.0	14.0		31.5	
Effective Green, g (s)	6.1	32.8	32.8	12.8	39.5	39.5	14.0	14.0	14.0		31.5	
Actuated g/C Ratio	0.06	0.30	0.30	0.12	0.36	0.36	0.13	0.13	0.13		0.29	
Clearance Time (s)	4.2	5.5	5.5	4.2	5.5	5.5	4.6	4.6	4.6		4.6	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	190	1516	462	399	2102	460	225	237	199		911	
v/s Ratio Prot	0.03	c0.34		c0.09	0.18		0.05	0.04			c0.23	
v/s Ratio Perm			0.04			0.06			c0.06			
v/c Ratio	0.48	1.14	0.13	0.73	0.49	0.18	0.39	0.32	0.51		0.79	
Uniform Delay, d1	50.4	38.6	28.2	47.0	27.4	24.2	44.1	43.7	44.8		36.3	
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	1.9	72.5	0.6	6.9	0.2	0.2	1.1	0.8	2.0		4.8	
Delay (s)	52.3	111.1	28.8	53.8	27.6	24.4	45.2	44.5	46.8		41.1	
Level of Service	D	F	C	D	C	C	D	D	D		D	
Approach Delay (s)		102.9			31.9			46.2			41.1	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	63.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.9
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	564	881	300	130	352	180	260	965	70	195	758	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.96		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3404		3433	3360		3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3404		3433	3360		3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	613	958	326	141	383	196	283	1049	76	212	824	348
RTOR Reduction (vph)	0	42	0	0	81	0	0	0	54	0	0	55
Lane Group Flow (vph)	613	1242	0	141	498	0	283	1049	22	212	824	293
Turn Type	Prot			Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases									2			6
Actuated Green, G (s)	14.0	28.0		4.0	18.0		8.0	23.0	23.0	5.0	20.0	34.0
Effective Green, g (s)	14.0	28.0		4.0	18.0		8.0	23.0	23.0	5.0	20.0	34.0
Actuated g/C Ratio	0.18	0.35		0.05	0.22		0.10	0.29	0.29	0.06	0.25	0.42
Clearance Time (s)	5.0	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	3.0
Lane Grp Cap (vph)	601	1191		172	756		343	1462	455	215	1271	772
v/s Ratio Prot	c0.18	c0.36		0.04	0.15		c0.08	c0.21		0.06	0.16	0.07
v/s Ratio Perm									0.01			0.12
v/c Ratio	1.02	1.04		0.82	0.66		0.83	0.72	0.05	0.99	0.65	0.38
Uniform Delay, d1	33.0	26.0		37.6	28.2		35.3	25.6	20.6	37.5	26.9	15.8
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	41.8	38.1		25.3	2.1		14.8	3.1	0.2	56.9	2.6	0.3
Delay (s)	74.8	64.1		62.9	30.3		50.1	28.6	20.8	94.4	29.4	16.1
Level of Service	E	E		E	C		D	C	C	F	C	B
Approach Delay (s)		67.5			36.7			32.5			36.0	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	500	15	220	272	95	30	995	230	140	831	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	1.00		1.00	0.96		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3524		1770	3402		1770	4942		1770	4939	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3524		1770	3402		1770	4942		1770	4939	
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)	318	543	16	239	296	103	33	1082	250	152	903	215
RTOR Reduction (vph)	0	2	0	0	39	0	0	35	0	0	36	0
Lane Group Flow (vph)	318	557	0	239	360	0	33	1297	0	152	1082	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	14.0	20.6		14.0	20.6		3.5	32.2		6.0	34.7	
Effective Green, g (s)	14.0	20.6		14.0	20.6		3.5	32.2		6.0	34.7	
Actuated g/C Ratio	0.15	0.22		0.15	0.22		0.04	0.35		0.06	0.37	
Clearance Time (s)	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	
Lane Grp Cap (vph)	267	782		267	755		67	1715		114	1847	
v/s Ratio Prot	c0.18	c0.16		0.14	0.11		0.02	c0.26		c0.09	0.22	
v/s Ratio Perm												
v/c Ratio	1.19	0.71		0.90	0.48		0.49	0.76		1.33	0.59	
Uniform Delay, d1	39.4	33.4		38.7	31.4		43.8	26.8		43.4	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	116.9	3.1		29.3	0.5		5.6	3.2		197.9	1.4	
