Appendix 8
Detailed Traffic Operations Analysis Results

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	526	85	132	487	81	62	167	121	61	139	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.5	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	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1780	1814		1805	1809		1767	1754		1752	1864	
Flt Permitted	0.95	1.00		0.95	1.00		0.60	1.00		0.29	1.00	
Satd. Flow (perm)	1780	1814		1805	1809		1108	1754		537	1864	
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)	7	554	89	139	513	85	65	176	127	64	146	11
RTOR Reduction (vph)	0	5	0	0	3	0	0	22	0	0	2	0
Lane Group Flow (vph)	7	638	0	139	595	0	65	281	0	64	155	0
Confl. Peds. (#/hr)	15					15	1					1
Confl. Bikes (#/hr)		20	1		17			3	1			
Heavy Vehicles (%)	0%	2%	4%	0%	2%	2%	2%	1%	0%	3%	0%	10%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	0.8	38.6		12.1	49.9		17.0	17.0		17.0	17.0	
Effective Green, g (s)	0.8	38.6		12.1	49.9		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.01	0.48		0.15	0.62		0.21	0.21		0.21	0.21	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	3.0		2.5	3.0		0.5	0.5		2.5	2.5	
Lane Grp Cap (vph)	18	868		271	1119		233	369		113	393	
v/s Ratio Prot	0.00	c0.35		c0.08	0.33			c0.16			0.08	
v/s Ratio Perm							0.06			0.12		
v/c Ratio	0.39	0.74		0.51	0.53		0.28	0.76		0.57	0.39	
Uniform Delay, d1	39.7	16.9		31.6	8.8		26.7	29.9		28.5	27.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.8	3.3		1.2	0.5		0.2	8.1		5.2	0.5	
Delay (s)	49.5	20.2		32.8	9.2		26.9	38.0		33.7	27.9	
Level of Service	D	C		C	A		C	D		C	C	
Approach Delay (s)		20.5			13.7			36.1			29.6	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	75.1%	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												
Volume (vph)	45	665	54	85	628	81	49	100	74	45	90	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.98			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Frt	1.00	0.99		1.00	0.98			0.96			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1687	1836		1770	1817			1714			1710	
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.83	
Satd. Flow (perm)	1687	1836		1770	1817			1551			1447	
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)	47	693	56	89	654	84	51	104	77	47	94	36
RTOR Reduction (vph)	0	2	0	0	3	0	0	14	0	0	7	0
Lane Group Flow (vph)	47	747	0	89	735	0	0	218	0	0	170	0
Confl. Peds. (#/hr)	22		19	19		22	3		15	15		3
Confl. Bikes (#/hr)		5			1			2				
Heavy Vehicles (%)	7%	2%	0%	2%	2%	2%	4%	4%	0%	4%	6%	6%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	4.7	43.3		8.1	46.7			19.4			19.4	
Effective Green, g (s)	4.7	43.3		8.1	46.7			19.4			19.4	
Actuated g/C Ratio	0.06	0.52		0.10	0.56			0.23			0.23	
Clearance Time (s)	4.0	4.5		4.0	4.5			4.5			4.5	
Vehicle Extension (s)	2.5	3.0		2.5	4.0			2.5			2.5	
Lane Grp Cap (vph)	95	949		171	1013			359			335	
v/s Ratio Prot	0.03	c0.41		c0.05	c0.40							
v/s Ratio Perm								c0.14			0.12	
v/c Ratio	0.49	0.79		0.52	0.73			0.61			0.51	
Uniform Delay, d1	38.4	16.5		36.0	13.8			28.8			28.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.9	4.4		2.2	2.8			2.5			0.9	
Delay (s)	41.3	20.9		38.2	16.6			31.2			28.9	
Level of Service	D	C		D	B			C			C	
Approach Delay (s)		22.1			18.9			31.2			28.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	17.5
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	739	15	36	622	43	35	13	115	101	11	103
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	68	795	16	39	669	46	38	14	124	109	12	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									3			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)					503							
pX, platoon unblocked												
vC, conflicting volume	715			811			1467	1731	803	1706	1716	358
vC1, stage 1 conf vol							938	938		769	769	
vC2, stage 2 conf vol							528	792		937	946	
vCu, unblocked vol	715			811			1467	1731	803	1706	1716	358
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			95			82	94	62	3	95	83
cM capacity (veh/h)	895			786			209	232	327	112	233	645

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	68	811	39	446	269	175	120	111
Volume Left	68	0	39	0	0	38	109	0
Volume Right	0	16	0	0	46	124	0	111
cSH	895	1700	786	1700	1700	463	118	645
Volume to Capacity	0.08	0.48	0.05	0.26	0.16	0.38	1.02	0.17
Queue Length 95th (ft)	6	0	4	0	0	44	172	15
Control Delay (s)	9.4	0.0	9.8	0.0	0.0	23.9	158.3	11.7
Lane LOS	A		A			C	F	B
Approach Delay (s)	0.7		0.5			23.9	88.1	
Approach LOS						C	F	

Intersection Summary				
Average Delay	12.5			
Intersection Capacity Utilization	66.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	623	151	406	535	196	238	755	395	307	781	79
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	5.0	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	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	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1577	3467	3368		1770	3505	1553	1770	3539	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1577	3467	3368		1770	3505	1553	1770	3539	1615
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)	133	663	161	432	569	209	253	803	420	327	831	84
RTOR Reduction (vph)	0	0	77	0	26	0	0	0	270	0	0	39
Lane Group Flow (vph)	133	663	84	432	752	0	253	803	150	327	831	45
Confl. Peds. (#/hr)	2		1	1		2			4	4		
Confl. Bikes (#/hr)					1			2				
Heavy Vehicles (%)	2%	2%	1%	1%	3%	1%	2%	3%	2%	2%	2%	0%
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	14.4	44.0	44.0	20.0	49.6		12.5	27.5	27.5	20.0	35.5	35.5
Effective Green, g (s)	14.4	44.0	44.0	20.0	49.6		12.5	27.5	27.5	20.0	35.5	35.5
Actuated g/C Ratio	0.11	0.34	0.34	0.15	0.38		0.10	0.21	0.21	0.15	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	5.0	4.5	4.5
Vehicle Extension (s)	2.3	4.3	4.3	2.3	4.3		2.3	4.3	4.3	2.3	2.3	2.3
Lane Grp Cap (vph)	196	1198	534	533	1285		170	741	329	272	966	441
v/s Ratio Prot	0.08	0.19		c0.12	c0.22		c0.14	c0.23		c0.18	0.23	
v/s Ratio Perm			0.05						0.10			0.03
v/c Ratio	0.68	0.55	0.16	0.81	0.59		1.49	1.08	0.46	1.20	0.86	0.10
Uniform Delay, d1	55.6	35.0	30.1	53.2	32.0		58.8	51.2	44.7	55.0	44.9	35.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.28	0.50	0.85	1.00	1.00	1.00
Incremental Delay, d2	7.8	1.8	0.6	8.8	2.0		245.4	56.4	4.0	120.7	9.9	0.5
Delay (s)	63.3	36.8	30.7	61.9	34.0		320.5	81.8	42.1	175.7	54.8	35.8
Level of Service	E	D	C	E	C		F	F	D	F	D	D
Approach Delay (s)		39.5			44.0			111.4			85.3	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM Average Control Delay	74.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1353	26	0	1368	58	0	0	69	51	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5				5.5		3.0	
Lane Util. Factor		0.91			0.95				1.00		1.00	
Frpb, ped/bikes		1.00			1.00				1.00		1.00	
Flpb, ped/bikes		1.00			1.00				1.00		1.00	
Frt		1.00			0.99				0.86		0.96	
Flt Protected		1.00			1.00				1.00		0.97	
Satd. Flow (prot)		5066			3514				1644		1641	
Flt Permitted		1.00			1.00				1.00		0.97	
Satd. Flow (perm)		5066			3514				1644		1641	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1395	27	0	1410	60	0	0	71	53	0	25
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	67	0	13	0
Lane Group Flow (vph)	0	1421	0	0	1469	0	0	0	4	0	65	0
Confl. Peds. (#/hr)	2		4	4		2	3					3
Confl. Bikes (#/hr)		3			2							
Heavy Vehicles (%)	0%	2%	4%	0%	2%	2%	0%	0%	0%	6%	0%	8%
Turn Type									custom	Split		
Protected Phases		2			6					4	4	
Permitted Phases									8			
Actuated Green, G (s)		60.6			60.6				4.4		6.9	
Effective Green, g (s)		60.6			60.6				4.4		6.9	
Actuated g/C Ratio		0.81			0.81				0.06		0.09	
Clearance Time (s)		4.5			4.5				5.5		3.0	
Vehicle Extension (s)		4.0			4.0				2.5		0.2	
Lane Grp Cap (vph)		4093			2839				96		151	
v/s Ratio Prot		0.28			c0.42						c0.04	
v/s Ratio Perm									0.00			
v/c Ratio		0.35			0.52				0.04		0.43	
Uniform Delay, d1		1.9			2.4				33.3		32.2	
Progression Factor		1.00			1.00				1.00		1.00	
Incremental Delay, d2		0.2			0.7				0.1		0.7	
Delay (s)		2.2			3.1				33.4		32.9	
Level of Service		A			A				C		C	
Approach Delay (s)		2.2			3.1			33.4			32.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	52.7%	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	990	494	135	593	0	0	0	0	273	0	788
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0	4.0	4.5					5.0		5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1583	1787	3574					1805		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1583	1787	3574					1805		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1031	515	141	618	0	0	0	0	284	0	821
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	426
Lane Group Flow (vph)	0	1031	515	141	618	0	0	0	0	284	0	395
Heavy Vehicles (%)	0%	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%	2%
Turn Type			Free	Prot						Prot		custom
Protected Phases		2		1	6					4		5
Permitted Phases			Free									
Actuated Green, G (s)		53.7	100.0	12.5	39.1					20.3		26.1
Effective Green, g (s)		53.7	100.0	12.5	39.1					20.3		26.1
Actuated g/C Ratio		0.54	1.00	0.12	0.39					0.20		0.26
Clearance Time (s)		4.5		4.0	4.5					5.0		5.0
Vehicle Extension (s)		5.5		2.3	5.5					2.3		2.3
Lane Grp Cap (vph)		1900	1583	223	1397					366		413
v/s Ratio Prot		c0.29		c0.08	0.17					c0.16		c0.25
v/s Ratio Perm			0.33									
v/c Ratio		0.54	0.33	0.63	0.44					0.78		0.96
Uniform Delay, d1		15.1	0.0	41.6	22.4					37.7		36.4
Progression Factor		1.00	1.00	1.50	0.79					1.00		1.00
Incremental Delay, d2		1.1	0.5	4.6	1.0					9.3		32.9
Delay (s)		16.2	0.5	67.2	18.7					47.0		69.3
Level of Service		B	A	E	B					D		E
Approach Delay (s)		11.0			27.7			0.0			63.6	
Approach LOS		B			C			A			E	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	582	712	163	360	438	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.0	4.5	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	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)	3610	1583	1770	3574	3502	1561
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1583	1770	3574	3502	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	619	757	173	383	466	201
RTOR Reduction (vph)	0	391	0	0	0	164
Lane Group Flow (vph)	619	366	173	383	466	37
Confl. Peds. (#/hr)						2
Heavy Vehicles (%)	0%	2%	2%	1%	0%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	48.3	48.3	20.0	72.3	18.2	18.2
Effective Green, g (s)	48.3	48.3	20.0	72.3	18.2	18.2
Actuated g/C Ratio	0.48	0.48	0.20	0.72	0.18	0.18
Clearance Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
Vehicle Extension (s)	5.5	5.5	2.3	5.5	2.3	2.3
Lane Grp Cap (vph)	1744	765	354	2584	637	284
v/s Ratio Prot	0.17		c0.10	0.11	c0.13	
v/s Ratio Perm		c0.23				0.02
v/c Ratio	0.35	0.48	0.49	0.15	0.73	0.13
Uniform Delay, d1	16.1	17.4	35.5	4.3	38.6	34.3
Progression Factor	0.65	2.41	1.22	1.66	1.00	1.00
Incremental Delay, d2	0.5	1.8	0.6	0.1	3.9	0.1
Delay (s)	11.0	43.8	43.7	7.3	42.5	34.4
Level of Service	B	D	D	A	D	C
Approach Delay (s)	29.0			18.6	40.1	
Approach LOS	C			B	D	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.2%	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)	283	211	315	27	83	16	172	304	44	29	267	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.2		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
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	0.91		1.00	0.98		1.00	0.98		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)	1787	3286		1805	3510		1787	1848		1805	1881	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3286		1805	3510		1787	1848		1805	1881	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)	308	229	342	29	90	17	187	330	48	32	290	186
RTOR Reduction (vph)	0	187	0	0	15	0	0	5	0	0	0	128
Lane Group Flow (vph)	308	384	0	29	92	0	187	373	0	32	290	58
Confl. Peds. (#/hr)	3					3	1					1
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type	Prot			Prot			Prot			Prot		Prot
Protected Phases	5	2		1	6		3	8		7	4	4
Permitted Phases												
Actuated Green, G (s)	38.1	45.3		4.8	12.3		14.2	27.9		5.0	18.7	18.7
Effective Green, g (s)	38.1	45.3		4.8	12.3		14.2	27.9		5.0	18.7	18.7
Actuated g/C Ratio	0.38	0.45		0.05	0.12		0.14	0.28		0.05	0.19	0.19
Clearance Time (s)	4.0	4.5		4.0	4.2		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	681	1489		87	432		254	516		90	352	296
v/s Ratio Prot	c0.17	c0.12		0.02	0.03		c0.10	0.20		0.02	c0.15	0.04
v/s Ratio Perm												
v/c Ratio	0.45	0.26		0.33	0.21		0.74	0.72		0.36	0.82	0.19
Uniform Delay, d1	23.1	16.9		46.1	39.5		41.1	32.6		45.9	39.1	34.3
Progression Factor	0.53	0.12		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.4		2.3	1.1		10.6	5.0		2.4	14.4	0.3
Delay (s)	14.4	2.4		48.3	40.6		51.7	37.5		48.3	53.5	34.6
Level of Service	B	A		D	D		D	D		D	D	C
Approach Delay (s)		6.6			42.3			42.2			46.2	
Approach LOS		A			D			D			D	

Intersection Summary					
HCM Average Control Delay	28.2	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.54				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		12.5	
Intersection Capacity Utilization	58.0%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	22	31	131	23	80	56	1123	54	99	1103	21
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	4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.97	1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1719			1802	1545	1805	3539	1528	1787	3526	
Flt Permitted		0.57			0.66	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1013			1234	1545	1805	3539	1528	1787	3526	
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)	80	23	33	138	24	84	59	1182	57	104	1161	22
RTOR Reduction (vph)	0	9	0	0	0	68	0	0	12	0	1	0
Lane Group Flow (vph)	0	127	0	0	162	16	59	1182	45	104	1182	0
Confl. Peds. (#/hr)	13		3	3		13	15		9	9		15
Heavy Vehicles (%)	3%	0%	3%	1%	0%	1%	0%	2%	0%	1%	2%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			
Actuated Green, G (s)		25.5			25.5	25.5	7.7	80.0	80.0	11.5	83.8	
Effective Green, g (s)		25.5			25.5	25.5	7.7	80.0	80.0	11.5	83.8	
Actuated g/C Ratio		0.20			0.20	0.20	0.06	0.62	0.62	0.09	0.64	
Clearance Time (s)		4.5			4.5	4.5	4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)		4.2			4.2	4.2	2.3	4.2	4.2	2.3	4.2	
Lane Grp Cap (vph)		199			242	303	107	2178	940	158	2273	
v/s Ratio Prot							0.03	c0.33		c0.06	c0.34	
v/s Ratio Perm		0.13			c0.13	0.01			0.03			
v/c Ratio		0.64			0.67	0.05	0.55	0.54	0.05	0.66	0.52	
Uniform Delay, d1		48.0			48.3	42.5	59.5	14.4	9.9	57.3	12.3	
Progression Factor		1.00			1.00	1.00	0.81	1.97	2.00	0.63	1.62	
Incremental Delay, d2		14.7			13.8	0.3	3.6	0.8	0.1	5.2	0.5	
Delay (s)		62.7			62.1	42.8	52.0	29.2	19.9	41.5	20.6	
Level of Service		E			E	D	D	C	B	D	C	
Approach Delay (s)		62.7			55.5			29.9			22.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	3	11	233	3	92	5	1175	108	147	1059	12
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	4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.98			1.00	0.97	1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes		1.00			0.98	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.90			1.00	0.85	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)		1660			1756	1553	1805	3539	1529	1770	3532	
Flt Permitted		0.99			0.72	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1643			1322	1553	1805	3539	1529	1770	3532	
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)	1	3	12	245	3	97	5	1237	114	155	1115	13
RTOR Reduction (vph)	0	10	0	0	0	79	0	0	23	0	1	0
Lane Group Flow (vph)	0	6	0	0	248	18	5	1237	91	155	1127	0
Confl. Peds. (#/hr)	8		13	13		8	9		10	10		9
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	0%	2%	2%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			
Actuated Green, G (s)		24.5			24.5	24.5	1.2	77.1	77.1	15.4	91.3	
Effective Green, g (s)		24.5			24.5	24.5	1.2	77.1	77.1	15.4	91.3	
Actuated g/C Ratio		0.19			0.19	0.19	0.01	0.59	0.59	0.12	0.70	
Clearance Time (s)		4.5			4.5	4.5	4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.2	4.2	2.3	4.2	
Lane Grp Cap (vph)		310			249	293	17	2099	907	210	2481	
v/s Ratio Prot							0.00	c0.35		c0.09	0.32	
v/s Ratio Perm		0.00			c0.19	0.01			0.06			
v/c Ratio		0.02			1.00	0.06	0.29	0.59	0.10	0.74	0.45	
Uniform Delay, d1		43.0			52.7	43.3	64.0	16.5	11.4	55.4	8.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.96	1.79	
Incremental Delay, d2		0.0			55.6	0.1	5.6	1.2	0.2	10.1	0.5	
Delay (s)		43.0			108.3	43.4	69.5	17.8	11.7	63.3	15.7	
Level of Service		D			F	D	E	B	B	E	B	
Approach Delay (s)		43.0			90.0			17.4			21.4	
Approach LOS		D			F			B			C	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.2%	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												
Volume (vph)	19	160	66	48	131	54	110	51	77	90	35	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.8	4.8	4.8		4.8	
Lane Util. Factor	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	0.99		1.00	1.00	0.97		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1621	1793		1802	1773		1785	1863	1567		1750	
Flt Permitted	0.80	1.00		0.80	1.00		0.64	1.00	1.00		0.80	
Satd. Flow (perm)	1365	1793		1517	1773		1203	1863	1567		1440	
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)	21	178	73	53	146	60	122	57	86	100	39	47
RTOR Reduction (vph)	0	30	0	0	30	0	0	0	53	0	26	0
Lane Group Flow (vph)	21	221	0	53	176	0	122	57	33	0	160	0
Confl. Peds. (#/hr)	7		4	4		7	3		17	17		3
Confl. Bikes (#/hr)		1						1			1	
Heavy Vehicles (%)	11%	1%	0%	0%	2%	0%	1%	2%	0%	1%	0%	2%
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	5.0	5.0		5.0	5.0		8.7	8.7	8.7		8.7	
Effective Green, g (s)	5.0	5.0		5.0	5.0		8.7	8.7	8.7		8.7	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.39	0.39	0.39		0.39	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.8	4.8	4.8		4.8	
Vehicle Extension (s)	0.7	0.7		0.7	0.7		1.0	1.0	1.0		1.0	
Lane Grp Cap (vph)	303	398		337	394		465	720	606		557	
v/s Ratio Prot		c0.12			0.10			0.03				
v/s Ratio Perm	0.02			0.03			0.10		0.02		c0.11	
v/c Ratio	0.07	0.56		0.16	0.45		0.26	0.08	0.05		0.29	
Uniform Delay, d1	6.9	7.8		7.1	7.6		4.7	4.4	4.3		4.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.0		0.1	0.3		0.1	0.0	0.0		0.1	
Delay (s)	6.9	8.7		7.1	7.9		4.8	4.4	4.3		4.9	
Level of Service	A	A		A	A		A	A	A		A	
Approach Delay (s)		8.6			7.7			4.6			4.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	22.5	Sum of lost time (s)	8.8
Intersection Capacity Utilization	45.1%	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)	67	164	119	41	74	70	112	378	46	168	342	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.7		4.0	4.8		4.0	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	0.93		1.00	0.98		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)	1805	1881	1615	1770	1669		1787	1845		1787	1827	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1881	1615	1770	1669		1787	1845		1787	1827	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	72	176	128	44	80	75	120	406	49	181	368	87
RTOR Reduction (vph)	0	0	103	0	29	0	0	3	0	0	5	0
Lane Group Flow (vph)	72	176	25	44	126	0	120	452	0	181	450	0
Confl. Peds. (#/hr)	1		2	2		1			1	1		
Heavy Vehicles (%)	0%	1%	0%	2%	3%	6%	1%	1%	2%	1%	1%	1%
Turn Type	Prot		Prot	Prot			Prot			Prot		
Protected Phases	3	8	8	7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	7.0	15.9	15.9	4.4	13.4		11.2	27.8		14.2	31.1	
Effective Green, g (s)	7.0	15.9	15.9	4.4	13.4		11.2	27.8		14.2	31.1	
Actuated g/C Ratio	0.09	0.20	0.20	0.06	0.17		0.14	0.35		0.18	0.39	
Clearance Time (s)	4.0	4.8	4.8	4.0	4.7		4.0	4.8		4.0	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	158	374	321	97	280		250	642		318	711	
v/s Ratio Prot	c0.04	c0.09	0.02	0.02	0.08		0.07	c0.25		c0.10	c0.25	
v/s Ratio Perm												
v/c Ratio	0.46	0.47	0.08	0.45	0.45		0.48	0.70		0.57	0.63	
Uniform Delay, d1	34.6	28.3	26.0	36.6	29.9		31.7	22.5		30.1	19.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.7	0.1	2.4	0.8		1.1	3.8		1.9	2.1	
Delay (s)	36.2	29.0	26.1	39.0	30.8		32.7	26.3		31.9	21.8	
Level of Service	D	C	C	D	C		C	C		C	C	
Approach Delay (s)		29.4			32.6			27.6			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	22.1
Intersection Capacity Utilization	59.3%	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)	261	51	183	28	25	34	209	1072	11	39	947	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor		0.95			0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.98			0.99		1.00	1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes		0.99			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94			0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3146			3290		1752	3539	1566	1805	3539	1599
Flt Permitted		0.76			0.69		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		2468			2313		1752	3539	1566	1805	3539	1599
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)	275	54	193	29	26	36	220	1128	12	41	997	367
RTOR Reduction (vph)	0	70	0	0	28	0	0	0	3	0	0	76
Lane Group Flow (vph)	0	452	0	0	63	0	220	1128	9	41	997	291
Confl. Peds. (#/hr)	14		21	21		14	14		9	9		14
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	0%	5%	0%	0%	0%	3%	2%	0%	0%	2%	1%
Turn Type	Perm			Perm			Prot		Perm	Prot		Prot
Protected Phases		8			4		1	6		5	2	2
Permitted Phases	8			4					6			
Actuated Green, G (s)		28.2			28.2		20.2	82.1	82.1	6.7	68.6	68.6
Effective Green, g (s)		28.2			28.2		20.2	82.1	82.1	6.7	68.6	68.6
Actuated g/C Ratio		0.22			0.22		0.16	0.63	0.63	0.05	0.53	0.53
Clearance Time (s)		4.5			4.5		4.0	4.5	4.5	4.0	4.5	4.5
Vehicle Extension (s)		2.5			2.5		2.3	4.2	4.2	2.3	4.2	4.2
Lane Grp Cap (vph)		535			502		272	2235	989	93	1868	844
v/s Ratio Prot							c0.13	0.32		0.02	c0.28	0.18
v/s Ratio Perm		c0.18			0.03				0.01			
v/c Ratio		0.85			0.13		0.81	0.50	0.01	0.44	0.53	0.35
Uniform Delay, d1		48.8			41.0		53.0	13.0	8.9	59.8	20.2	17.7
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		11.6			0.1		15.5	0.8	0.0	1.9	1.1	1.1
Delay (s)		60.4			41.1		68.5	13.8	8.9	61.8	21.3	18.9
Level of Service		E			D		E	B	A	E	C	B
Approach Delay (s)		60.4			41.1			22.6			21.8	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	454	93	79	415	16	38	2	41	17	8	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	504	103	88	461	18	42	2	46	19	9	27
Pedestrians		1			2						7	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					191							
pX, platoon unblocked												
vC, conflicting volume	486			608			1001	1224	306	960	1267	247
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	486			608			1001	1224	306	960	1267	247
tC, single (s)	4.1			4.1			7.6	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			75	99	93	90	94	96
cM capacity (veh/h)	1081			980			167	163	695	182	154	754

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	256	356	318	248	90	54
Volume Left	3	0	88	0	42	19
Volume Right	0	103	0	18	46	27
cSH	1081	1700	980	1700	271	276
Volume to Capacity	0.00	0.21	0.09	0.15	0.33	0.20
Queue Length 95th (ft)	0	0	7	0	35	18
Control Delay (s)	0.1	0.0	3.2	0.0	24.8	21.2
Lane LOS	A		A		C	C
Approach Delay (s)	0.1		1.8		24.8	21.2
Approach LOS					C	C

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	47.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	140	458	339	75	79	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		4.5	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.98		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1787	1845	1801		1677	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1787	1845	1801		1677	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	498	368	82	86	121
RTOR Reduction (vph)	0	0	7	0	46	0
Lane Group Flow (vph)	152	498	443	0	161	0
Confl. Peds. (#/hr)	5			5	12	
Confl. Bikes (#/hr)	1					
Heavy Vehicles (%)	1%	3%	2%	4%	4%	1%
Turn Type	Prot					
Protected Phases	5	2	6		4	
Permitted Phases						
Actuated Green, G (s)	11.0	37.0	22.0		11.5	
Effective Green, g (s)	11.0	37.0	22.0		11.5	
Actuated g/C Ratio	0.19	0.64	0.38		0.20	
Clearance Time (s)	4.0	5.0	5.0		4.5	
Vehicle Extension (s)	2.5	3.0	3.0		2.5	
Lane Grp Cap (vph)	339	1177	683		333	
v/s Ratio Prot	0.09	c0.27	c0.25		c0.10	
v/s Ratio Perm						
v/c Ratio	0.45	0.42	0.65		0.48	
Uniform Delay, d1	20.8	5.2	14.8		20.6	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.2	2.1		0.8	
Delay (s)	21.5	5.5	17.0		21.4	
Level of Service	C	A	B		C	
Approach Delay (s)		9.2	17.0		21.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	52.7%	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)	132	115	93	137	95	108	88	992	84	125	824	48
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	4.5	4.5	4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00	0.92	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	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1704		1752	1881	1528	1805	3539	1486	1770	3473	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	1704		1752	1881	1528	1805	3539	1486	1770	3473	
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)	138	120	97	143	99	112	92	1033	88	130	858	50
RTOR Reduction (vph)	0	24	0	0	0	95	0	0	35	0	3	0
Lane Group Flow (vph)	138	193	0	143	99	17	92	1033	53	130	905	0
Confl. Peds. (#/hr)	3		19	19		3	7		17	17		7
Confl. Bikes (#/hr)								1			1	
Heavy Vehicles (%)	3%	3%	1%	3%	1%	4%	0%	2%	0%	2%	3%	0%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	14.1	19.2		14.3	19.4	19.4	11.0	64.0	64.0	16.0	69.0	
Effective Green, g (s)	14.1	19.2		14.3	19.4	19.4	11.0	64.0	64.0	16.0	69.0	
Actuated g/C Ratio	0.11	0.15		0.11	0.15	0.15	0.08	0.49	0.49	0.12	0.53	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	5.1	5.1	2.3	5.1	
Lane Grp Cap (vph)	190	252		193	281	228	153	1742	732	218	1843	
v/s Ratio Prot	0.08	c0.11		c0.08	0.05		0.05	c0.29		c0.07	0.26	
v/s Ratio Perm						0.01			0.04			
v/c Ratio	0.73	0.77		0.74	0.35	0.07	0.60	0.59	0.07	0.60	0.49	
Uniform Delay, d1	56.1	53.2		56.1	49.7	47.6	57.4	23.7	17.4	53.9	19.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.31	0.91	1.46	1.00	1.00	
Incremental Delay, d2	11.7	12.2		13.1	0.4	0.1	4.7	1.4	0.2	3.3	0.9	
Delay (s)	67.8	65.5		69.2	50.1	47.6	80.0	22.9	25.5	57.3	20.3	
Level of Service	E	E		E	D	D	F	C	C	E	C	
Approach Delay (s)		66.4			57.0			27.4			24.9	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	0	16	165	0	175	0	1020	168	142	896	0
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		6.0	6.0	4.0	5.0	
Lane Util. Factor		1.00		1.00		1.00		0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.98		1.00		1.00		1.00	0.96	1.00	1.00	
Flpb, ped/bikes		1.00		1.00		1.00		1.00	1.00	1.00	1.00	
Frt		0.87		1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1618		1770		1599		3539	1538	1752	3505	
Flt Permitted		1.00		0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1618		1770		1599		3539	1538	1752	3505	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	0	16	170	0	180	0	1052	173	146	924	0
RTOR Reduction (vph)	0	14	0	0	0	156	0	0	30	0	0	0
Lane Group Flow (vph)	0	3	0	170	0	24	0	1052	143	146	924	0
Confl. Peds. (#/hr)	2		8	8		2	5		6	6		5
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	1%	0%	2%	1%	3%	3%	0%
Turn Type	Perm			Prot		custom			Perm	Prot		
Protected Phases		4!		4!		4		6		5	2	
Permitted Phases	4					4			6			
Actuated Green, G (s)		17.1		17.1		17.1		83.5	83.5	15.4	103.9	
Effective Green, g (s)		17.1		17.1		17.1		83.5	83.5	15.4	103.9	
Actuated g/C Ratio		0.13		0.13		0.13		0.64	0.64	0.12	0.80	
Clearance Time (s)		4.0		4.0		4.0		6.0	6.0	4.0	5.0	
Vehicle Extension (s)		2.3		2.3		2.3		4.5	4.5	2.3	4.5	
Lane Grp Cap (vph)		213		233		210		2273	988	208	2801	
v/s Ratio Prot				c0.10		0.01		c0.30		c0.08	0.26	
v/s Ratio Perm		0.00							0.09			
v/c Ratio		0.01		0.73		0.11		0.46	0.15	0.70	0.33	
Uniform Delay, d1		49.1		54.2		49.8		11.8	9.2	55.1	3.6	
Progression Factor		1.00		1.00		1.00		0.22	0.08	0.90	1.07	
Incremental Delay, d2		0.0		9.9		0.1		0.5	0.2	7.9	0.3	
Delay (s)		49.1		64.1		49.9		3.2	1.0	57.3	4.1	
Level of Service		D		E		D		A	A	E	A	
Approach Delay (s)		49.1			56.8			2.9			11.3	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	531	343	182	417	163	262	862	189	210	799	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.8	4.8	4.0	5.4	5.4	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1559	1787	3610	1575	1805	3539	1570	1805	3505	1570
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1559	1787	3610	1575	1805	3539	1570	1805	3505	1570
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)	209	565	365	194	444	173	279	917	201	223	850	157
RTOR Reduction (vph)	0	0	252	0	0	140	0	0	47	0	0	52
Lane Group Flow (vph)	209	565	113	194	444	33	279	917	154	223	850	105
Confl. Peds. (#/hr)	2		12	12		2	3		4	4		3
Confl. Bikes (#/hr)		1			1			1				
Heavy Vehicles (%)	0%	0%	1%	1%	0%	1%	0%	2%	1%	0%	3%	0%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	17.2	25.5	25.5	16.7	25.0	25.0	27.7	48.9	48.9	20.7	41.9	41.9
Effective Green, g (s)	17.2	25.5	25.5	16.7	25.0	25.0	27.7	48.9	48.9	20.7	41.9	41.9
Actuated g/C Ratio	0.13	0.20	0.20	0.13	0.19	0.19	0.21	0.38	0.38	0.16	0.32	0.32
Clearance Time (s)	4.0	4.8	4.8	4.0	4.8	4.8	4.0	5.4	5.4	4.0	5.4	5.4
Vehicle Extension (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	4.9	4.9	2.3	4.9	4.9
Lane Grp Cap (vph)	239	708	306	230	694	303	385	1331	591	287	1130	506
v/s Ratio Prot	c0.12	c0.16		0.11	0.12		c0.15	0.26		0.12	c0.24	
v/s Ratio Perm			0.07			0.02			0.10			0.07
v/c Ratio	0.87	0.80	0.37	0.84	0.64	0.11	0.72	0.69	0.26	0.78	0.75	0.21
Uniform Delay, d1	55.3	49.8	45.3	55.4	48.4	43.3	47.6	34.1	28.1	52.4	39.4	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.47	0.62	0.50	1.38	0.93	0.91
Incremental Delay, d2	27.5	6.0	0.4	23.0	1.6	0.1	4.9	2.4	0.9	11.4	4.5	0.9
Delay (s)	82.8	55.8	45.7	78.4	49.9	43.4	74.8	23.5	15.0	83.8	41.0	29.9
Level of Service	F	E	D	E	D	D	E	C	B	F	D	C
Approach Delay (s)		57.5			55.4			32.6			47.4	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM Average Control Delay	46.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	126	806	615	89	154	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1881	1844		1805	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1881	1844		1805	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	135	867	661	96	166	134
RTOR Reduction (vph)	0	0	5	0	0	115
Lane Group Flow (vph)	135	867	752	0	166	19
Confl. Peds. (#/hr)				6	3	
Confl. Bikes (#/hr)	1		2			
Heavy Vehicles (%)	2%	1%	1%	0%	0%	2%
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	11.4	68.6	53.2		12.6	12.6
Effective Green, g (s)	11.4	68.6	53.2		12.6	12.6
Actuated g/C Ratio	0.13	0.76	0.59		0.14	0.14
Clearance Time (s)	4.0	4.8	4.8		4.0	4.0
Vehicle Extension (s)	2.5	3.0	3.0		2.5	2.5
Lane Grp Cap (vph)	224	1434	1090		253	222
v/s Ratio Prot	0.08	c0.46	c0.41		c0.09	
v/s Ratio Perm						0.01
v/c Ratio	0.60	0.60	0.69		0.66	0.08
Uniform Delay, d1	37.2	4.7	12.7		36.6	33.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	1.9	3.6		5.4	0.1
Delay (s)	41.0	6.6	16.3		42.0	33.8
Level of Service	D	A	B		D	C
Approach Delay (s)		11.2	16.3		38.4	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	321	35	296	268	126	39	259	507	100	191	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		5.0	5.0			6.0	6.0	5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			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	0.99		1.00	0.95			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1810		1770	1764			1848	1599	1752	1765	
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1810		1770	1764			1848	1599	1752	1765	
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)	55	365	40	336	305	143	44	294	576	114	217	27
RTOR Reduction (vph)	0	2	0	0	8	0	0	0	251	0	2	0
Lane Group Flow (vph)	55	403	0	336	440	0	0	338	325	114	242	0
Confl. Peds. (#/hr)	4		1	1		4	5		4	4		5
Confl. Bikes (#/hr)								3	1			
Heavy Vehicles (%)	4%	2%	14%	2%	2%	0%	3%	2%	1%	3%	6%	0%
Turn Type	Prot			Prot			Split		Prot	Split		
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases												
Actuated Green, G (s)	8.5	37.5		35.0	64.5			37.0	37.0	27.2	27.2	
Effective Green, g (s)	8.5	37.5		35.0	64.5			37.0	37.0	27.2	27.2	
Actuated g/C Ratio	0.05	0.24		0.22	0.41			0.23	0.23	0.17	0.17	
Clearance Time (s)	4.5	5.0		5.0	5.0			6.0	6.0	5.0	5.0	
Vehicle Extension (s)	2.5	4.0		2.5	4.0			2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	94	430		393	721			434	375	302	304	
v/s Ratio Prot	0.03	c0.22		c0.19	0.25			0.18	c0.20	0.07	c0.14	
v/s Ratio Perm												
v/c Ratio	0.59	0.94		0.85	0.61			0.78	0.87	0.38	0.79	
Uniform Delay, d1	72.9	59.0		58.9	36.7			56.5	58.0	57.8	62.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.5	28.4		16.2	1.8			8.3	18.3	0.6	12.9	
Delay (s)	80.4	87.4		75.1	38.5			64.8	76.3	58.3	75.5	
Level of Service	F	F		E	D			E	E	E	E	
Approach Delay (s)		86.5			54.2			72.0			70.0	
Approach LOS		F			D			E			E	