Delay (s)	156.3	36.4		67.9	31.9		49.4	30.0		241.3	24.7	
Level of Service	F	D		E	C		D	C		F	C	
Approach Delay (s)		79.9			45.4			30.5			50.6	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM Average Control Delay	49.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	22	15	11	17	35	19	1171	11	68	827	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1751		1770	1673		1770	3534		1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1751		1770	1673		1770	3534		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	24	16	12	18	38	21	1273	12	74	899	124
RTOR Reduction (vph)	0	14	0	0	36	0	0	0	0	0	0	55
Lane Group Flow (vph)	60	26	0	12	20	0	21	1285	0	74	899	69
Turn Type	Split			Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	6.1	6.1		4.0	4.0		0.7	33.6		3.3	36.2	36.2
Effective Green, g (s)	6.1	6.1		4.0	4.0		0.7	33.6		3.3	36.2	36.2
Actuated g/C Ratio	0.09	0.09		0.06	0.06		0.01	0.52		0.05	0.56	0.56
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.5
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)	166	164		109	103		19	1827		90	1971	882
v/s Ratio Prot	c0.03	0.01		0.01	c0.01		0.01	c0.36		c0.04	c0.25	
v/s Ratio Perm												0.04
v/c Ratio	0.36	0.16		0.11	0.20		1.11	0.70		0.82	0.46	0.08
Uniform Delay, d1	27.6	27.1		28.8	29.0		32.1	11.9		30.6	8.6	6.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.4		0.4	0.9		242.0	2.3		42.9	0.8	0.2
Delay (s)	29.0	27.5		29.3	29.9		274.2	14.2		73.4	9.3	6.8
Level of Service	C	C		C	C		F	B		E	A	A
Approach Delay (s)		28.4			29.8			18.4			13.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	10	296	22	4	63	336	1000	29	72	503	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3524		1770	3378	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3524		1770	3378	
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)	91	11	322	24	4	68	365	1087	32	78	547	239
RTOR Reduction (vph)	0	0	271	0	0	61	0	2	0	0	43	0
Lane Group Flow (vph)	91	11	51	24	4	7	365	1117	0	78	743	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.9	14.0	14.0	1.6	8.7	8.7	21.7	47.6		6.9	32.8	
Effective Green, g (s)	6.9	14.0	14.0	1.6	8.7	8.7	21.7	47.6		6.9	32.8	
Actuated g/C Ratio	0.08	0.16	0.16	0.02	0.10	0.10	0.25	0.54		0.08	0.37	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	139	296	252	32	184	156	436	1904		139	1258	
v/s Ratio Prot	c0.05	0.01		0.01	0.00		c0.21	c0.32		0.04	0.22	
v/s Ratio Perm			c0.03			0.00						
v/c Ratio	0.65	0.04	0.20	0.75	0.02	0.04	0.84	0.59		0.56	0.59	
Uniform Delay, d1	39.4	31.3	32.2	43.1	35.9	35.9	31.5	13.6		39.1	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	10.6	0.1	0.4	65.2	0.0	0.1	13.1	1.3		5.1	2.0	
Delay (s)	50.0	31.4	32.6	108.2	35.9	36.0	44.6	15.0		44.2	24.3	
Level of Service	D	C	C	F	D	D	D	B		D	C	
Approach Delay (s)		36.3			54.1			22.3			26.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	858	915	267	1104	0	0	0	0	350	0	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	4.2	5.0					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95					0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.96	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
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3374	1456	1687	3374					1603	1603	1509
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3374	1456	1687	3374					1603	1603	1509
Peak-hour factor, PHF	0.92	0.96	0.96	0.83	0.89	0.92	0.92	0.92	0.92	0.89	0.92	0.83
Adj. Flow (vph)	0	894	953	322	1240	0	0	0	0	393	0	130
RTOR Reduction (vph)	0	0	379	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	894	574	322	1240	0	0	0	0	196	197	85