Intersection Summary			
HCM Average Control Delay	68.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	157.7	Sum of lost time (s)	21.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	412	25	172	353	35	40	24	204	187	99	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.90		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1719	1833		1656	1837			1614		1787	1749	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1719	1833		1656	1837			1614		1787	1749	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	24	463	28	193	397	39	45	27	229	210	111	53
RTOR Reduction (vph)	0	1	0	0	2	0	0	73	0	0	11	0
Lane Group Flow (vph)	24	490	0	193	434	0	0	228	0	210	153	0
Confl. Peds. (#/hr)	2		3	3		2			1	1		
Confl. Bikes (#/hr)		1								1		
Heavy Vehicles (%)	5%	2%	12%	9%	2%	0%	8%	12%	1%	1%	5%	0%
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	4.2	40.9		19.5	56.2			22.4		20.1	20.1	
Effective Green, g (s)	4.2	40.9		19.5	56.2			22.4		20.1	20.1	
Actuated g/C Ratio	0.03	0.34		0.16	0.46			0.18		0.16	0.16	
Clearance Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Vehicle Extension (s)	2.5	3.0		2.5	3.0			2.5		2.5	2.5	
Lane Grp Cap (vph)	59	615		265	847			297		295	288	
v/s Ratio Prot	0.01	c0.27		c0.12	0.24			c0.14		c0.12	0.09	
v/s Ratio Perm												
v/c Ratio	0.41	0.80		0.73	0.51			0.77		0.71	0.53	
Uniform Delay, d1	57.6	36.7		48.7	23.2			47.3		48.2	46.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	3.3	7.1		9.0	0.5			10.9		7.4	1.5	
Delay (s)	60.9	43.8		57.7	23.7			58.2		55.5	48.1	
Level of Service	E	D		E	C			E		E	D	
Approach Delay (s)		44.6			34.1			58.2			52.2	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	44.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	121.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	75.1%	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												
Volume (vph)	18	1960	129	82	1225	12	80	34	40	20	58	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5		5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	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		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1703	3539	1599	1805	3539	1380		1822	1495		1876	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73	1.00		0.90	1.00
Satd. Flow (perm)	1703	3539	1599	1805	3539	1380		1380	1495		1702	1547
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)	20	2130	140	89	1332	13	87	37	43	22	63	37
RTOR Reduction (vph)	0	0	14	0	0	2	0	0	22	0	0	32
Lane Group Flow (vph)	20	2130	126	89	1332	11	0	124	21	0	85	5
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	6%	2%	1%	0%	2%	17%	1%	0%	8%	0%	0%	3%
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	4.4	78.4	78.4	10.8	84.8	84.8		16.3	16.3		16.3	16.3
Effective Green, g (s)	4.4	78.4	78.4	10.8	84.8	84.8		16.3	16.3		16.3	16.3
Actuated g/C Ratio	0.04	0.65	0.65	0.09	0.71	0.71		0.14	0.14		0.14	0.14
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5		5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.5	5.0	5.0	2.5	5.0	5.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	62	2312	1045	162	2501	975		187	203		231	210
v/s Ratio Prot	0.01	c0.60		0.05	c0.38							
v/s Ratio Perm			0.08			0.01		c0.09	0.01		0.05	0.00
v/c Ratio	0.32	0.92	0.12	0.55	0.53	0.01		0.66	0.11		0.37	0.02
Uniform Delay, d1	56.3	18.1	7.8	52.3	8.3	5.2		49.2	45.5		47.2	45.0
Progression Factor	1.00	1.00	1.00	0.93	0.68	0.32		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	7.5	0.2	2.5	0.7	0.0		9.4	0.3		1.4	0.1
Delay (s)	58.5	25.6	8.1	51.4	6.3	1.7		58.6	45.8		48.5	45.0
Level of Service	E	C	A	D	A	A		E	D		D	D
Approach Delay (s)		24.8			9.1			55.3			47.5	
Approach LOS		C			A			E			D	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1585	408	213	1169	77	130	111	119	171	218	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3505	1583	1736	3505	1465	1787	1724		1734	1763	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.42	1.00		0.42	1.00	
Satd. Flow (perm)	1805	3505	1583	1736	3505	1465	797	1724		760	1763	
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)	6	1686	434	227	1244	82	138	118	127	182	232	9
RTOR Reduction (vph)	0	0	102	0	0	23	0	32	0	0	2	0
Lane Group Flow (vph)	6	1686	332	227	1244	59	138	213	0	182	239	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)						1		1			2	
Heavy Vehicles (%)	0%	3%	2%	4%	3%	8%	1%	2%	0%	4%	7%	12%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.3	58.6	58.6	17.4	74.7	74.7	29.5	29.5		29.5	29.5	
Effective Green, g (s)	1.3	58.6	58.6	17.4	74.7	74.7	29.5	29.5		29.5	29.5	
Actuated g/C Ratio	0.01	0.49	0.49	0.14	0.62	0.62	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.3	5.0	5.0	2.3	5.0	5.0	3.0	3.0		3.5	3.5	
Lane Grp Cap (vph)	20	1712	773	252	2182	912	196	424		187	433	
v/s Ratio Prot	0.00	c0.48		c0.13	0.35			0.12			0.14	
v/s Ratio Perm			0.21			0.04	0.17			c0.24		
v/c Ratio	0.30	0.98	0.43	0.90	0.57	0.07	0.70	0.50		0.97	0.55	
Uniform Delay, d1	58.9	30.3	19.9	50.5	13.3	8.9	41.3	38.9		44.9	39.5	
Progression Factor	1.02	0.64	0.57	1.01	1.22	2.15	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	11.0	0.7	26.8	0.9	0.1	10.9	0.9		57.8	1.7	
Delay (s)	62.3	30.3	12.1	78.0	17.0	19.2	52.2	39.9		102.7	41.2	
Level of Service	E	C	B	E	B	B	D	D		F	D	
Approach Delay (s)		26.7			26.1			44.3			67.6	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	95.0%	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)	31	12	47	30	38	48	35	308	26	136	646	53
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	
Lane Util. Factor		0.95			1.00	1.00		0.95			0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Frt		0.92			1.00	0.85		0.99			0.99	
Flt Protected		0.98			0.98	1.00		1.00			0.99	
Satd. Flow (prot)		3181			1216	1583		3414			3389	
Flt Permitted		0.88			0.88	1.00		0.84			0.81	
Satd. Flow (perm)		2844			1094	1583		2882			2751	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	35	13	53	34	43	54	39	346	29	153	726	60
RTOR Reduction (vph)	0	32	0	0	0	32	0	14	0	0	13	0
Lane Group Flow (vph)	0	69	0	0	77	22	0	400	0	0	926	0
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	8%	2%	7%	89%	2%	34%	1%	0%	3%	1%	51%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		16.0			16.0	16.0		16.0			16.0	
Effective Green, g (s)		16.0			16.0	16.0		16.0			16.0	
Actuated g/C Ratio		0.40			0.40	0.40		0.40			0.40	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Grp Cap (vph)		1138			438	633		1153			1100	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.07	0.01		0.14			c0.34	
v/c Ratio		0.06			0.18	0.03		0.35			0.84	
Uniform Delay, d1		7.4			7.7	7.3		8.4			10.9	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		0.1			0.9	0.1		0.8			7.9	
Delay (s)		7.5			8.6	7.4		9.2			18.7	
Level of Service		A			A	A		A			B	
Approach Delay (s)		7.5			8.1			9.2			18.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.2%	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)	43	1842	24	263	1320	103	53	17	308	197	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	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	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1687	3505	1615	1626	3471	1428	1805	1696	1583	3335	1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1687	3505	1615	1626	3471	1428	1805	1696	1583	3335	1776	1583
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)	46	1960	26	280	1404	110	56	18	328	210	31	60
RTOR Reduction (vph)	0	0	4	0	0	43	0	0	301	0	0	55
Lane Group Flow (vph)	46	1960	22	280	1404	67	56	18	27	210	31	5
Confl. Peds. (#/hr)	4					4	6					6
Heavy Vehicles (%)	7%	3%	0%	11%	4%	10%	0%	12%	2%	5%	7%	2%
Turn Type	Prot		Perm	Prot		Perm	Split		Prot	Split		Prot
Protected Phases	5	2		1	6		8	8	8	4	4	4
Permitted Phases			2			6						
Actuated Green, G (s)	7.6	59.6	59.6	21.3	73.3	73.3	9.8	9.8	9.8	10.8	10.8	10.8
Effective Green, g (s)	7.6	59.6	59.6	21.3	73.3	73.3	9.8	9.8	9.8	10.8	10.8	10.8
Actuated g/C Ratio	0.06	0.50	0.50	0.18	0.61	0.61	0.08	0.08	0.08	0.09	0.09	0.09
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0	5.0	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	107	1741	802	289	2120	872	147	139	129	300	160	142
v/s Ratio Prot	0.03	c0.56		c0.17	0.40		c0.03	0.01	0.02	c0.06	0.02	0.00
v/s Ratio Perm			0.01			0.05						
v/c Ratio	0.43	1.13	0.03	0.97	0.66	0.08	0.38	0.13	0.21	0.70	0.19	0.04
Uniform Delay, d1	54.1	30.2	15.4	49.0	15.3	9.5	52.2	51.1	51.5	53.0	50.6	49.9
Progression Factor	1.16	0.56	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	59.6	0.0	43.9	1.6	0.2	1.2	0.3	0.6	6.4	0.4	0.1
Delay (s)	63.7	76.5	5.2	92.9	16.9	9.7	53.4	51.4	52.1	59.5	51.0	49.9
Level of Service	E	E	A	F	B	A	D	D	D	E	D	D
Approach Delay (s)		75.3			28.3			52.2			56.7	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM Average Control Delay	53.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	289	282	1121	465	312	1019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	5.4	5.4	4.0	5.4
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3467	1615	3539	1615	1787	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3467	1615	3539	1615	1787	3505
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	304	297	1180	489	328	1073
RTOR Reduction (vph)	0	262	0	216	0	0
Lane Group Flow (vph)	304	35	1180	273	328	1073
Heavy Vehicles (%)	1%	0%	2%	0%	1%	3%
Turn Type		custom		Perm	Prot	
Protected Phases	7	4	6		5	2
Permitted Phases				6		
Actuated Green, G (s)	16.0	15.2	72.5	72.5	28.1	104.6
Effective Green, g (s)	16.0	15.2	72.5	72.5	28.1	104.6
Actuated g/C Ratio	0.12	0.12	0.56	0.56	0.22	0.80
Clearance Time (s)	4.0	4.8	5.4	5.4	4.0	5.4
Vehicle Extension (s)	2.3	2.3	4.8	4.8	2.3	4.8
Lane Grp Cap (vph)	427	189	1974	901	386	2820
v/s Ratio Prot	c0.09	0.02	c0.33		c0.18	0.31
v/s Ratio Perm				0.17		
v/c Ratio	0.71	0.18	0.60	0.30	0.85	0.38
Uniform Delay, d1	54.8	51.8	19.1	15.3	48.9	3.6
Progression Factor	1.00	1.00	1.00	1.00	0.87	1.22
Incremental Delay, d2	5.0	0.3	1.3	0.9	11.3	0.3
Delay (s)	59.7	52.1	20.4	16.2	53.8	4.6
Level of Service	E	D	C	B	D	A
Approach Delay (s)	56.0		19.2			16.1
Approach LOS	E		B			B

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	666	175	65	651	56	146	38	55	129	23	78
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	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.86		1.00	0.91	1.00	1.00	1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		0.99	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		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)	1805	6281		1805	5136	1615	1795	1716		3480	1900	1557
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.20	1.00		0.69	1.00	1.00
Satd. Flow (perm)	1805	6281		1805	5136	1615	378	1716		2536	1900	1557
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	106	716	188	70	700	60	157	41	59	139	25	84
RTOR Reduction (vph)	0	33	0	0	0	32	0	47	0	0	0	77
Lane Group Flow (vph)	106	871	0	70	700	28	157	53	0	139	25	7
Confl. Peds. (#/hr)			7	7			7		2	2		7
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			3			4	
Permitted Phases						6	3			4		4
Actuated Green, G (s)	10.2	54.7		6.9	51.4	51.4	20.0	20.0		9.4	9.4	9.4
Effective Green, g (s)	10.2	54.7		6.9	51.4	51.4	20.0	20.0		9.4	9.4	9.4
Actuated g/C Ratio	0.09	0.50		0.06	0.47	0.47	0.18	0.18		0.09	0.09	0.09
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0	2.0	1.0	1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	167	3123		113	2400	755	69	312		217	162	133
v/s Ratio Prot	c0.06	c0.14		0.04	0.14			0.03			0.01	
v/s Ratio Perm						0.02	c0.42			c0.05		0.00
v/c Ratio	0.63	0.28		0.62	0.29	0.04	2.28	0.17		0.64	0.15	0.05
Uniform Delay, d1	48.1	16.1		50.3	18.1	15.9	45.0	38.0		48.7	46.6	46.2
Progression Factor	1.00	1.00		1.26	0.45	0.07	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.7	0.2		6.7	0.3	0.1	617.2	0.1		4.8	0.2	0.1
Delay (s)	53.8	16.4		69.8	8.5	1.2	662.2	38.1		53.4	46.8	46.3
Level of Service	D	B		E	A	A	F	D		D	D	D
Approach Delay (s)		20.3			13.1			419.3			50.3	
Approach LOS		C			B			F			D	

Intersection Summary			
HCM Average Control Delay	64.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	46.7%	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)	101	803	52	124	651	203	33	20	122	415	62	122
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		5.0		5.0	5.0	5.0
Lane Util. Factor	0.97	0.86		0.97	0.91	1.00		0.95		0.97	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00	0.99	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.90		1.00	0.95	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	3502	6477		3502	5136	1615		3166		3502	1687	1476
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.65		0.63	1.00	1.00
Satd. Flow (perm)	3502	6477		3502	5136	1615		2071		2317	1687	1476
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	113	902	58	139	731	228	37	22	137	466	70	137
RTOR Reduction (vph)	0	8	0	0	0	122	0	127	0	0	17	77
Lane Group Flow (vph)	113	952	0	139	731	106	0	69	0	466	91	23
Confl. Peds. (#/hr)							12					12
Confl. Bikes (#/hr)											1	1
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%	1%
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			3			4	
Permitted Phases						6	3			4		4
Actuated Green, G (s)	7.0	50.2		7.8	51.0	51.0		8.0		25.0	25.0	25.0
Effective Green, g (s)	7.0	50.2		7.8	51.0	51.0		8.0		25.0	25.0	25.0
Actuated g/C Ratio	0.06	0.46		0.07	0.46	0.46		0.07		0.23	0.23	0.23
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5		5.0		5.0	5.0	5.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0	2.0		1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	223	2956		248	2381	749		151		527	383	335
v/s Ratio Prot	0.03	c0.15		c0.04	0.14						0.05	
v/s Ratio Perm						0.07		c0.03		c0.20		0.02
v/c Ratio	0.51	0.32		0.56	0.31	0.14		0.46		0.88	0.24	0.07
Uniform Delay, d1	49.8	19.1		49.4	18.4	16.9		48.9		41.1	34.7	33.3
Progression Factor	1.24	0.57		1.52	0.28	0.07		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3		1.7	0.3	0.4		0.8		15.7	0.1	0.0
Delay (s)	62.2	11.2		77.0	5.5	1.6		49.7		56.8	34.8	33.4
Level of Service	E	B		E	A	A		D		E	C	C
Approach Delay (s)		16.6			13.7			49.7			49.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1308	75	137	939	109	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	5.0	5.0
Lane Util. Factor	0.86		0.97	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	6476		3502	5136	1787	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	6476		3502	5136	1787	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1391	80	146	999	116	129
RTOR Reduction (vph)	6	0	0	0	0	99
Lane Group Flow (vph)	1465	0	146	999	116	30
Confl. Peds. (#/hr)		4	4		2	9
Heavy Vehicles (%)	0%	0%	0%	1%	1%	2%
Turn Type			Prot			Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	62.5		7.5	74.5	26.0	26.0
Effective Green, g (s)	62.5		7.5	74.5	26.0	26.0
Actuated g/C Ratio	0.57		0.07	0.68	0.24	0.24
Clearance Time (s)	4.5		4.5	4.5	5.0	5.0
Vehicle Extension (s)	2.0		0.5	2.0	0.5	0.5
Lane Grp Cap (vph)	3680		239	3478	422	374
v/s Ratio Prot	c0.23		c0.04	0.19	c0.06	0.02
v/s Ratio Perm						
v/c Ratio	0.40		0.61	0.29	0.27	0.08
Uniform Delay, d1	13.3		49.8	7.1	34.3	32.7
Progression Factor	0.61		1.15	0.50	1.00	1.00
Incremental Delay, d2	0.3		3.0	0.2	1.6	0.4
Delay (s)	8.4		60.2	3.7	35.9	33.1
Level of Service	A		E	A	D	C
Approach Delay (s)	8.4			10.9	34.4	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.8%	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	1189	299	360	794	0	0	0	0	660	270	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5	5.5					5.5	5.5	5.5
Lane Util. Factor		0.91	1.00	1.00	0.95					0.91	0.91	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	0.97	1.00
Satd. Flow (prot)		5136	1554	1770	3610					1626	3347	1615
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		5136	1554	1770	3610					1626	3347	1615
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	1265	318	383	845	0	0	0	0	702	287	327
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	0	0	0	179
Lane Group Flow (vph)	0	1265	214	383	845	0	0	0	0	351	638	148
Confl. Peds. (#/hr)	7		16	16		7	12					12
Confl. Bikes (#/hr)								7			1	
Heavy Vehicles (%)	0%	1%	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%
Turn Type			Perm	Prot						Split		Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			2									
Actuated Green, G (s)		44.5	44.5	27.5	77.5					21.5	21.5	21.5
Effective Green, g (s)		44.5	44.5	27.5	77.5					21.5	21.5	21.5
Actuated g/C Ratio		0.40	0.40	0.25	0.70					0.20	0.20	0.20
Clearance Time (s)		5.5	5.5	5.5	5.5					5.5	5.5	5.5
Vehicle Extension (s)		4.8	4.8	2.3	4.0					2.3	2.3	2.3
Lane Grp Cap (vph)		2078	629	443	2543					318	654	316
v/s Ratio Prot		c0.25		c0.22	0.23					c0.22	0.19	0.09
v/s Ratio Perm			0.14									
v/c Ratio		0.61	0.34	0.86	0.33					1.10	1.06dl	0.47
Uniform Delay, d1		25.9	22.6	39.5	6.3					44.2	44.0	39.2
Progression Factor		0.50	0.30	0.66	1.34					1.00	1.00	1.00
Incremental Delay, d2		1.3	1.4	13.7	0.3					81.3	28.8	0.6
Delay (s)		14.3	8.2	39.7	8.7					125.5	72.8	39.8
Level of Service		B	A	D	A					F	E	D
Approach Delay (s)		13.0			18.4			0.0			78.7	
Approach LOS		B			B			A			E	

Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	454	1494	0	0	1053	564	133	4	292	0	0	0
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	4.5	4.5	4.5			
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	0.98	0.98	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)	3502	3574			3574	1555	1676	1687	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3502	3574			3574	1555	1676	1687	1568			
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)	478	1573	0	0	1108	594	140	4	307	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	211	0	0	56	0	0	0
Lane Group Flow (vph)	478	1573	0	0	1108	383	71	73	252	0	0	0
Confl. Peds. (#/hr)	3		6	6		3	11					11
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	0%	3%	0%	0%	0%
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	19.9	83.0			59.1	59.1	17.5	17.5	17.5			
Effective Green, g (s)	19.9	83.0			59.1	59.1	17.5	17.5	17.5			
Actuated g/C Ratio	0.18	0.75			0.54	0.54	0.16	0.16	0.16			
Clearance Time (s)	4.0	5.0			5.0	5.0	4.5	4.5	4.5			
Vehicle Extension (s)	2.3	4.0			4.8	4.8	2.3	2.3	2.3			
Lane Grp Cap (vph)	634	2697			1920	835	267	268	249			
v/s Ratio Prot	c0.14	c0.44			0.31							
v/s Ratio Perm						0.25	0.04	0.04	c0.16			
v/c Ratio	0.75	0.58			0.58	0.46	0.27	0.27	1.01			
Uniform Delay, d1	42.7	5.9			17.1	15.6	40.6	40.7	46.2			
Progression Factor	0.99	0.23			0.50	0.33	1.00	1.00	1.00			
Incremental Delay, d2	3.2	0.6			1.1	1.5	0.3	0.3	59.6			
Delay (s)	45.5	2.0			9.5	6.7	40.9	41.0	105.9			
Level of Service	D	A			A	A	D	D	F			
Approach Delay (s)		12.1			8.5			85.1			0.0	
Approach LOS		B			A			F			A	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	74.9%	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)	272	1136	103	38	962	236	264	73	67	415	72	255
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	4.0	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	1.00
Satd. Flow (prot)	3400	3574	1569	1805	3574	1572	1715	1640		1698	1716	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99		0.95	0.97	1.00
Satd. Flow (perm)	3400	3574	1569	1805	3574	1572	1715	1640		1698	1716	1538
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)	278	1159	105	39	982	241	269	74	68	423	73	260
RTOR Reduction (vph)	0	0	32	0	0	132	0	16	0	0	0	217
Lane Group Flow (vph)	278	1159	73	39	982	109	207	188	0	245	251	43
Confl. Peds. (#/hr)	3		3	3		3	4		1	1		4
Confl. Bikes (#/hr)					1			1				
Heavy Vehicles (%)	3%	1%	0%	0%	1%	1%	0%	7%	0%	1%	3%	3%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	12.0	55.3	55.3	4.0	46.8	46.8	15.2	15.2		18.0	18.0	18.0
Effective Green, g (s)	12.0	55.3	55.3	4.0	46.8	46.8	15.2	15.2		18.0	18.0	18.0
Actuated g/C Ratio	0.11	0.50	0.50	0.04	0.43	0.43	0.14	0.14		0.16	0.16	0.16
Clearance Time (s)	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	0.5	2.7	2.7	0.5	2.7	2.7	0.5	0.5		0.5	0.5	0.5
Lane Grp Cap (vph)	371	1797	789	66	1521	669	237	227		278	281	252
v/s Ratio Prot	c0.08	c0.32		0.02	0.27		c0.12	0.11		0.14	c0.15	
v/s Ratio Perm			0.05			0.07						0.03
v/c Ratio	0.75	0.64	0.09	0.59	0.65	0.16	0.87	0.83		0.88	0.89	0.17
Uniform Delay, d1	47.5	20.1	14.3	52.2	25.0	19.5	46.5	46.1		45.0	45.1	39.6
Progression Factor	1.23	0.98	0.99	1.09	0.61	0.55	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.4	1.4	0.2	7.9	1.9	0.5	27.2	20.3		25.5	27.4	0.1
Delay (s)	63.8	21.1	14.3	64.8	17.1	11.2	73.6	66.4		70.5	72.4	39.7
Level of Service	E	C	B	E	B	B	E	E		E	E	D
Approach Delay (s)		28.3			17.4			70.0			60.5	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1491	30	23	1010	57	191	17	33	125	9	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3554		1597	3572		1773	1692		1778	1599	
Flt Permitted	0.95	1.00		0.95	1.00		0.67	1.00		0.72	1.00	
Satd. Flow (perm)	1805	3554		1597	3572		1255	1692		1352	1599	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	55	1603	32	25	1086	61	205	18	35	134	10	88
RTOR Reduction (vph)	0	1	0	0	3	0	0	28	0	0	71	0
Lane Group Flow (vph)	55	1634	0	25	1144	0	205	25	0	134	27	0
Confl. Peds. (#/hr)	2		2	2		2	6		4	4		6
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	13%	13%	0%	2%	1%	0%	0%	1%	0%	1%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	5.7	72.2		3.5	70.5		20.8	20.8		20.8	20.8	
Effective Green, g (s)	5.7	72.2		3.5	70.5		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.05	0.66		0.03	0.64		0.19	0.19		0.19	0.19	
Clearance Time (s)	4.0	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	0.5	2.7		0.5	3.2		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	94	2333		51	2289		237	320		256	302	
v/s Ratio Prot	c0.03	c0.46		0.02	0.32			0.01			0.02	
v/s Ratio Perm							c0.16			0.10		
v/c Ratio	0.59	0.70		0.49	0.50		0.86	0.08		0.52	0.09	
Uniform Delay, d1	51.0	12.0		52.4	10.4		43.2	36.7		40.1	36.8	
Progression Factor	1.26	0.62		1.02	1.76		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	1.3		2.5	0.7		25.6	0.0		0.9	0.0	
Delay (s)	68.5	8.8		56.0	19.1		68.8	36.7		41.0	36.8	
Level of Service	E	A		E	B		E	D		D	D	
Approach Delay (s)		10.7			19.9			62.2			39.3	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1714	63	321	970	28	817
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		4.5	5.0	4.5	4.5
Lane Util. Factor	0.91		0.97	0.95	1.00	0.88
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5107		3400	3574	1736	2842
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5107		3400	3574	1736	2842
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1823	67	341	1032	30	869
RTOR Reduction (vph)	3	0	0	0	0	381
Lane Group Flow (vph)	1887	0	341	1032	30	488
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)	1		1			
Heavy Vehicles (%)	1%	2%	3%	1%	4%	0%
Turn Type			Prot			Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	56.7		13.8	77.0	23.5	23.5
Effective Green, g (s)	56.7		13.8	77.0	23.5	23.5
Actuated g/C Ratio	0.52		0.13	0.70	0.21	0.21
Clearance Time (s)	7.0		4.5	5.0	4.5	4.5
Vehicle Extension (s)	2.9		0.5	2.9	0.5	0.5
Lane Grp Cap (vph)	2632		427	2502	371	607
v/s Ratio Prot	c0.37		c0.10	0.29	0.02	c0.17
v/s Ratio Perm						
v/c Ratio	0.72		0.80	0.41	0.08	0.80
Uniform Delay, d1	20.5		46.7	7.0	34.6	41.1
Progression Factor	0.80		1.00	1.51	1.00	1.00
Incremental Delay, d2	1.4		8.9	0.5	0.4	10.9
Delay (s)	17.6		55.9	11.0	35.0	51.9
Level of Service	B		E	B	D	D
Approach Delay (s)	17.6			22.1	51.4	
Approach LOS	B			C	D	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.7%	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)	97	2359	36	22	1228	68	30	0	10	43	1	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5173		1805	5091		1801	1594		1803	1580	
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00		0.75	1.00	
Satd. Flow (perm)	1805	5173		1805	5091		1342	1594		1424	1580	
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)	105	2564	39	24	1335	74	33	0	11	47	1	74
RTOR Reduction (vph)	0	1	0	0	3	0	0	10	0	0	69	0
Lane Group Flow (vph)	105	2602	0	24	1406	0	33	1	0	47	6	0
Confl. Peds. (#/hr)	2		3	3		2	2		1	1		2
Confl. Bikes (#/hr)		1			1					1		
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	9.3	85.0		3.3	79.0		7.2	7.2		7.2	7.2	
Effective Green, g (s)	9.3	85.0		3.3	79.0		7.2	7.2		7.2	7.2	
Actuated g/C Ratio	0.08	0.77		0.03	0.72		0.07	0.07		0.07	0.07	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	153	3997		54	3656		88	104		93	103	
v/s Ratio Prot	c0.06	c0.50		0.01	0.28			0.00			0.00	
v/s Ratio Perm							0.02			c0.03		
v/c Ratio	0.69	0.65		0.44	0.38		0.38	0.01		0.51	0.06	
Uniform Delay, d1	48.9	5.7		52.4	6.0		49.2	48.1		49.7	48.2	
Progression Factor	0.93	0.50		0.74	0.95		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.2	0.5		1.8	0.3		1.0	0.0		1.6	0.1	
Delay (s)	51.6	3.4		40.7	6.0		50.2	48.1		51.2	48.3	
Level of Service	D	A		D	A		D	D		D	D	
Approach Delay (s)		5.2			6.6			49.7			49.4	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	446	1650	241	120	775	85	231	156	76	100	183	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		5.5	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91		1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	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	1.00
Frt	1.00	0.98		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)	3502	5060		1787	3490		3467	1900	1615	1805	1881	1599
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)	3502	5060		1787	3490		3467	1900	1615	1805	1881	1599
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	480	1774	259	129	833	91	248	168	82	108	197	144
RTOR Reduction (vph)	0	15	0	0	6	0	0	0	70	0	0	125
Lane Group Flow (vph)	480	2018	0	129	918	0	248	168	12	108	197	19
Confl. Peds. (#/hr)			1	1			2		1	1		2
Heavy Vehicles (%)	0%	0%	2%	1%	2%	1%	1%	0%	0%	0%	1%	1%
Turn Type	Prot			Prot			Prot		Prot	Prot		Prot
Protected Phases	5	2		1	6		3	8	8	7	4	4
Permitted Phases												
Actuated Green, G (s)	18.0	52.8		12.0	46.8		10.1	16.1	16.1	9.1	14.6	14.6
Effective Green, g (s)	18.0	52.8		12.0	46.8		10.1	16.1	16.1	9.1	14.6	14.6
Actuated g/C Ratio	0.16	0.48		0.11	0.43		0.09	0.15	0.15	0.08	0.13	0.13
Clearance Time (s)	4.5	5.5		4.5	5.5		5.5	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.5	2.9		0.5	2.9		0.5	0.5	0.5	0.5	0.5	0.5
Lane Grp Cap (vph)	573	2429		195	1485		318	278	236	149	250	212
v/s Ratio Prot	c0.14	c0.40		0.07	0.26		c0.07	0.09	0.01	0.06	c0.10	0.01
v/s Ratio Perm												
v/c Ratio	0.84	0.83		0.66	0.62		0.78	0.60	0.05	0.72	0.79	0.09
Uniform Delay, d1	44.6	24.7		47.1	24.6		48.9	44.0	40.4	49.2	46.2	41.9
Progression Factor	1.07	1.10		1.11	0.58		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	2.8		6.1	1.8		10.5	2.5	0.0	13.7	14.0	0.1
Delay (s)	55.6	30.0		58.5	16.2		59.4	46.5	40.4	63.0	60.2	41.9
Level of Service	E	C		E	B		E	D	D	E	E	D
Approach Delay (s)		34.9			21.4			51.9			55.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	1495	129	68	906	15	90	28	101	27	10	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.0	4.8		4.2	4.2	4.2	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	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	0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3564		1787	3563		1785	1900	1583	1796	1645	
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1805	3564		1787	3563		1343	1900	1583	1394	1645	
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)	89	1590	137	72	964	16	96	30	107	29	11	54
RTOR Reduction (vph)	0	3	0	0	1	0	0	0	95	0	48	0
Lane Group Flow (vph)	89	1724	0	72	979	0	96	30	12	29	17	0
Confl. Peds. (#/hr)	10					10	1		5	5		1
Confl. Bikes (#/hr)		2										
Heavy Vehicles (%)	0%	0%	1%	1%	1%	0%	1%	0%	2%	0%	0%	0%
Turn Type	Prot			Prot			Perm		Prot	Perm		
Protected Phases	5	2		1	6			8	8		4	
Permitted Phases							8			4		
Actuated Green, G (s)	7.6	78.0		6.7	77.1		12.3	12.3	12.3	12.5	12.5	
Effective Green, g (s)	7.6	78.0		6.7	77.1		12.3	12.3	12.3	12.5	12.5	
Actuated g/C Ratio	0.07	0.71		0.06	0.70		0.11	0.11	0.11	0.11	0.11	
Clearance Time (s)	4.0	4.8		4.0	4.8		4.2	4.2	4.2	4.0	4.0	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	125	2527		109	2497		150	212	177	158	187	
v/s Ratio Prot	c0.05	c0.48		0.04	0.27			0.02	0.01		0.01	
v/s Ratio Perm							c0.07			0.02		
v/c Ratio	0.71	0.68		0.66	0.39		0.64	0.14	0.07	0.18	0.09	
Uniform Delay, d1	50.1	9.0		50.5	6.8		46.7	44.1	43.7	44.1	43.7	
Progression Factor	1.51	0.31		1.27	0.68		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.0	0.9		10.5	0.4		6.8	0.1	0.1	0.2	0.1	
Delay (s)	84.7	3.7		74.5	5.1		53.5	44.2	43.8	44.3	43.7	
Level of Service	F	A		E	A		D	D	D	D	D	
Approach Delay (s)		7.7			9.8			47.8			43.9	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.2
Intersection Capacity Utilization	73.5%	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)	40	1237	120	41	786	7	167	1	45	6	4	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.8	5.1		4.8	4.8		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3520		1805	3569		1780	1532		1534	1635	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	1770	3520		1805	3569		1386	1532		1171	1635	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	1330	129	44	845	8	180	1	48	6	4	23
RTOR Reduction (vph)	0	5	0	0	0	0	0	40	0	0	19	0
Lane Group Flow (vph)	43	1454	0	44	853	0	180	9	0	6	8	0
Confl. Peds. (#/hr)	3		4	4		3	4		5	5		4
Confl. Bikes (#/hr)		2										
Heavy Vehicles (%)	2%	1%	0%	0%	1%	0%	1%	0%	4%	17%	0%	0%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	4.2	71.7		5.1	73.1		18.8	18.8		19.6	19.6	
Effective Green, g (s)	4.2	71.7		5.1	73.1		18.8	18.8		19.6	19.6	
Actuated g/C Ratio	0.04	0.65		0.05	0.66		0.17	0.17		0.18	0.18	
Clearance Time (s)	4.0	4.8		4.8	5.1		4.8	4.8		4.0	4.0	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	68	2294		84	2372		237	262		209	291	
v/s Ratio Prot	0.02	c0.41		c0.02	0.24			0.01			0.00	
v/s Ratio Perm							c0.13			0.01		
v/c Ratio	0.63	0.63		0.52	0.36		0.76	0.04		0.03	0.03	
Uniform Delay, d1	52.1	11.4		51.3	8.1		43.4	38.0		37.3	37.3	
Progression Factor	1.18	0.29		0.83	1.07		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.4	1.0		2.7	0.4		11.7	0.0		0.0	0.0	
Delay (s)	71.9	4.4		45.1	9.1		55.1	38.1		37.4	37.3	
Level of Service	E	A		D	A		E	D		D	D	
Approach Delay (s)		6.3			10.9			51.5			37.3	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	829	127	48	593	15	84	52	98	32	38	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.5		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	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	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.90		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1599	1805	3560		1787	1714		1805	1717	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1599	1805	3560		1787	1714		1805	1717	
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)	64	882	135	51	631	16	89	55	104	34	40	55
RTOR Reduction (vph)	0	0	34	0	1	0	0	81	0	0	51	0
Lane Group Flow (vph)	64	882	101	51	646	0	89	78	0	34	44	0
Confl. Peds. (#/hr)	1		5	5		1	6					6
Confl. Bikes (#/hr)		1			2							
Heavy Vehicles (%)	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Prot		Prot	Prot			Prot			Prot		
Protected Phases	5	2	2	1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.6	71.5	71.5	5.9	70.8		7.9	11.3		4.0	7.9	
Effective Green, g (s)	6.6	71.5	71.5	5.9	70.8		7.9	11.3		4.0	7.9	
Actuated g/C Ratio	0.06	0.65	0.65	0.05	0.64		0.07	0.10		0.04	0.07	
Clearance Time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.5		4.0	4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	108	2347	1039	97	2291		128	176		66	123	
v/s Ratio Prot	c0.04	c0.24	0.06	0.03	0.18		c0.05	c0.05		0.02	0.03	
v/s Ratio Perm												
v/c Ratio	0.59	0.38	0.10	0.53	0.28		0.70	0.44		0.52	0.36	
Uniform Delay, d1	50.4	8.9	7.2	50.7	8.5		49.9	46.4		52.0	48.6	
Progression Factor	0.75	1.34	2.12	1.38	0.65		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	0.4	0.1	2.3	0.3		12.4	0.7		2.8	0.6	
Delay (s)	42.6	12.3	15.4	72.1	5.9		62.3	47.1		54.9	49.3	
Level of Service	D	B	B	E	A		E	D		D	D	
Approach Delay (s)		14.5			10.7			52.5			50.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	737	45	13	486	29	30	6	12	77	5	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.8		4.5	4.5		4.8	4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3579		1805	3540		1801	1605		1750	1598	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.74	1.00	
Satd. Flow (perm)	1752	3579		1805	3540		1387	1605		1371	1598	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	80	828	51	15	546	33	34	7	13	87	6	33
RTOR Reduction (vph)	0	2	0	0	3	0	0	12	0	0	30	0
Lane Group Flow (vph)	80	877	0	15	576	0	34	8	0	87	9	0
Confl. Peds. (#/hr)	3					3	2		1	1		2
Heavy Vehicles (%)	3%	0%	0%	0%	1%	0%	0%	17%	0%	3%	0%	3%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	7.2	84.1		2.0	79.0		10.5	10.5		10.2	10.2	
Effective Green, g (s)	7.2	84.1		2.0	79.0		10.5	10.5		10.2	10.2	
Actuated g/C Ratio	0.07	0.76		0.02	0.72		0.10	0.10		0.09	0.09	
Clearance Time (s)	4.0	4.9		4.0	4.8		4.5	4.5		4.8	4.8	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	115	2736		33	2542		132	153		127	148	
v/s Ratio Prot	c0.05	c0.25		0.01	0.16			0.01			0.01	
v/s Ratio Perm							0.02			c0.06		
v/c Ratio	0.70	0.32		0.45	0.23		0.26	0.05		0.69	0.06	
Uniform Delay, d1	50.3	4.0		53.5	5.2		46.1	45.2		48.3	45.5	
Progression Factor	0.97	1.03		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.1	0.3		3.6	0.2		0.4	0.1		11.5	0.1	
Delay (s)	62.0	4.5		57.0	5.4		46.5	45.3		59.9	45.6	
Level of Service	E	A		E	A		D	D		E	D	
Approach Delay (s)		9.3			6.7			46.1			55.4	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	372	262	160	7	225	15	101	150	6	10	130	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.0	5.0		4.0	5.4	5.4	4.0	5.4	5.4
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	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	1.00
Frt	1.00	0.94		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)	3467	3371		3502	3573		1787	3610	1615	1805	3610	1615
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)	3467	3371		3502	3573		1787	3610	1615	1805	3610	1615
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)	413	291	178	8	250	17	112	167	7	11	144	233
RTOR Reduction (vph)	0	87	0	0	6	0	0	0	4	0	0	156
Lane Group Flow (vph)	413	382	0	8	261	0	112	167	3	11	144	77
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Prot			Prot			Prot		Prot	Prot		Prot
Protected Phases	5	2		1	6		3	8	8	7	4	4
Permitted Phases												
Actuated Green, G (s)	12.9	40.9		0.7	28.5		7.9	40.6	40.6	0.9	33.6	33.6
Effective Green, g (s)	12.9	40.9		0.7	28.5		7.9	40.6	40.6	0.9	33.6	33.6
Actuated g/C Ratio	0.13	0.40		0.01	0.28		0.08	0.40	0.40	0.01	0.33	0.33
Clearance Time (s)	4.0	4.8		4.0	5.0		4.0	5.4	5.4	4.0	5.4	5.4
Vehicle Extension (s)	0.5	2.9		0.5	2.9		0.5	0.5	0.5	0.5	0.5	0.5
Lane Grp Cap (vph)	442	1361		24	1005		139	1447	647	16	1197	536
v/s Ratio Prot	c0.12	c0.11		0.00	0.07		c0.06	0.05	0.00	0.01	0.04	c0.05
v/s Ratio Perm												
v/c Ratio	0.93	0.28		0.33	0.26		0.81	0.12	0.00	0.69	0.12	0.14
Uniform Delay, d1	43.8	20.3		50.1	28.2		45.9	19.1	18.2	50.1	23.6	23.8
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	26.6	0.5		3.0	0.6		26.4	0.0	0.0	67.5	0.2	0.6
Delay (s)	70.4	20.8		53.0	28.9		72.3	19.1	18.2	117.6	23.8	24.3
Level of Service	E	C		D	C		E	B	B	F	C	C
Approach Delay (s)		44.0			29.6			39.9			26.8	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	13.4
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Volume (veh/h)	3	4	26	44	8	6	39	419	81	15	426	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	4	29	49	9	7	43	466	90	17	473	8
Pedestrians		5						11			4	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1128	1158	493	1150	1117	515	486			556		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1128	1158	493	1150	1117	515	486			556		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	98	98	95	69	95	99	96			98		
cM capacity (veh/h)	165	186	564	156	197	562	1083			990		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	37	64	599	498
Volume Left	3	49	43	17
Volume Right	29	7	90	8
cSH	385	174	1083	990
Volume to Capacity	0.10	0.37	0.04	0.02
Queue Length 95th (ft)	8	40	3	1
Control Delay (s)	15.3	37.4	1.1	0.5
Lane LOS	C	E	A	A
Approach Delay (s)	15.3	37.4	1.1	0.5
Approach LOS	C	E		