Confl. Peds. (#/hr)			7									
Heavy Vehicles (%)	2%	7%	7%	7%	7%	2%	2%	2%	2%	7%	7%	7%
Turn Type			Perm	Prot						Split		custom
Protected Phases		2		1	6					4	4	4 5
Permitted Phases			2									4
Actuated Green, G (s)		37.6	37.6	18.6	51.5					15.0	15.0	24.5
Effective Green, g (s)		37.6	37.6	18.6	51.5					15.0	15.0	24.5
Actuated g/C Ratio		0.44	0.44	0.22	0.61					0.18	0.18	0.29
Clearance Time (s)		5.0	5.0	4.2	5.0					4.6	4.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1492	644	369	2044					283	283	435
v/s Ratio Prot		0.26		c0.19	0.37					0.12	c0.12	0.06
v/s Ratio Perm			c0.39									
v/c Ratio		0.60	0.89	0.87	0.61					0.69	0.70	0.20
Uniform Delay, d1		18.0	21.8	32.1	10.4					32.8	32.9	22.8
Progression Factor		1.00	1.00	1.18	1.11					1.00	1.00	1.00
Incremental Delay, d2		1.8	17.0	16.4	1.0					7.1	7.3	0.2
Delay (s)		19.8	38.8	54.4	12.7					40.0	40.1	23.0
Level of Service		B	D	D	B					D	D	C
Approach Delay (s)		29.6			21.3			0.0			35.8	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	93.4%	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												
Volume (vph)	179	1029	0	0	772	425	599	5	270	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0			5.0	5.0	4.6	4.6	4.6			
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3273	3374			3374	1485	1603	1609	1509			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3273	3374			3374	1485	1603	1609	1509			
Peak-hour factor, PHF	0.83	0.92	0.92	0.92	0.84	0.94	0.95	0.63	0.86	0.92	0.92	0.92
Adj. Flow (vph)	216	1118	0	0	919	452	631	8	314	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	250	0	0	64	0	0	0
Lane Group Flow (vph)	216	1118	0	0	919	202	322	317	250	0	0	0
Confl. Peds. (#/hr)						3						
Heavy Vehicles (%)	7%	7%	2%	2%	7%	7%	7%	7%	7%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	10.9	53.0			37.9	37.9	22.4	22.4	22.4			
Effective Green, g (s)	10.9	53.0			37.9	37.9	22.4	22.4	22.4			
Actuated g/C Ratio	0.13	0.62			0.45	0.45	0.26	0.26	0.26			
Clearance Time (s)	4.2	5.0			5.0	5.0	4.6	4.6	4.6			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	420	2104			1504	662	422	424	398			
v/s Ratio Prot	0.07	c0.33			c0.27		c0.20	0.20				
v/s Ratio Perm						0.14			0.17			
v/c Ratio	0.51	0.53			0.61	0.30	0.76	0.75	0.63			
Uniform Delay, d1	34.6	9.0			17.9	15.1	28.9	28.7	27.6			
Progression Factor	1.55	0.95			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.8			0.7	0.3	8.0	7.1	3.1			
Delay (s)	54.6	9.4			18.7	15.4	36.8	35.8	30.7			
Level of Service	D	A			B	B	D	D	C			
Approach Delay (s)		16.7			17.6			34.5			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	57	112	199	34	93	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	122	216	37	101	225

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	184	253	326
Volume Left (vph)	62	0	101
Volume Right (vph)	122	37	0
Hadj (s)	-0.30	-0.05	0.10
Departure Headway (s)	5.0	4.7	4.8
Degree Utilization, x	0.25	0.33	0.43
Capacity (veh/h)	658	725	719
Control Delay (s)	9.7	10.1	11.4
Approach Delay (s)	9.7	10.1	11.4
Approach LOS	A	B	B

Intersection Summary			
Delay	10.6		
HCM Level of Service	B		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	190	181	300	13	23	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	197	326	14	25	176

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	207	197	326	14	25	176
Volume Left (vph)	207	0	0	0	25	0
Volume Right (vph)	0	0	0	14	0	176
Hadj (s)	0.53	0.03	0.03	-0.67	0.53	-0.67
Departure Headway (s)	6.0	5.5	5.6	4.9	6.9	5.7
Degree Utilization, x	0.35	0.30	0.51	0.02	0.05	0.28
Capacity (veh/h)	573	628	620	693	486	586