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	61.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	435	25	10	391	151	21	14	18	122	14	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
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	0.99		1.00	0.96		1.00	0.91		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3547		1805	3416		1805	1737		1703	1584	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	1805	3547		1805	3416		1407	1737		1316	1584	
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)	13	478	27	11	430	166	23	15	20	134	15	11
RTOR Reduction (vph)	0	3	0	0	36	0	0	16	0	0	9	0
Lane Group Flow (vph)	13	502	0	11	560	0	23	19	0	134	17	0
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	0%	0%	6%	14%	10%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	0.8	17.2		0.8	17.2		7.7	7.7		7.7	7.7	
Effective Green, g (s)	0.8	17.2		0.8	17.2		7.7	7.7		7.7	7.7	
Actuated g/C Ratio	0.02	0.44		0.02	0.44		0.20	0.20		0.20	0.20	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	37	1576		37	1518		280	346		262	315	
v/s Ratio Prot	c0.01	0.14		0.01	c0.16			0.01			0.01	
v/s Ratio Perm							0.02			c0.10		
v/c Ratio	0.35	0.32		0.30	0.37		0.08	0.05		0.51	0.05	
Uniform Delay, d1	18.7	7.0		18.7	7.1		12.6	12.6		13.8	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.1		3.3	0.2		0.1	0.0		1.3	0.1	
Delay (s)	22.9	7.1		21.9	7.3		12.7	12.6		15.1	12.6	
Level of Service	C	A		C	A		B	B		B	B	
Approach Delay (s)		7.5			7.6			12.6			14.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	36.6%	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)	245	7	223	1	4	2	141	277	0	1	229	203
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	4.5		4.0	4.8	
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	0.85		1.00	0.85	1.00	1.00		1.00	0.93	
Flt Protected		0.95	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793	1615		1881	1615	1770	3574		1799	3305	
Flt Permitted		0.73	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1371	1615		1817	1615	1770	3574		1799	3305	
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)	266	8	242	1	4	2	153	301	0	1	249	221
RTOR Reduction (vph)	0	0	163	0	0	1	0	0	0	0	164	0
Lane Group Flow (vph)	0	274	79	0	5	1	153	301	0	1	306	0
Confl. Peds. (#/hr)	1		5	5		1	1		4	4		1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	1%	0%
Turn Type	Perm		Prot	Perm		Prot	Prot			Prot		
Protected Phases		8	8		4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		16.1	16.1		16.1	16.1	7.8	20.2		0.8	12.9	
Effective Green, g (s)		16.1	16.1		16.1	16.1	7.8	20.2		0.8	12.9	
Actuated g/C Ratio		0.32	0.32		0.32	0.32	0.16	0.41		0.02	0.26	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.5		4.0	4.8	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	3.0		2.5	3.0	
Lane Grp Cap (vph)		445	524		590	524	278	1456		29	860	
v/s Ratio Prot			0.05			0.00	c0.09	0.08		0.00	c0.09	
v/s Ratio Perm		c0.20			0.00							
v/c Ratio		0.62	0.15		0.01	0.00	0.55	0.21		0.03	0.36	
Uniform Delay, d1		14.1	11.9		11.3	11.3	19.3	9.5		24.0	15.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2	0.1		0.0	0.0	1.9	0.1		0.4	0.3	
Delay (s)		16.3	12.0		11.3	11.3	21.2	9.6		24.4	15.2	
Level of Service		B	B		B	B	C	A		C	B	
Approach Delay (s)		14.3			11.3			13.5			15.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	52.5%	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	619	211	391	451	0	0	0	0	184	9	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.0	4.5					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frpb, ped/bikes		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
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)		5187	1599	3367	3574					1698	1694	1615
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		5187	1599	3367	3574					1698	1694	1615
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	680	232	430	496	0	0	0	0	202	10	188
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	0	0	0	165
Lane Group Flow (vph)	0	680	122	430	496	0	0	0	0	105	107	23
Confl. Peds. (#/hr)	2		4	4		2	12					12
Confl. Bikes (#/hr)				1	1							
Heavy Vehicles (%)	0%	0%	1%	4%	1%	0%	0%	0%	0%	1%	11%	0%
Turn Type			Prot	Prot						Perm		Prot
Protected Phases		2	2	1	6						4	4
Permitted Phases										4		
Actuated Green, G (s)		41.9	41.9	14.7	60.6					9.9	9.9	9.9
Effective Green, g (s)		41.9	41.9	14.7	60.6					9.9	9.9	9.9
Actuated g/C Ratio		0.52	0.52	0.18	0.76					0.12	0.12	0.12
Clearance Time (s)		4.5	4.5	4.0	4.5					5.0	5.0	5.0
Vehicle Extension (s)		4.2	4.2	2.3	4.2					2.3	2.3	2.3
Lane Grp Cap (vph)		2717	837	619	2707					210	210	200
v/s Ratio Prot		c0.13	0.08	c0.13	0.14							0.01
v/s Ratio Perm										0.06	0.06	
v/c Ratio		0.25	0.15	0.69	0.18					0.50	0.51	0.12
Uniform Delay, d1		10.4	9.8	30.6	2.7					32.7	32.8	31.2
Progression Factor		1.00	1.00	0.63	0.25					1.00	1.00	1.00
Incremental Delay, d2		0.2	0.4	2.8	0.1					1.1	1.1	0.2
Delay (s)		10.7	10.2	22.2	0.8					33.8	33.9	31.3
Level of Service		B	B	C	A					C	C	C
Approach Delay (s)		10.5			10.7			0.0			32.7	
Approach LOS		B			B			A			C	

Intersection Summary					
HCM Average Control Delay	14.6	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.39				
Actuated Cycle Length (s)	80.0	Sum of lost time (s)		13.5	
Intersection Capacity Utilization	55.8%	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)	213	584	0	0	720	306	120	339	512	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5			4.5	4.5	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.91	0.91	1.00			
Frpb, ped/bikes	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			
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	1.00	1.00			
Satd. Flow (prot)	3467	3610			5036	1599	1609	3384	1583			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3467	3610			5036	1599	1609	3384	1583			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	229	628	0	0	774	329	129	365	551	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	199	0	0	102	0	0	0
Lane Group Flow (vph)	229	628	0	0	774	130	116	378	449	0	0	0
Confl. Peds. (#/hr)			6	6			1					1
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	1%	0%	0%	0%	3%	1%	2%	2%	2%	0%	0%	0%
Turn Type	Prot					Prot	Perm		Prot			
Protected Phases	5	2			6	6		8	8			
Permitted Phases							8					
Actuated Green, G (s)	9.1	43.3			30.2	30.2	27.2	27.2	27.2			
Effective Green, g (s)	9.1	43.3			30.2	30.2	27.2	27.2	27.2			
Actuated g/C Ratio	0.11	0.54			0.38	0.38	0.34	0.34	0.34			
Clearance Time (s)	4.0	4.5			4.5	4.5	5.0	5.0	5.0			
Vehicle Extension (s)	2.3	4.2			4.2	4.2	2.3	2.3	2.3			
Lane Grp Cap (vph)	394	1954			1901	604	547	1151	538			
v/s Ratio Prot	c0.07	0.17			c0.15	0.08			c0.28			
v/s Ratio Perm							0.07	0.11				
v/c Ratio	0.58	0.32			0.41	0.21	0.21	0.33	0.83			
Uniform Delay, d1	33.6	10.2			18.3	16.9	18.8	19.6	24.3			
Progression Factor	0.94	1.70			1.17	2.88	1.00	1.00	1.00			
Incremental Delay, d2	1.6	0.4			0.6	0.8	0.1	0.1	10.4			
Delay (s)	33.2	17.7			22.0	49.3	18.9	19.7	34.7			
Level of Service	C	B			C	D	B	B	C			
Approach Delay (s)		21.9			30.2			27.5			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.8%	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	738	358	36	405	0	389	0	119	25	77	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.0	4.8		4.0		4.0	4.1	4.1	4.1
Lane Util. Factor		0.91		1.00	0.91		0.97		1.00	1.00	1.00	1.00
Frpb, ped/bikes		0.99		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		0.95		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		4849		1752	5036		3433		1599	1736	1845	1599
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		4849		1752	5036		3433		1599	1736	1845	1599
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	820	398	40	450	0	432	0	132	28	86	264
RTOR Reduction (vph)	0	87	0	0	0	0	0	0	108	0	0	212
Lane Group Flow (vph)	0	1131	0	40	450	0	432	0	24	28	86	52
Confl. Peds. (#/hr)	3		1	1		3			11	11		
Confl. Bikes (#/hr)					1							1
Heavy Vehicles (%)	0%	1%	1%	3%	3%	0%	2%	0%	1%	4%	3%	1%
Turn Type				Prot			Prot		custom	Split		Prot
Protected Phases		2		1	6		8		8	4	4	4
Permitted Phases												
Actuated Green, G (s)		35.7		4.7	44.1		14.6		14.6	8.4	8.4	8.4
Effective Green, g (s)		35.7		4.7	44.1		14.6		14.6	8.4	8.4	8.4
Actuated g/C Ratio		0.45		0.06	0.55		0.18		0.18	0.11	0.11	0.11
Clearance Time (s)		4.5		4.0	4.8		4.0		4.0	4.1	4.1	4.1
Vehicle Extension (s)		4.0		2.5	4.0		2.5		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		2164		103	2776		627		292	182	194	168
v/s Ratio Prot		c0.23		c0.02	0.09		c0.13		0.02	0.02	c0.05	0.03
v/s Ratio Perm												
v/c Ratio		0.52		0.39	0.16		0.69		0.08	0.15	0.44	0.31
Uniform Delay, d1		16.0		36.3	8.8		30.6		27.1	32.6	33.6	33.1
Progression Factor		0.44		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8		1.8	0.1		2.9		0.1	0.3	1.2	0.8
Delay (s)		7.9		38.0	9.0		33.5		27.2	32.9	34.8	33.9
Level of Service		A		D	A		C		C	C	C	C
Approach Delay (s)		7.9			11.3			32.0			34.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	18	234	40	14	424
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	49	20	257	44	15	466
Pedestrians	12					5
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	1					0
Right turn flare (veh)		1				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	788	296			313	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	788	296			313	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	86	97			99	
cM capacity (veh/h)	352	712			1207	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	301	481
Volume Left	49	0	15
Volume Right	20	44	0
cSH	493	1700	1207
Volume to Capacity	0.14	0.18	0.01
Queue Length 95th (ft)	12	0	1
Control Delay (s)	15.0	0.0	0.4
Lane LOS	B		A
Approach Delay (s)	15.0	0.0	0.4
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	45.2%	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)	13	39	43	40	51	82	39	899	71	72	1739	13
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	4.8	4.8	4.0	4.8	
Lane Util. Factor		1.00			1.00		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00	0.93	1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.94			0.94		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1669			1733		1752	3505	1496	1805	3570	
Flt Permitted		0.90			0.87		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1508			1528		1752	3505	1496	1805	3570	
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)	14	41	45	42	54	86	41	946	75	76	1831	14
RTOR Reduction (vph)	0	36	0	0	40	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	64	0	0	142	0	41	946	62	76	1845	0
Confl. Peds. (#/hr)	3		5	5		3			17			
Confl. Bikes (#/hr)	1							4			1	
Heavy Vehicles (%)	8%	8%	2%	0%	2%	0%	3%	3%	0%	0%	1%	0%
Turn Type	Perm			Perm			Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)		14.6			14.6		5.2	74.4	74.4	8.2	77.4	
Effective Green, g (s)		14.6			14.6		5.2	74.4	74.4	8.2	77.4	
Actuated g/C Ratio		0.13			0.13		0.05	0.68	0.68	0.07	0.70	
Clearance Time (s)		4.0			4.0		4.0	4.8	4.8	4.0	4.8	
Vehicle Extension (s)		2.5			2.5		2.3	4.8	4.8	2.3	4.8	
Lane Grp Cap (vph)		200			203		83	2371	1012	135	2512	
v/s Ratio Prot							0.02	0.27		c0.04	c0.52	
v/s Ratio Perm		0.04			c0.09				0.04			
v/c Ratio		0.32			0.70		0.49	0.40	0.06	0.56	0.73	
Uniform Delay, d1		43.2			45.6		51.1	7.9	6.0	49.2	10.0	
Progression Factor		1.00			1.00		1.43	0.15	0.01	1.00	1.00	
Incremental Delay, d2		0.7			9.7		2.5	0.5	0.1	3.9	1.9	
Delay (s)		43.9			55.3		75.6	1.6	0.2	53.0	11.9	
Level of Service		D			E		E	A	A	D	B	
Approach Delay (s)		43.9			55.3			4.4			13.6	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	79.1%	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												
Volume (veh/h)	101	7	73	2	6	2	60	278	1	3	375	114
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	115	8	83	2	7	2	68	316	1	3	426	130
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	957	953	493	1040	1017	317	557			318		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	957	953	493	1040	1017	317	557			318		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	47	97	86	99	97	100	93			100		
cM capacity (veh/h)	216	242	573	166	222	727	1013			1252		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	206	11	385	559
Volume Left	115	2	68	3
Volume Right	83	2	1	130
cSH	290	239	1013	1252
Volume to Capacity	0.71	0.05	0.07	0.00
Queue Length 95th (ft)	125	4	5	0
Control Delay (s)	42.9	20.8	2.2	0.1
Lane LOS	E	C	A	A
Approach Delay (s)	42.9	20.8	2.2	0.1
Approach LOS	E	C		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	72.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	19	9	22	22	55	7	182	22	63	394	37
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	23	20	10	24	24	59	8	196	24	68	424	40
Pedestrians		2			2			7			2	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	877	817	453	831	826	212	465			221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	877	817	453	831	826	212	465			221		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	90	93	98	91	92	93	99			95		
cM capacity (veh/h)	220	289	584	257	291	818	1034			1345		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	106	227	531
Volume Left	23	24	8	68
Volume Right	10	59	24	40
cSH	277	433	1034	1345
Volume to Capacity	0.19	0.25	0.01	0.05
Queue Length 95th (ft)	17	24	1	4
Control Delay (s)	21.0	16.0	0.4	1.5
Lane LOS	C	C	A	A
Approach Delay (s)	21.0	16.0	0.4	1.5
Approach LOS	C	C		

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	54.8%	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)	28	53	62	23	81	17	70	1002	35	12	1647	87
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.94
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	0.92		1.00	0.97		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)	1736	1677		1805	1734		1805	3539	1572	1671	3539	1517
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)	1736	1677		1805	1734		1805	3539	1572	1671	3539	1517
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)	29	55	65	24	84	18	73	1044	36	12	1716	91
RTOR Reduction (vph)	0	43	0	0	8	0	0	0	6	0	0	12
Lane Group Flow (vph)	29	77	0	24	94	0	73	1044	30	12	1716	79
Confl. Peds. (#/hr)			7			8			2			12
Confl. Bikes (#/hr)								4			1	
Heavy Vehicles (%)	4%	4%	2%	0%	5%	12%	0%	2%	0%	8%	2%	0%
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)	4.6	10.9		4.3	10.6		8.4	75.6	75.6	2.4	69.6	69.6
Effective Green, g (s)	4.6	10.9		4.3	10.6		8.4	75.6	75.6	2.4	69.6	69.6
Actuated g/C Ratio	0.04	0.10		0.04	0.10		0.08	0.69	0.69	0.02	0.63	0.63
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	73	166		71	167		138	2432	1080	36	2239	960
v/s Ratio Prot	c0.02	0.05		0.01	c0.05		c0.04	0.29		0.01	c0.48	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.40	0.46		0.34	0.56		0.53	0.43	0.03	0.33	0.77	0.08
Uniform Delay, d1	51.3	46.8		51.5	47.5		48.9	7.6	5.5	53.0	14.4	7.8
Progression Factor	1.00	1.00		1.00	1.00		1.11	0.37	0.07	0.68	0.41	0.12
Incremental Delay, d2	2.1	1.2		1.6	3.1		2.0	0.5	0.0	2.2	1.8	0.1
Delay (s)	53.4	48.0		53.1	50.6		56.3	3.3	0.4	38.1	7.7	1.1
Level of Service	D	D		D	D		E	A	A	D	A	A
Approach Delay (s)		49.0			51.1			6.6			7.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.8
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	59	45	51	325	482	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	63	48	55	349	518	54
Pedestrians				2	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1005	547	572			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1005	547	572			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	91	95			
cM capacity (veh/h)	255	532	1011			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	63	48	404	572
Volume Left	63	0	55	0
Volume Right	0	48	0	54
cSH	255	532	1011	1700
Volume to Capacity	0.25	0.09	0.05	0.34
Queue Length 95th (ft)	24	7	4	0
Control Delay (s)	23.7	12.4	1.7	0.0
Lane LOS	C	B	A	
Approach Delay (s)	18.8		1.7	0.0
Approach LOS	C			

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	27	19	42	54	41	18	150	26	69	300	33
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	27	29	20	45	58	44	19	161	28	74	323	35

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	76	147	209	432
Volume Left (vph)	27	45	19	74
Volume Right (vph)	20	44	28	35
Hadj (s)	-0.07	-0.08	-0.02	0.01
Departure Headway (s)	5.7	5.6	5.1	4.9
Degree Utilization, x	0.12	0.23	0.30	0.58
Capacity (veh/h)	534	575	659	715
Control Delay (s)	9.5	10.2	10.3	14.5
Approach Delay (s)	9.5	10.2	10.3	14.5
Approach LOS	A	B	B	B

Intersection Summary				
Delay		12.3		
HCM Level of Service		B		
Intersection Capacity Utilization		52.4%	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)	76	145	82	164	136	64	68	934	140	74	1388	65
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.91
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	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)	1805	1759		1787	1787		1787	3505	1538	1752	3539	1467
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)	1805	1759		1787	1787		1787	3505	1538	1752	3539	1467
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)	80	153	86	173	143	67	72	983	147	78	1461	68
RTOR Reduction (vph)	0	20	0	0	15	0	0	0	56	0	0	12
Lane Group Flow (vph)	80	219	0	173	195	0	72	983	91	78	1461	56
Confl. Peds. (#/hr)			12			23			6			24
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	0%	2%	0%	1%	0%	0%	1%	3%	1%	3%	2%	0%
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)	8.4	19.0		15.2	25.8		7.7	51.2	51.2	7.8	51.3	51.3
Effective Green, g (s)	8.4	19.0		15.2	25.8		7.7	51.2	51.2	7.8	51.3	51.3
Actuated g/C Ratio	0.08	0.17		0.14	0.23		0.07	0.47	0.47	0.07	0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	138	304		247	419		125	1631	716	124	1650	684
v/s Ratio Prot	0.04	c0.12		c0.10	0.11		0.04	0.28		c0.04	c0.41	
v/s Ratio Perm									0.06			0.04
v/c Ratio	0.58	0.72		0.70	0.46		0.58	0.60	0.13	0.63	0.89	0.08
Uniform Delay, d1	49.1	43.0		45.2	36.2		49.6	21.8	16.7	49.7	26.7	16.3
Progression Factor	1.00	1.00		1.00	1.00		1.33	0.58	0.53	0.97	1.12	1.57
Incremental Delay, d2	4.3	7.4		7.7	0.5		3.9	1.4	0.3	5.4	5.2	0.2
Delay (s)	53.4	50.4		52.9	36.6		69.7	14.1	9.1	53.3	35.0	25.7
Level of Service	D	D		D	D		E	B	A	D	C	C
Approach Delay (s)		51.1			44.0			16.8			35.5	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	44	56	375	74	90	501
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	47	60	399	79	96	533
Pedestrians			1			
Lane Width (ft)			12.0			
Walking Speed (ft/s)			4.0			
Percent Blockage			0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1164	438			478	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1164	438			478	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	90			91	
cM capacity (veh/h)	193	623			1074	

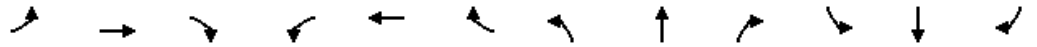
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	106	478	629
Volume Left	47	0	96
Volume Right	60	79	0
cSH	315	1700	1074
Volume to Capacity	0.34	0.28	0.09
Queue Length 95th (ft)	36	0	7
Control Delay (s)	22.2	0.0	2.3
Lane LOS	C		A
Approach Delay (s)	22.2	0.0	2.3
Approach LOS	C		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	71.4%	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 (veh/h)	0	0	0	49	2	42	0	177	68	51	296	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	58	2	50	0	211	81	61	352	0
Pedestrians								1				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	776	765	353	726	725	251	352			292		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	776	765	353	726	725	251	352			292		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	82	99	94	100			95		
cM capacity (veh/h)	285	320	694	322	337	787	1218			1282		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	111	292	413
Volume Left	58	0	61
Volume Right	50	81	0
cSH	440	1700	1282
Volume to Capacity	0.25	0.17	0.05
Queue Length 95th (ft)	25	0	4
Control Delay (s)	15.9	0.0	1.6
Lane LOS	C		A
Approach Delay (s)	15.9	0.0	1.6
Approach LOS	C		

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	47.2%	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)	48	89	48	137	105	97	46	1165	97	122	1561	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.95	1.00	1.00	0.94
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		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)	1746	1739		1769	1727		1736	3539	1492	1805	3539	1491
Flt Permitted	0.34	1.00		0.54	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	631	1739		1008	1727		1736	3539	1492	1805	3539	1491
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)	50	93	50	143	109	101	48	1214	101	127	1626	44
RTOR Reduction (vph)	0	18	0	0	32	0	0	0	20	0	0	7
Lane Group Flow (vph)	50	125	0	143	178	0	48	1214	81	127	1626	37
Confl. Peds. (#/hr)	16		10	10		16			9			12
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	3%	2%	1%	0%	1%	4%	2%	3%	0%	2%	2%
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	17.9	17.9		18.4	18.4		6.5	66.4	66.4	12.4	72.3	72.3
Effective Green, g (s)	17.9	17.9		18.4	18.4		6.5	66.4	66.4	12.4	72.3	72.3
Actuated g/C Ratio	0.16	0.16		0.17	0.17		0.06	0.60	0.60	0.11	0.66	0.66
Clearance Time (s)	4.5	4.5		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	3.5	3.5		2.5	2.5		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	103	283		169	289		103	2136	901	203	2326	980
v/s Ratio Prot		0.07			0.10		0.03	0.34		c0.07	c0.46	
v/s Ratio Perm	0.08			c0.14					0.05			0.02
v/c Ratio	0.49	0.44		0.85	0.62		0.47	0.57	0.09	0.63	0.70	0.04
Uniform Delay, d1	41.9	41.5		44.4	42.5		50.1	13.2	9.1	46.6	12.0	6.6
Progression Factor	1.00	1.00		1.00	1.00		0.76	1.92	2.51	1.21	0.59	0.28
Incremental Delay, d2	4.2	1.3		29.9	3.3		1.7	1.0	0.2	3.0	1.1	0.0
Delay (s)	46.1	42.8		74.4	45.9		39.8	26.2	23.1	59.6	8.1	1.9
Level of Service	D	D		E	D		D	C	C	E	A	A
Approach Delay (s)		43.7			57.4			26.5			11.6	
Approach LOS		D			E			C			B	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	31	217	8	18	21	185	327	5	24	515	80
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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			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	
Frt		0.90			0.94		1.00	1.00		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1654			1731		1805	1877		1671	1846	
Flt Permitted		0.93			0.94		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1551			1637		1805	1877		1671	1846	
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)	61	32	226	8	19	22	193	341	5	25	536	83
RTOR Reduction (vph)	0	82	0	0	17	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	237	0	0	32	0	193	346	0	25	615	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	2%	0%	1%	0%	0%	5%	0%	1%	0%	8%	1%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		18.3			18.3		15.1	49.3		2.6	36.8	
Effective Green, g (s)		18.3			18.3		15.1	49.3		2.6	36.8	
Actuated g/C Ratio		0.22			0.22		0.18	0.59		0.03	0.44	
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)		339			358		326	1106		52	812	
v/s Ratio Prot							c0.11	0.18		0.01	c0.33	
v/s Ratio Perm		c0.15			0.02							
v/c Ratio		0.70			0.09		0.59	0.31		0.48	0.76	
Uniform Delay, d1		30.2			26.1		31.5	8.7		39.9	19.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.2			0.1		2.9	0.2		6.9	4.1	
Delay (s)		36.3			26.2		34.3	8.8		46.7	23.7	
Level of Service		D			C		C	A		D	C	
Approach Delay (s)		36.3			26.2			18.0			24.6	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	13.5
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)	25	46	42	85	39	116	22	1169	96	83	1667	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes		1.00			0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1686			1768	1528	1805	3539	1511	1770	3574	1469
Flt Permitted		0.91			0.61	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1552			1111	1528	1805	3539	1511	1770	3574	1469
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	26	47	43	88	40	120	23	1205	99	86	1719	19
RTOR Reduction (vph)	0	22	0	0	0	103	0	0	18	0	0	2
Lane Group Flow (vph)	0	94	0	0	128	17	23	1205	81	86	1719	17
Confl. Peds. (#/hr)	3		17	17		3			5			5
Confl. Bikes (#/hr)		1	1					1	1			
Heavy Vehicles (%)	4%	4%	5%	4%	0%	4%	0%	2%	3%	2%	1%	6%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			6
Actuated Green, G (s)		15.4			15.4	15.4	3.0	73.0	73.0	8.8	78.8	78.8
Effective Green, g (s)		15.4			15.4	15.4	3.0	73.0	73.0	8.8	78.8	78.8
Actuated g/C Ratio		0.14			0.14	0.14	0.03	0.66	0.66	0.08	0.72	0.72
Clearance Time (s)		4.0			4.0	4.0	4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)		217			156	214	49	2349	1003	142	2560	1052
v/s Ratio Prot							0.01	0.34		c0.05	c0.48	
v/s Ratio Perm		0.06			c0.12	0.01			0.05			0.01
v/c Ratio		0.43			0.82	0.08	0.47	0.51	0.08	0.61	0.67	0.02
Uniform Delay, d1		43.3			46.0	41.1	52.7	9.4	6.6	48.9	8.5	4.5
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.97	0.70	1.12
Incremental Delay, d2		1.0			27.4	0.1	4.1	0.8	0.2	4.1	1.0	0.0
Delay (s)		44.3			73.4	41.2	56.8	10.2	6.7	51.6	7.0	5.0
Level of Service		D			E	D	E	B	A	D	A	A
Approach Delay (s)		44.3			57.8			10.8			9.1	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	10	5	31	11	41	3	125	31	63	254	9
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)	1	11	5	34	12	45	3	136	34	68	276	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	17	90	173	354
Volume Left (vph)	1	34	3	68
Volume Right (vph)	5	45	34	10
Hadj (s)	-0.18	-0.22	-0.10	0.04
Departure Headway (s)	5.1	4.9	4.5	4.4
Degree Utilization, x	0.02	0.12	0.21	0.43
Capacity (veh/h)	626	660	772	791
Control Delay (s)	8.2	8.6	8.7	10.7
Approach Delay (s)	8.2	8.6	8.7	10.7
Approach LOS	A	A	A	B

Intersection Summary				
Delay	9.8			
HCM Level of Service	A			
Intersection Capacity Utilization	47.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	55	25	92	68	132	21	1122	98	134	1494	39
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	1.00	0.97	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	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1858	1582		1828	1531	1805	3539	1547	1787	3574	1548
Flt Permitted		0.66	1.00		0.68	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1247	1582		1277	1531	1805	3539	1547	1787	3574	1548
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	32	59	27	99	73	142	23	1206	105	144	1606	42
RTOR Reduction (vph)	0	0	23	0	0	87	0	0	22	0	0	5
Lane Group Flow (vph)	0	91	4	0	172	55	23	1206	83	144	1606	37
Confl. Peds. (#/hr)	12		5	5		12			3			5
Confl. Bikes (#/hr)		1						2				
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	0%	2%	1%	1%	1%	0%
Turn Type	Perm		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		22.4	22.4		22.4	22.4	2.4	106.0	106.0	6.6	110.2	110.2
Effective Green, g (s)		22.4	22.4		22.4	22.4	2.4	106.0	106.0	6.6	110.2	110.2
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.02	0.72	0.72	0.04	0.75	0.75
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)		189	240		194	232	29	2538	1109	80	2665	1154
v/s Ratio Prot							0.01	0.34		c0.08	c0.45	
v/s Ratio Perm		0.07	0.00		c0.13	0.04			0.05			0.02
v/c Ratio		0.48	0.02		0.89	0.24	0.79	0.48	0.08	1.80	0.60	0.03
Uniform Delay, d1		57.4	53.3		61.5	55.2	72.5	9.0	6.2	70.6	8.7	4.9
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		1.4	0.0		34.7	0.4	80.8	0.6	0.1	405.0	1.0	0.1
Delay (s)		58.8	53.4		96.2	55.6	153.3	9.6	6.4	475.6	9.7	4.9
Level of Service		E	D		F	E	F	A	A	F	A	A
Approach Delay (s)		57.5			77.8			11.8			47.0	
Approach LOS		E			E			B			D	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	147.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	256	60	28	266	130	89	296	33	138	313	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		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	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99			1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1833			1891	1599	1787	1855		1805	1822	
Flt Permitted		0.93			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1710			1805	1599	1787	1855		1805	1822	
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)	47	267	62	29	277	135	93	308	34	144	326	65
RTOR Reduction (vph)	0	5	0	0	0	57	0	3	0	0	6	0
Lane Group Flow (vph)	0	371	0	0	306	78	93	339	0	144	385	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)		1										
Heavy Vehicles (%)	0%	1%	0%	0%	0%	1%	1%	1%	0%	0%	2%	0%
Turn Type	Perm			Perm		Prot	Prot			Prot		
Protected Phases		4			8	8	5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		25.9			25.9	25.9	7.9	24.1		12.0	28.2	
Effective Green, g (s)		25.9			25.9	25.9	7.9	24.1		12.0	28.2	
Actuated g/C Ratio		0.35			0.35	0.35	0.11	0.33		0.16	0.38	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)		599			632	560	191	604		293	694	
v/s Ratio Prot						0.05	0.05	0.18		c0.08	c0.21	
v/s Ratio Perm		c0.22			0.17							
v/c Ratio		0.62			0.48	0.14	0.49	0.56		0.49	0.56	
Uniform Delay, d1		20.0			18.8	16.4	31.1	20.6		28.2	18.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9			0.6	0.1	1.4	2.0		0.9	1.6	
Delay (s)		21.9			19.4	16.5	32.6	22.5		29.2	19.6	
Level of Service		C			B	B	C	C		C	B	
Approach Delay (s)		21.9			18.5			24.7			22.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	101	81	82	43	92	197
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	107	86	87	46	98	210
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			233			
pX, platoon unblocked						
vC, conflicting volume	133				411	110
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133				411	110
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				82	78
cM capacity (veh/h)	1464				550	949

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	194	133	307
Volume Left	107	0	98
Volume Right	0	46	210
cSH	1464	1700	1392
Volume to Capacity	0.07	0.08	0.22
Queue Length 95th (ft)	6	0	21
Control Delay (s)	4.5	0.0	10.9
Lane LOS	A		B
Approach Delay (s)	4.5	0.0	10.9
Approach LOS			B

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	31.9%	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)	54	28	64	57	31	75	30	1156	63	24	1384	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0	4.8	4.8	3.5	4.8	4.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1788	1587		1816	1591	1805	3505	1578	1805	3539	1517
Flt Permitted		0.66	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1218	1587		1301	1591	1805	3505	1578	1805	3539	1517
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)	57	29	67	60	33	79	32	1217	66	25	1457	58
RTOR Reduction (vph)	0	0	60	0	0	71	0	0	12	0	0	6
Lane Group Flow (vph)	0	86	7	0	93	8	32	1217	54	25	1457	52
Confl. Peds. (#/hr)	2		4	4		2			1			1
Confl. Bikes (#/hr)					1			1			1	
Heavy Vehicles (%)	2%	4%	0%	0%	3%	0%	0%	3%	0%	0%	2%	4%
Turn Type	Perm		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		11.8	11.8		11.8	11.8	9.1	81.6	81.6	4.3	76.3	76.3
Effective Green, g (s)		11.8	11.8		11.8	11.8	9.1	81.6	81.6	4.3	76.3	76.3
Actuated g/C Ratio		0.11	0.11		0.11	0.11	0.08	0.74	0.74	0.04	0.69	0.69
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.8	4.8	3.5	4.8	4.8
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)		131	170		140	171	149	2600	1171	71	2455	1052
v/s Ratio Prot							0.02	c0.35		0.01	c0.41	
v/s Ratio Perm		0.07	0.00		c0.07	0.01			0.03			0.03
v/c Ratio		0.66	0.04		0.66	0.05	0.21	0.47	0.05	0.35	0.59	0.05
Uniform Delay, d1		47.2	44.0		47.2	44.1	47.1	5.6	3.8	51.5	8.8	5.3
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		10.1	0.1		10.2	0.1	0.4	0.6	0.1	1.8	1.1	0.1
Delay (s)		57.3	44.1		57.4	44.2	47.5	6.2	3.9	53.2	9.8	5.4
Level of Service		E	D		E	D	D	A	A	D	A	A
Approach Delay (s)		51.5			51.3			7.1			10.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	14	318	395	160	119	9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	338	420	170	127	10

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	353	590	136
Volume Left (vph)	15	0	127
Volume Right (vph)	0	170	10
Hadj (s)	0.06	-0.14	0.19
Departure Headway (s)	5.1	4.7	6.3
Degree Utilization, x	0.50	0.77	0.24
Capacity (veh/h)	673	755	525
Control Delay (s)	13.2	21.4	11.2
Approach Delay (s)	13.2	21.4	11.2
Approach LOS	B	C	B

Intersection Summary			
Delay	17.5		
HCM Level of Service	C		
Intersection Capacity Utilization	44.3%	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)	69	440	536	65	87	138
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	72	458	558	68	91	144

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	530	626	234
Volume Left (vph)	72	0	91
Volume Right (vph)	0	68	144
Hadj (s)	0.08	-0.05	-0.28
Departure Headway (s)	5.8	5.5	6.6
Degree Utilization, x	0.85	0.96	0.43
Capacity (veh/h)	611	626	533
Control Delay (s)	32.8	49.6	14.3
Approach Delay (s)	32.8	49.6	14.3
Approach LOS	D	E	B

Intersection Summary			
Delay	37.3		
HCM Level of Service	E		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	272	84	49	272	40	136	202	38	126	419	194
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	
Lane Util. Factor	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		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1664	1821		1765	1836		1787	1821		1777	1768	
Flt Permitted	0.33	1.00		0.26	1.00		0.13	1.00		0.58	1.00	
Satd. Flow (perm)	582	1821		492	1836		252	1821		1088	1768	
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)	164	299	92	54	299	44	149	222	42	138	460	213
RTOR Reduction (vph)	0	10	0	0	5	0	0	5	0	0	13	0
Lane Group Flow (vph)	164	381	0	54	338	0	149	259	0	138	660	0
Confl. Peds. (#/hr)	4		3	3		4	5		6	6		5
Heavy Vehicles (%)	8%	0%	0%	2%	1%	2%	1%	1%	3%	1%	1%	2%
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.8	28.8		28.8	28.8		57.9	46.1		51.5	42.9	
Effective Green, g (s)	28.8	28.8		28.8	28.8		57.9	46.1		51.5	42.9	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.60	0.48		0.53	0.44	
Clearance Time (s)	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	3.0		2.5	3.0	
Lane Grp Cap (vph)	173	541		146	545		337	865		639	782	
v/s Ratio Prot		0.21			0.18		c0.05	0.14		0.02	c0.37	
v/s Ratio Perm	c0.28			0.11			0.21			0.10		
v/c Ratio	0.95	0.70		0.37	0.62		0.44	0.30		0.22	0.84	
Uniform Delay, d1	33.4	30.3		26.9	29.4		14.7	15.6		11.6	24.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	52.7	3.9		1.2	1.9		0.7	0.2		0.1	8.3	
Delay (s)	86.1	34.2		28.1	31.3		15.4	15.8		11.7	32.4	
Level of Service	F	C		C	C		B	B		B	C	
Approach Delay (s)		49.5			30.9			15.6			28.9	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	97.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	163	184	216	86	125	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	177	200	235	93	136	162

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	377	328	298
Volume Left (vph)	177	235	0
Volume Right (vph)	200	0	162
Hadj (s)	-0.22	0.20	-0.30
Departure Headway (s)	5.4	5.7	5.2
Degree Utilization, x	0.56	0.52	0.43
Capacity (veh/h)	635	601	645
Control Delay (s)	15.0	14.5	12.2
Approach Delay (s)	15.0	14.5	12.2
Approach LOS	B	B	B

Intersection Summary			
Delay	14.0		
HCM Level of Service	B		
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	330	44	218	288	73	327
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	379	51	251	331	84	376

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	430	251	331	460
Volume Left (vph)	379	0	0	84
Volume Right (vph)	51	0	331	0
Hadj (s)	0.12	0.03	-0.55	0.07
Departure Headway (s)	6.1	6.2	3.2	5.9
Degree Utilization, x	0.72	0.43	0.29	0.75
Capacity (veh/h)	565	537	1113	593
Control Delay (s)	23.4	13.8	7.5	24.2
Approach Delay (s)	23.4	10.2		24.2
Approach LOS	C	B		C

Intersection Summary			
Delay	18.4		
HCM Level of Service	C		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	305	48	118	209	301	339
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	343	54	133	235	338	381

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total (vph)	343	54	367	338	381
Volume Left (vph)	343	0	133	0	0
Volume Right (vph)	0	54	0	0	381
Hadj (s)	0.53	-0.70	0.09	0.03	-0.67
Departure Headway (s)	7.8	6.6	6.9	6.8	6.1
Degree Utilization, x	0.74	0.10	0.70	0.64	0.65
Capacity (veh/h)	445	527	507	516	569
Control Delay (s)	29.1	9.1	24.7	20.1	18.5
Approach Delay (s)	26.4		24.7	19.2	
Approach LOS	D		C	C	

Intersection Summary			
Delay	22.5		
HCM Level of Service	C		
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	0	35	1	152	1	145	25	74	233	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	1	0	41	1	177	1	169	29	86	271	0
Pedestrians		1						1			1	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	808	644	273	630	629	184	272			198		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	808	644	273	630	629	184	272			198		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	89	100	80	100			94		
cM capacity (veh/h)	227	369	769	368	376	863	1302			1381		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	219	199	357
Volume Left	0	41	1	86
Volume Right	0	177	29	0
cSH	369	686	1302	1381
Volume to Capacity	0.00	0.32	0.00	0.06
Queue Length 95th (ft)	0	34	0	5
Control Delay (s)	14.8	12.7	0.1	2.3
Lane LOS	B	B	A	A
Approach Delay (s)	14.8	12.7	0.1	2.3
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	53.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	744	110	597	488	0	0	0	903	0	0	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	4.5				4.0			5.5
Lane Util. Factor		1.00		1.00	1.00				0.88			1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00		1.00	1.00				1.00			1.00
Frt		0.98		1.00	1.00				0.85			0.86
Flt Protected		1.00		0.95	1.00				1.00			1.00
Satd. Flow (prot)		1842		1719	1810				2538			1611
Flt Permitted		1.00		0.95	1.00				1.00			1.00
Satd. Flow (perm)		1842		1719	1810				2538			1611
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	791	117	635	519	0	0	0	961	0	0	476
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	902	0	635	519	0	0	0	961	0	0	427
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)		1	1	1	2							
Heavy Vehicles (%)	0%	1%	1%	5%	5%	0%	0%	0%	12%	0%	0%	2%
Turn Type				Prot					Free			custom
Protected Phases		2		1	6							5
Permitted Phases									Free			
Actuated Green, G (s)		20.3		24.9	26.3				56.2			19.9
Effective Green, g (s)		20.3		24.9	26.3				56.2			19.9
Actuated g/C Ratio		0.36		0.44	0.47				1.00			0.35
Clearance Time (s)		5.5		5.5	4.5							5.5
Vehicle Extension (s)		2.3		2.3	4.2							2.3
Lane Grp Cap (vph)		665		762	847				2538			570
v/s Ratio Prot		c0.49		c0.37	0.29							0.26
v/s Ratio Perm									c0.38			
v/c Ratio		1.36		0.83	0.61				0.38			0.75
Uniform Delay, d1		18.0		13.8	11.2				0.0			16.0
Progression Factor		1.00		1.00	1.00				1.00			1.00
Incremental Delay, d2		170.3		7.6	1.6				0.4			4.9
Delay (s)		188.2		21.4	12.7				0.4			20.9
Level of Service		F		C	B				A			C
Approach Delay (s)		188.2			17.5			0.4			20.9	
Approach LOS		F			B			A			C	