Control Delay (s)	11.0	9.7	13.2	6.8	9.0	9.6
Approach Delay (s)	10.4		12.9		9.5	
Approach LOS	B		B		A	

Intersection Summary			
Delay	11.1		
HCM Level of Service	B		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	570	10	25	290	10	5	10	20	10	20	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.92		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	1858		1770	1863	1583		1706		1770	1612	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (perm)	1770	1858		1770	1863	1583		1706		1770	1612	
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)	200	620	11	27	315	11	5	11	22	11	22	192
RTOR Reduction (vph)	0	1	0	0	0	6	0	17	0	0	150	0
Lane Group Flow (vph)	200	630	0	27	315	5	0	21	0	11	64	0
Turn Type	Prot			Prot		pm+ov	Split			Split		
Protected Phases	5	2		1	6	4	8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	10.0	28.8		1.6	20.4	38.4		18.0		18.0	18.0	
Effective Green, g (s)	10.0	28.8		1.6	20.4	38.4		18.0		18.0	18.0	
Actuated g/C Ratio	0.12	0.35		0.02	0.25	0.47		0.22		0.22	0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	215	649		34	461	815		373		387	352	
v/s Ratio Prot	c0.11	c0.34		0.02	0.17	0.00		c0.01		0.01	c0.04	
v/s Ratio Perm						0.00						
v/c Ratio	0.93	0.97		0.79	0.68	0.01		0.06		0.03	0.18	
Uniform Delay, d1	35.9	26.4		40.2	28.1	11.8		25.5		25.3	26.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	42.3	28.9		75.1	8.0	0.0		0.3		0.1	1.1	
Delay (s)	78.1	55.3		115.3	36.1	11.8		25.8		25.5	27.3	
Level of Service	E	E		F	D	B		C		C	C	
Approach Delay (s)		60.8			41.4			25.8			27.2	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	79	40	355	152	30	610
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	43	386	165	33	663
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			129		1045	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			129		1045	108
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			74		82	30
cM capacity (veh/h)			1456		186	946

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	129	551	696
Volume Left	0	386	33
Volume Right	43	0	663
cSH	1700	1456	794
Volume to Capacity	0.08	0.26	0.88
Queue Length 95th (ft)	0	27	278
Control Delay (s)	0.0	6.6	32.2
Lane LOS		A	D
Approach Delay (s)	0.0	6.6	32.2
Approach LOS			D

Intersection Summary			
Average Delay	18.9		
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	91	4	166	160	107	1	493	377	25	199	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1852		1770	1751		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1852		1770	1751		1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	99	4	180	174	116	1	536	410	27	216	143
RTOR Reduction (vph)	0	2	0	0	28	0	0	0	188	0	0	72
Lane Group Flow (vph)	98	101	0	180	262	0	1	536	222	27	216	71
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	6.4	10.1		12.3	16.0		0.7	39.3	39.3	1.5	40.1	40.1
Effective Green, g (s)	6.4	10.1		12.3	16.0		0.7	39.3	39.3	1.5	40.1	40.1
Actuated g/C Ratio	0.08	0.12		0.15	0.20		0.01	0.48	0.48	0.02	0.49	0.49
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	140	230		268	345		15	902	766	33	920	782
v/s Ratio Prot	0.06	0.05		c0.10	c0.15		0.00	c0.29		c0.02	0.12	
v/s Ratio Perm									0.14			0.04
v/c Ratio	0.70	0.44		0.67	0.76		0.07	0.59	0.29	0.82	0.23	0.09
Uniform Delay, d1	36.5	32.9		32.5	30.8		39.9	15.2	12.6	39.7	11.8	10.9
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	14.2	1.3		6.5	9.2		1.9	2.9	1.0	84.2	0.6	0.2
Delay (s)	50.7	34.3		39.0	40.0		41.8	18.1	13.5	123.9	12.4	11.1
Level of Service	D	C		D	D		D	B	B	F	B	B
Approach Delay (s)		42.3			39.6			16.1			19.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group