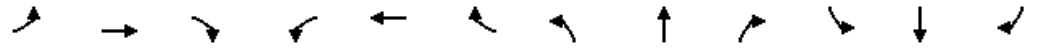
Intersection Summary			
HCM Average Control Delay	57.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	11.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	263	1432	0	0	1010	837	128	2	540	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5			4.5	4.5		5.5	4.0			
Lane Util. Factor	1.00	0.91			0.95	1.00		1.00	0.88			
Frpb, ped/bikes	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			
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)	1787	4759			3471	1482		1776	2682			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1787	4759			3471	1482		1776	2682			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	283	1540	0	0	1086	900	138	2	581	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	227	0	0	77	0	0	0
Lane Group Flow (vph)	283	1540	0	0	1086	673	0	140	504	0	0	0
Confl. Peds. (#/hr)	2		5	5		2						
Confl. Bikes (#/hr)		3			1							
Heavy Vehicles (%)	1%	9%	0%	0%	4%	9%	2%	0%	6%	0%	0%	0%
Turn Type	Prot					Prot	Split		custom			
Protected Phases	5	2			6	6	4	4	1 4			
Permitted Phases									4			
Actuated Green, G (s)	27.0	84.2			65.5	65.5		13.5	27.3			
Effective Green, g (s)	27.0	84.2			65.5	65.5		13.5	21.8			
Actuated g/C Ratio	0.22	0.70			0.55	0.55		0.11	0.18			
Clearance Time (s)	4.0	4.5			4.5	4.5		5.5				
Vehicle Extension (s)	0.5	0.5			0.5	0.5		2.3				
Lane Grp Cap (vph)	402	3339			1895	809		200	487			
v/s Ratio Prot	c0.16	0.32			0.31	c0.45		0.08	c0.19			
v/s Ratio Perm												
v/c Ratio	0.70	0.46			0.57	0.83		0.70	1.04			
Uniform Delay, d1	42.8	7.9			18.0	22.7		51.3	49.1			
Progression Factor	1.00	1.00			1.04	1.25		1.00	1.00			
Incremental Delay, d2	4.5	0.5			0.4	3.2		9.0	50.1			
Delay (s)	47.4	8.4			19.2	31.6		60.3	99.2			
Level of Service	D	A			B	C		E	F			
Approach Delay (s)		14.4			24.8			91.7			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	1686	97	74	1317	36	167	18	102	106	51	45
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	4.0	5.0	5.0	4.5	4.5		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.93	
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)	1433	3406	1161	1656	3374	1382	1556	1477		1641	1515	
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)	1433	3406	1161	1656	3374	1382	1556	1477		1641	1515	
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)	38	1833	105	80	1432	39	182	20	111	115	55	49
RTOR Reduction (vph)	0	0	26	0	0	6	0	95	0	0	27	0
Lane Group Flow (vph)	38	1833	79	80	1432	33	182	36	0	115	77	0
Confl. Peds. (#/hr)	2		3	3		2	2		5	5		2
Confl. Bikes (#/hr)					2							
Heavy Vehicles (%)	26%	6%	35%	9%	7%	14%	16%	11%	10%	10%	12%	20%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	5.8	66.4	66.4	9.3	69.9	69.9	17.3	17.3		9.5	9.5	
Effective Green, g (s)	5.8	66.4	66.4	9.3	69.9	69.9	17.3	17.3		9.5	9.5	
Actuated g/C Ratio	0.05	0.55	0.55	0.08	0.58	0.58	0.14	0.14		0.08	0.08	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.5	4.5		4.0	4.0	
Vehicle Extension (s)	2.3	4.3	4.3	2.3	4.3	4.3	2.3	2.3		2.3	2.3	
Lane Grp Cap (vph)	69	1885	642	128	1965	805	224	213		130	120	
v/s Ratio Prot	0.03	c0.54		c0.05	c0.42		c0.12	0.02		c0.07	0.05	
v/s Ratio Perm			0.07			0.02						
v/c Ratio	0.55	0.97	0.12	0.62	0.73	0.04	0.81	0.17		0.88	0.64	
Uniform Delay, d1	55.8	25.9	12.8	53.7	18.2	10.7	49.8	45.0		54.7	53.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	15.2	0.4	7.5	2.4	0.1	19.0	0.2		45.2	9.4	
Delay (s)	62.4	41.1	13.2	61.1	20.6	10.8	68.8	45.3		99.9	63.0	
Level of Service	E	D	B	E	C	B	E	D		F	E	
Approach Delay (s)		40.0			22.4			59.0			82.4	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	77.9%	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)	63	390	30	10	484	49	70	59	23	30	29	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.96		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)	1583	1734		1504	1750		1656	1450		1081	1226	1530
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1583	1734		1504	1750		1656	1450		1081	1226	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	68	419	32	11	520	53	75	63	25	32	31	147
RTOR Reduction (vph)	0	1	0	0	2	0	0	9	0	0	0	128
Lane Group Flow (vph)	68	450	0	11	571	0	75	79	0	32	31	19
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)							1				1	1
Heavy Vehicles (%)	14%	7%	27%	20%	5%	27%	9%	32%	9%	67%	55%	3%
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	6.0	46.4		0.8	41.2		6.0	12.9		3.9	10.8	10.8
Effective Green, g (s)	6.0	46.4		0.8	41.2		6.0	12.9		3.9	10.8	10.8
Actuated g/C Ratio	0.07	0.55		0.01	0.48		0.07	0.15		0.05	0.13	0.13
Clearance Time (s)	5.0	5.5		5.0	5.5		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)	0.5	2.0		0.5	2.0		0.2	3.0		0.5	1.5	1.5
Lane Grp Cap (vph)	112	947		14	848		117	220		50	156	194
v/s Ratio Prot	c0.04	0.26		0.01	c0.33		c0.05	c0.05		0.03	0.03	
v/s Ratio Perm												0.01
v/c Ratio	0.61	0.47		0.79	0.67		0.64	0.36		0.64	0.20	0.10
Uniform Delay, d1	38.4	11.8		42.0	16.8		38.5	32.3		39.9	33.2	32.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.2	0.1		123.8	1.7		8.7	1.0		19.0	0.2	0.1
Delay (s)	44.6	12.0		165.8	18.4		47.1	33.3		58.9	33.5	32.9
Level of Service	D	B		F	B		D	C		E	C	C
Approach Delay (s)		16.2			21.2			39.7			36.9	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	55	358	200	400	616	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	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
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1736	1568	1752	1743	1827	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1736	1568	1752	1743	1827	1553
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	59	385	215	430	662	147
RTOR Reduction (vph)	0	67	0	0	0	39
Lane Group Flow (vph)	59	318	215	430	662	108
Confl. Peds. (#/hr)		3				
Confl. Bikes (#/hr)		1			1	
Heavy Vehicles (%)	4%	3%	3%	9%	4%	4%
Turn Type		pt+ov	Prot			Prot
Protected Phases	8	8 1	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	15.0	35.0	15.5	57.9	37.9	37.9
Effective Green, g (s)	15.0	35.0	15.5	57.9	37.9	37.9
Actuated g/C Ratio	0.18	0.42	0.19	0.70	0.46	0.46
Clearance Time (s)	4.5		4.5	5.0	5.0	5.0
Vehicle Extension (s)	2.5		2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	316	666	330	1225	840	714
v/s Ratio Prot	0.03	c0.20	c0.12	0.25	c0.36	0.07
v/s Ratio Perm						
v/c Ratio	0.19	0.48	0.65	0.35	0.79	0.15
Uniform Delay, d1	28.5	17.1	31.0	4.8	18.8	12.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	4.1	0.2	5.2	0.1
Delay (s)	28.7	17.5	35.0	5.1	24.1	13.1
Level of Service	C	B	D	A	C	B
Approach Delay (s)	19.0			15.1	22.1	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	65	25	52	536	704	220
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	68	26	54	558	733	229
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1515	848	962			
vC1, stage 1 conf vol	848					
vC2, stage 2 conf vol	667					
vCu, unblocked vol	1515	848	962			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	93	93			
cM capacity (veh/h)	327	358	723			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	94	54	558	962
Volume Left	68	54	0	0
Volume Right	26	0	0	229
cSH	335	723	1700	1700
Volume to Capacity	0.28	0.07	0.33	0.57
Queue Length 95th (ft)	28	6	0	0
Control Delay (s)	19.9	10.4	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	19.9	0.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	70	129	5	33	34	111	338	8	47	295	39
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1678		1494	1711		1752	1874		1736	1835	
Flt Permitted	0.74	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1406	1678		1165	1711		1752	1874		1736	1835	
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)	68	76	140	5	36	37	121	367	9	51	321	42
RTOR Reduction (vph)	0	85	0	0	32	0	0	1	0	0	5	0
Lane Group Flow (vph)	68	132	0	5	41	0	121	375	0	51	358	0
Confl. Peds. (#/hr)	1		8	8		1			5	5		
Heavy Vehicles (%)	0%	1%	0%	20%	3%	0%	3%	1%	0%	4%	2%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	5.4	5.4		5.4	5.4		5.0	19.0		1.8	15.8	
Effective Green, g (s)	5.4	5.4		5.4	5.4		5.0	19.0		1.8	15.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.13	0.48		0.05	0.40	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	0.5	0.5		0.5	0.5		0.5	2.0		0.5	2.0	
Lane Grp Cap (vph)	194	231		160	236		223	908		80	740	
v/s Ratio Prot		c0.08			0.02		c0.07	c0.20		0.03	c0.20	
v/s Ratio Perm	0.05			0.00								
v/c Ratio	0.35	0.57		0.03	0.17		0.54	0.41		0.64	0.48	
Uniform Delay, d1	15.3	15.8		14.6	14.9		16.0	6.5		18.4	8.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	1.9		0.0	0.1		1.4	0.1		11.6	0.2	
Delay (s)	15.7	17.7		14.7	15.1		17.5	6.6		30.0	8.9	
Level of Service	B	B		B	B		B	A		C	A	
Approach Delay (s)		17.2			15.0			9.3			11.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	17.5
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	290	452	82	39	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	11	333	520	94	45	20
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	614				923	567
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	614				923	567
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	99				85	96
cM capacity (veh/h)	975				298	516

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	11	333	614	64
Volume Left	11	0	0	45
Volume Right	0	0	94	20
cSH	975	1700	1700	342
Volume to Capacity	0.01	0.20	0.36	0.19
Queue Length 95th (ft)	1	0	0	17
Control Delay (s)	8.7	0.0	0.0	17.9
Lane LOS	A			C
Approach Delay (s)	0.3		0.0	17.9
Approach LOS				C

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	38.8%	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)	227	1608	24	125	815	155	26	177	424	193	64	92
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	4.0	5.0		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
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	0.89		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1400	1703	3340		1671	1653		1770	1677	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.58	1.00		0.11	1.00	
Satd. Flow (perm)	1770	3539	1400	1703	3340		1017	1653		213	1677	
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)	239	1693	25	132	858	163	27	186	446	203	67	97
RTOR Reduction (vph)	0	0	2	0	13	0	0	72	0	0	43	0
Lane Group Flow (vph)	239	1693	23	132	1008	0	27	560	0	203	121	0
Confl. Peds. (#/hr)	3		3	3		3			2	2		
Heavy Vehicles (%)	2%	2%	12%	6%	5%	5%	8%	1%	2%	2%	5%	2%
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	20.1	61.0	61.0	10.5	51.4		35.0	35.0		35.0	35.0	
Effective Green, g (s)	20.1	61.0	61.0	10.5	51.4		35.0	35.0		35.0	35.0	
Actuated g/C Ratio	0.17	0.51	0.51	0.09	0.43		0.29	0.29		0.29	0.29	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		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)	296	1799	712	149	1431		297	482		62	489	
v/s Ratio Prot	c0.14	c0.48		0.08	0.30			0.34			0.07	
v/s Ratio Perm			0.02				0.03			c0.95		
v/c Ratio	0.81	0.94	0.03	0.89	0.70		0.09	1.16		3.27	0.25	
Uniform Delay, d1	48.1	27.8	14.7	54.2	28.1		30.9	42.5		42.5	32.4	
Progression Factor	1.00	1.00	1.00	1.34	0.69		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.8	11.2	0.1	39.1	2.7		0.1	93.5		1063.6	0.3	
Delay (s)	62.9	39.0	14.8	111.6	22.1		31.1	136.0		1106.1	32.7	
Level of Service	E	D	B	F	C		C	F		F	C	
Approach Delay (s)		41.6			32.4			131.7			626.4	
Approach LOS		D			C			F			F	

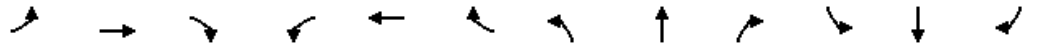
Intersection Summary			
HCM Average Control Delay	105.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	2127	20	7	1019	38	11	11	9	82	18	55
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	4.0	5.0	5.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00	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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.97	
Satd. Flow (prot)	1805	3539	1538	1583	3438	1568		1773	1593		1722	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.86	1.00		0.82	
Satd. Flow (perm)	1805	3539	1538	1583	3438	1568		1558	1593		1454	
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)	90	2216	21	7	1061	40	11	11	9	85	19	57
RTOR Reduction (vph)	0	0	2	0	0	7	0	0	8	0	18	0
Lane Group Flow (vph)	90	2216	19	7	1061	33	0	22	1	0	143	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	0%	2%	5%	14%	5%	3%	0%	9%	0%	0%	0%	5%
Turn Type	Prot		Prot	Prot		Prot	Perm		Perm	Perm		
Protected Phases	5	2	2	1	6	6		8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	10.6	89.3	89.3	1.3	80.0	80.0		16.4	16.4		16.4	
Effective Green, g (s)	10.6	89.3	89.3	1.3	80.0	80.0		16.4	16.4		16.4	
Actuated g/C Ratio	0.09	0.74	0.74	0.01	0.67	0.67		0.14	0.14		0.14	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.0	4.0		4.0	
Vehicle Extension (s)	2.3	5.4	5.4	2.3	5.4	5.4		2.5	2.5		2.5	
Lane Grp Cap (vph)	159	2634	1145	17	2292	1045		213	218		199	
v/s Ratio Prot	c0.05	c0.63	0.01	0.00	0.31	0.02						
v/s Ratio Perm								0.01	0.00		c0.10	
v/c Ratio	0.57	0.84	0.02	0.41	0.46	0.03		0.10	0.01		0.72	
Uniform Delay, d1	52.5	10.5	4.0	59.0	9.6	6.8		45.4	44.8		49.6	
Progression Factor	1.01	1.59	0.97	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.3	0.0	9.2	0.7	0.1		0.2	0.0		10.9	
Delay (s)	53.2	17.0	3.8	68.1	10.3	6.9		45.5	44.8		60.5	
Level of Service	D	B	A	E	B	A		D	D		E	
Approach Delay (s)		18.3			10.6			45.3			60.5	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1055	1128	127	637	459	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0	6.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	3471	1532	1736	3505	3359	
Flt Permitted	1.00	1.00	0.95	1.00	0.96	
Satd. Flow (perm)	3471	1532	1736	3505	3359	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1099	1175	132	664	478	66
RTOR Reduction (vph)	0	373	0	0	9	0
Lane Group Flow (vph)	1099	802	132	664	535	0
Confl. Peds. (#/hr)		1	1		2	1
Heavy Vehicles (%)	4%	3%	4%	3%	3%	2%
Turn Type		Perm	Prot			
Protected Phases	2		1	6	8	
Permitted Phases		2				
Actuated Green, G (s)	65.4	65.4	13.7	83.1	23.4	
Effective Green, g (s)	65.4	65.4	13.7	83.1	23.4	
Actuated g/C Ratio	0.56	0.56	0.12	0.71	0.20	
Clearance Time (s)	6.0	6.0	4.0	6.0	5.0	
Vehicle Extension (s)	4.8	4.8	2.3	5.5	2.3	
Lane Grp Cap (vph)	1932	853	202	2479	669	
v/s Ratio Prot	0.32		c0.08	0.19	c0.16	
v/s Ratio Perm		c0.52				
v/c Ratio	0.57	0.94	0.65	0.27	0.80	
Uniform Delay, d1	16.9	24.2	49.6	6.2	44.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	18.4	6.2	0.1	6.4	
Delay (s)	17.5	42.7	55.9	6.4	51.2	
Level of Service	B	D	E	A	D	
Approach Delay (s)	30.5			14.6	51.2	
Approach LOS	C			B	D	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1188	0	1	782	0	1	0	2	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	1305	0	1	859	0	1	0	2	0	0	1
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	859			1305			2168	2167	1305	2169	2167	859
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	859			1305			2168	2167	1305	2169	2167	859
tC, single (s)	4.1			4.1			8.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.4	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			100			94	100	99	100	100	100
cM capacity (veh/h)	790			537			18	47	198	34	47	243

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1305	860	3	1
Volume Left	0	1	1	0
Volume Right	0	0	2	1
cSH	790	537	45	243
Volume to Capacity	0.00	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	6	0
Control Delay (s)	0.0	0.1	91.4	19.9
Lane LOS		A	F	C
Approach Delay (s)	0.0	0.1	91.4	19.9
Approach LOS			F	C

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	72.5%	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)	185	892	67	11	596	36	19	25	7	110	33	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.4		4.0	5.4	5.4	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	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	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3507		1805	1810	1568	1626	1834		1768	1792	1442
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.73	1.00		0.74	1.00	1.00
Satd. Flow (perm)	1770	3507		1805	1810	1568	1258	1834		1369	1792	1442
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)	193	929	70	11	621	38	20	26	7	115	34	45
RTOR Reduction (vph)	0	3	0	0	0	19	0	6	0	0	0	40
Lane Group Flow (vph)	193	996	0	11	621	19	20	27	0	115	34	5
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	0%	0%	5%	3%	11%	0%	0%	2%	6%	12%
Turn Type	Prot			Prot		Prot	Perm			Perm		Prot
Protected Phases	5	2		1	6	6		8			4	4
Permitted Phases							8			4		
Actuated Green, G (s)	14.3	52.4		1.0	39.1	39.1	9.3	9.3		9.3	9.3	9.3
Effective Green, g (s)	14.3	52.4		1.0	39.1	39.1	9.3	9.3		9.3	9.3	9.3
Actuated g/C Ratio	0.19	0.68		0.01	0.51	0.51	0.12	0.12		0.12	0.12	0.12
Clearance Time (s)	4.0	5.4		4.0	5.4	5.4	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.3	5.4		2.3	5.4	5.4	2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	330	2399		24	924	800	153	223		166	218	175
v/s Ratio Prot	c0.11	0.28		0.01	c0.34	0.01		0.01			0.02	0.00
v/s Ratio Perm							0.02			c0.08		
v/c Ratio	0.58	0.41		0.46	0.67	0.02	0.13	0.12		0.69	0.16	0.03
Uniform Delay, d1	28.4	5.3		37.5	14.0	9.3	30.0	30.0		32.3	30.1	29.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.0	0.3		7.9	2.7	0.0	0.3	0.2		10.9	0.2	0.1
Delay (s)	30.4	5.6		45.4	16.7	9.3	30.3	30.2		43.2	30.4	29.7
Level of Service	C	A		D	B	A	C	C		D	C	C
Approach Delay (s)		9.6			16.7			30.2			37.8	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	13.9
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	58	0	0	38	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	62	0	0	41	0	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			62		103	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		103	62
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1553		900	1008

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	62	41	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1553	1700
Volume to Capacity	0.04	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	66	58	36	191	446	57
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	63	39	208	485	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1228	1001	970	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1228	1001	970	0	0	
tC, single (s)	7.1	6.5	6.6	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.2	
p0 queue free %	10	62	78	81	70	
cM capacity (veh/h)	80	168	175	1076	1617	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	135	247	547
Volume Left	72	0	485
Volume Right	0	208	62
cSH	106	592	1617
Volume to Capacity	1.27	0.42	0.30
Queue Length 95th (ft)	229	51	32
Control Delay (s)	252.8	15.4	7.5
Lane LOS	F	C	A
Approach Delay (s)	252.8	15.4	7.5
Approach LOS	F	C	

Intersection Summary				
Average Delay	45.2			
Intersection Capacity Utilization	62.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	446	157	12	193	73	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	501	176	13	217	82	22
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			678		833	589
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			678		833	589
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		76	96
cM capacity (veh/h)			924		335	502

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	678	230	104
Volume Left	0	13	82
Volume Right	176	0	22
cSH	1700	924	361
Volume to Capacity	0.40	0.01	0.29
Queue Length 95th (ft)	0	1	29
Control Delay (s)	0.0	0.7	19.0
Lane LOS		A	C
Approach Delay (s)	0.0	0.7	19.0
Approach LOS			C

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	45.0%	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)	379	806	94	17	487	83	229	77	45	80	51	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.5		4.2	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
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	0.98		1.00	0.98		1.00	0.94		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)	1787	3546		1805	3501		1787	1784		1805	1863	1599
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3546		1805	3501		1787	1784		1805	1863	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	391	831	97	18	502	86	236	79	46	82	53	225
RTOR Reduction (vph)	0	4	0	0	9	0	0	13	0	0	0	204
Lane Group Flow (vph)	391	924	0	18	579	0	236	112	0	82	53	21
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	1%	0%	2%	0%	1%	0%	1%	1%	0%	0%	2%	1%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	5	2		1	6		4	4		8	8	8
Permitted Phases												
Actuated Green, G (s)	30.5	57.2		2.6	29.3		19.2	19.2		10.0	10.0	10.0
Effective Green, g (s)	30.5	57.2		2.6	29.3		19.2	19.2		10.0	10.0	10.0
Actuated g/C Ratio	0.29	0.54		0.02	0.27		0.18	0.18		0.09	0.09	0.09
Clearance Time (s)	4.2	4.5		4.2	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	5.2		2.5	5.2		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	511	1901		44	961		322	321		169	175	150
v/s Ratio Prot	c0.22	0.26		0.01	c0.17		c0.13	0.06		c0.05	0.03	0.01
v/s Ratio Perm												
v/c Ratio	0.77	0.49		0.41	0.60		0.73	0.35		0.49	0.30	0.14
Uniform Delay, d1	34.8	15.5		51.3	33.6		41.3	38.3		45.9	45.1	44.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.4		4.5	1.6		7.9	0.5		1.6	0.7	0.3
Delay (s)	41.3	16.0		55.7	35.3		49.2	38.8		47.5	45.8	44.7
Level of Service	D	B		E	D		D	D		D	D	D
Approach Delay (s)		23.5			35.9			45.6			45.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	106.7	Sum of lost time (s)	17.7
Intersection Capacity Utilization	69.2%	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												
Volume (vph)	222	1319	431	134	1106	286	293	287	72	271	228	448
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	4715	1558	1736	3252	1511	1770	1863	1539	1736	1845	1540
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	4715	1558	1736	3252	1511	1770	1863	1539	1736	1845	1540
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)	234	1388	454	141	1164	301	308	302	76	285	240	472
RTOR Reduction (vph)	0	0	163	0	0	171	0	0	35	0	0	185
Lane Group Flow (vph)	234	1388	291	141	1164	130	308	302	42	285	240	287
Confl. Peds. (#/hr)	4		3	3		4	31		19	19		31
Heavy Vehicles (%)	5%	10%	1%	4%	11%	4%	2%	2%	2%	4%	3%	1%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	17.6	56.8	56.8	12.7	51.9	51.9	17.0	16.5	16.5	17.0	16.5	16.5
Effective Green, g (s)	17.6	56.8	56.8	12.7	51.9	51.9	17.0	16.5	16.5	17.0	16.5	16.5
Actuated g/C Ratio	0.15	0.47	0.47	0.11	0.43	0.43	0.14	0.14	0.14	0.14	0.14	0.14
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5
Vehicle Extension (s)	2.3	4.4	4.4	2.3	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lane Grp Cap (vph)	252	2232	737	184	1406	654	251	256	212	246	254	212
v/s Ratio Prot	c0.14	0.29		0.08	c0.36		c0.17	0.16		0.16	0.13	
v/s Ratio Perm			0.19			0.09			0.03			c0.19
v/c Ratio	0.93	0.62	0.40	0.77	0.83	0.20	1.23	1.18	0.20	1.16	0.94	1.36
Uniform Delay, d1	50.6	23.6	20.5	52.2	30.1	21.1	51.5	51.8	45.9	51.5	51.3	51.8
Progression Factor	1.15	0.90	0.58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.2	1.1	1.3	16.2	5.7	0.7	132.2	113.7	0.3	107.0	41.1	187.7
Delay (s)	91.3	22.3	13.2	68.4	35.8	21.8	183.7	165.4	46.1	158.5	92.4	239.4
Level of Service	F	C	B	E	D	C	F	F	D	F	F	F
Approach Delay (s)		28.1			36.1			160.4			180.9	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM Average Control Delay	75.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	145	182	78	480	422	85
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	153	192	82	505	444	89
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)		1				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1115	445	445			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1115	445	445			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	28	69	93			
cM capacity (veh/h)	213	612	1109			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	344	587	444	89
Volume Left	153	82	0	0
Volume Right	192	0	0	89
cSH	383	1109	1700	1700
Volume to Capacity	0.90	0.07	0.26	0.05
Queue Length 95th (ft)	230	6	0	0
Control Delay (s)	57.4	2.0	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	57.4	2.0	0.0	
Approach LOS	F			

Intersection Summary			
Average Delay	14.3		
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: 402_Borland&Stafford

402_Borland&Stafford

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB SW Stafford Rd.											
3	L	187	2.0	0.512	14.2	LOS B	2.6	67.0	0.68	1.00	23.6
8	T	396	1.0	0.512	14.2	LOS B	2.7	67.2	0.68	0.87	25.4
18	R	60	2.0	0.512	14.2	LOS B	2.7	67.2	0.68	0.92	25.3
Approach		642	1.4	0.512	14.2	LOS B	2.7	67.2	0.68	0.91	24.8
East: WB SW Borland Rd.											
1	L	32	7.0	0.235	8.6	LOS A	0.6	16.5	0.50	0.95	25.9
6	T	71	0.0	0.235	8.6	LOS A	0.6	16.5	0.50	0.70	28.3
16	R	47	2.0	0.235	8.6	LOS A	0.6	16.5	0.50	0.76	28.0
Approach		149	2.1	0.235	8.6	LOS A	0.6	16.5	0.50	0.77	27.7
North: SB SW Stafford Rd.											
7	L	83	0.0	0.315	8.0	LOS A	1.3	33.4	0.46	0.88	26.2
4	T	292	5.0	0.315	8.0	LOS A	1.3	33.5	0.46	0.61	28.7
14	R	139	1.0	0.315	8.0	LOS A	1.3	33.5	0.46	0.69	28.3
Approach		514	3.1	0.315	8.0	LOS A	1.3	33.5	0.46	0.68	28.1
West: EB SW Borland Rd.											
5	L	207	0.0	0.587	13.2	LOS B	2.9	73.7	0.56	0.98	24.0
2	T	284	1.0	0.587	13.2	LOS B	2.9	73.7	0.56	0.77	25.8
12	R	208	1.0	0.255	7.2	LOS A	0.8	20.0	0.41	0.70	28.6
Approach		698	0.7	0.587	11.4	LOS B	2.9	73.7	0.52	0.81	25.9
All Vehicles		2003	1.6	0.587	11.2	LOS B	2.9	73.7	0.56	0.81	26.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	15	52	480	67	69	291
Ideal Flow (vphpl)	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	0.96	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1662	1403	1691		1614	1733
Flt Permitted	0.95	1.00	1.00		0.40	1.00
Satd. Flow (perm)	1662	1403	1691		686	1733
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	17	58	539	75	78	327
RTOR Reduction (vph)	0	53	5	0	0	0
Lane Group Flow (vph)	17	5	609	0	78	327
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	2%	2%	0%	3%	1%
Turn Type		Perm			Perm	
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	3.4	3.4	29.2		29.2	29.2
Effective Green, g (s)	3.4	3.4	29.2		29.2	29.2
Actuated g/C Ratio	0.08	0.08	0.72		0.72	0.72
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	139	117	1216		493	1246
v/s Ratio Prot	c0.01		c0.36			0.19
v/s Ratio Perm		0.00			0.11	
v/c Ratio	0.12	0.04	0.50		0.16	0.26
Uniform Delay, d1	17.2	17.1	2.5		1.8	2.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.3		0.2	0.1
Delay (s)	17.6	17.2	2.8		2.0	2.1
Level of Service	B	B	A		A	A
Approach Delay (s)	17.3		2.8			2.1
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	40.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	216	138	108	290	180	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	237	152	119	319	198	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		1				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	806	250	302			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	806	250	302			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	26	81	91			
cM capacity (veh/h)	320	791	1253			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	389	119	319	302
Volume Left	237	119	0	0
Volume Right	152	0	0	104
cSH	444	1253	1700	1700
Volume to Capacity	0.88	0.09	0.19	0.18
Queue Length 95th (ft)	228	8	0	0
Control Delay (s)	48.2	8.2	0.0	0.0
Lane LOS	E	A		
Approach Delay (s)	48.2	2.2		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	17.5		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	63	235	119	84	117	84
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	72	267	135	95	133	95
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	547	181	228			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547	181	228			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	84	69	90			
cM capacity (veh/h)	450	867	1311			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	339	231	228
Volume Left	72	135	0
Volume Right	267	0	95
cSH	725	1311	1700
Volume to Capacity	0.47	0.10	0.13
Queue Length 95th (ft)	62	9	0
Control Delay (s)	14.2	5.1	0.0
Lane LOS	B	A	
Approach Delay (s)	14.2	5.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	269	282	51	179	160	40
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)	292	307	55	195	174	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			292		751	446
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		751	446
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		52	93
cM capacity (veh/h)			1258		363	613

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	599	55	195	217
Volume Left	0	55	0	174
Volume Right	307	0	0	43
cSH	1700	1258	1700	425
Volume to Capacity	0.35	0.04	0.11	0.51
Queue Length 95th (ft)	0	3	0	71
Control Delay (s)	0.0	8.0	0.0	22.0
Lane LOS		A		C
Approach Delay (s)	0.0	1.8		22.0
Approach LOS				C

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	606	66	8	365	89	110	64	61	273	54	26
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
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	0.99		1.00	0.97		1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	3209		1662	1641		1624	1622		1646	1610	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.67	1.00	
Satd. Flow (perm)	1662	3209		1662	1641		1195	1622		1156	1610	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	24	681	74	9	410	100	124	72	69	307	61	29
RTOR Reduction (vph)	0	6	0	0	6	0	0	27	0	0	13	0
Lane Group Flow (vph)	24	749	0	9	504	0	124	114	0	307	77	0
Confl. Peds. (#/hr)	2					2	2					2
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	0%	2%	3%	0%	3%	3%	2%	0%	0%	1%	2%	4%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	3	8		7	4			6			2	
Permitted Phases							6			2		
Actuated Green, G (s)	2.4	37.2		1.0	35.8		30.7	30.7		30.7	30.7	
Effective Green, g (s)	2.4	37.2		1.0	35.8		30.7	30.7		30.7	30.7	
Actuated g/C Ratio	0.03	0.44		0.01	0.42		0.36	0.36		0.36	0.36	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.8		2.5	4.8		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	47	1406		20	692		432	587		418	582	
v/s Ratio Prot	c0.01	0.23		0.01	c0.31			0.07			0.05	
v/s Ratio Perm							0.10			c0.27		
v/c Ratio	0.51	0.53		0.45	0.73		0.29	0.19		0.73	0.13	
Uniform Delay, d1	40.7	17.5		41.7	20.5		19.3	18.6		23.6	18.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	0.7		11.3	4.6		0.3	0.1		6.2	0.1	
Delay (s)	47.5	18.2		52.9	25.0		19.6	18.7		29.8	18.2	
Level of Service	D	B		D	C		B	B		C	B	
Approach Delay (s)		19.1			25.5			19.1			27.1	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	249	4	483	482	1	213
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		5.5	5.5		5.5
Lane Util. Factor	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	0.85		1.00
Flt Protected	0.95		1.00	1.00		1.00
Satd. Flow (prot)	1601		1733	1458		1715
Flt Permitted	0.95		1.00	1.00		1.00
Satd. Flow (perm)	1601		1733	1458		1713
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	265	4	514	513	1	227
RTOR Reduction (vph)	1	0	0	223	0	0
Lane Group Flow (vph)	268	0	514	290	0	228
Confl. Bikes (#/hr)			1			
Heavy Vehicles (%)	4%	0%	1%	2%	0%	2%
Turn Type				Perm	Perm	
Protected Phases	4		6			2
Permitted Phases				6	2	
Actuated Green, G (s)	13.8		22.2	22.2		22.2
Effective Green, g (s)	13.8		22.2	22.2		22.2
Actuated g/C Ratio	0.30		0.48	0.48		0.48
Clearance Time (s)	4.5		5.5	5.5		5.5
Vehicle Extension (s)	2.5		3.0	3.0		3.0
Lane Grp Cap (vph)	480		836	704		827
v/s Ratio Prot	c0.17		c0.30			
v/s Ratio Perm				0.20		0.13
v/c Ratio	0.56		0.61	0.41		0.28
Uniform Delay, d1	13.5		8.8	7.7		7.1
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.1		1.4	0.4		0.2
Delay (s)	14.7		10.1	8.1		7.3
Level of Service	B		B	A		A
Approach Delay (s)	14.7		9.1			7.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.8%	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)	1	473	2	26	212	2	1	0	36	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	493	2	27	221	2	1	0	38	1	0	1
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	223			495			773	773	494	809	773	222
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223			495			773	773	494	809	773	222
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			97			100	100	93	100	100	100
cM capacity (veh/h)	1358			1039			312	323	573	276	323	624

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	496	250	39	2
Volume Left	1	27	1	1
Volume Right	2	2	38	1
cSH	1358	1039	561	382
Volume to Capacity	0.00	0.03	0.07	0.01
Queue Length 95th (ft)	0	2	6	0
Control Delay (s)	0.0	1.2	11.9	14.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.0	1.2	11.9	14.5
Approach LOS			B	B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

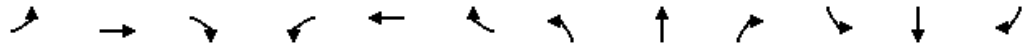
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	478	262	34	19	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	503	276	36	20	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	609	22	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	609	22	23			
tC, single (s)	6.6	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.3	2.2			
p0 queue free %	99	52	83			
cM capacity (veh/h)	355	1053	1585			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	508	312	23
Volume Left	5	276	0
Volume Right	503	0	3
cSH	1064	1585	1700
Volume to Capacity	0.48	0.17	0.01
Queue Length 95th (ft)	66	16	0
Control Delay (s)	11.5	7.0	0.0
Lane LOS	B	A	
Approach Delay (s)	11.5	7.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	652	4	130	585	281	3	58	83	383	122	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		6.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
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	1.00	0.85	1.00	1.00	0.85		0.92			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.96	
Satd. Flow (prot)	1662	3260	1488	1646	3292	1458		1549			1660	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.70	
Satd. Flow (perm)	1662	3260	1488	1646	3292	1458		1537			1197	
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)	8	679	4	135	609	293	3	60	86	399	127	21
RTOR Reduction (vph)	0	0	2	0	0	168	0	30	0	0	1	0
Lane Group Flow (vph)	8	679	2	135	609	125	0	119	0	0	546	0
Confl. Bikes (#/hr)				1								
Heavy Vehicles (%)	0%	2%	0%	1%	1%	2%	0%	3%	5%	1%	2%	0%
Turn Type	Prot		Prot	Prot		Prot	Perm			Perm		
Protected Phases	1	6	6	5	2	2		4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.1	34.0	34.0	13.3	46.2	46.2		44.4			45.4	
Effective Green, g (s)	1.1	34.0	34.0	13.3	46.2	46.2		44.4			45.4	
Actuated g/C Ratio	0.01	0.31	0.31	0.12	0.43	0.43		0.41			0.42	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		6.0			5.0	
Vehicle Extension (s)	2.3	4.8	4.8	2.3	4.8	4.8		2.5			2.5	
Lane Grp Cap (vph)	17	1020	465	201	1399	620		628			500	
v/s Ratio Prot	0.00	c0.21	0.00	c0.08	0.18	0.09						
v/s Ratio Perm								0.08			c0.46	
v/c Ratio	0.47	0.67	0.00	0.67	0.44	0.20		0.19			1.09	
Uniform Delay, d1	53.5	32.4	25.7	45.6	22.0	19.6		20.6			31.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	11.5	2.1	0.0	7.4	0.4	0.3		0.1			67.9	
Delay (s)	65.0	34.5	25.7	53.0	22.5	20.0		20.7			99.5	
Level of Service	E	C	C	D	C	B		C			F	
Approach Delay (s)		34.8			25.7			20.7			99.5	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.1%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	33	161	43	163	60	6	26	69	139	14	52	13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	36	177	47	179	66	7	29	76	153	15	57	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	260	252	257	87
Volume Left (vph)	36	179	29	15
Volume Right (vph)	47	7	153	14
Hadj (s)	-0.04	0.17	-0.30	-0.02
Departure Headway (s)	5.2	5.4	5.1	5.7
Degree Utilization, x	0.38	0.38	0.37	0.14
Capacity (veh/h)	642	620	639	548
Control Delay (s)	11.3	11.7	11.1	9.6
Approach Delay (s)	11.3	11.7	11.1	9.6
Approach LOS	B	B	B	A

Intersection Summary				
Delay		11.2		
HCM Level of Service		B		
Intersection Capacity Utilization		55.2%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	297	12	11	227	23	5	23	11	45	50	57
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	16	326	13	12	249	25	5	25	12	49	55	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	249			326			711	640	333	671	646	262
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	249			326			711	640	333	671	646	262
tC, single (s)	4.1			4.2			7.1	6.5	6.3	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.4	3.6	4.0	3.3
p0 queue free %	99			99			98	93	98	85	86	92
cM capacity (veh/h)	1328			1195			282	382	693	331	382	781

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	356	287	43	167
Volume Left	16	12	5	49
Volume Right	13	25	12	63
cSH	1328	1195	508	510
Volume to Capacity	0.01	0.01	0.08	0.33
Queue Length 95th (ft)	1	1	7	35
Control Delay (s)	0.5	0.4	14.2	15.5
Lane LOS	A	A	B	C
Approach Delay (s)	0.5	0.4	14.2	15.5
Approach LOS			B	C

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			

MOVEMENT SUMMARY

Site: 414_Mulino&13th

414_Mulino&13th

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB S. Mulino Rd.											
3	L	23	0.0	0.041	0.0	LOS A	0.0	0.0	0.00	0.98	31.5
8	T	47	0.0	0.041	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
Approach		70	0.0	0.041	0.0	NA	0.0	0.0	0.00	0.33	36.7
North: SB S Mulino Rd.											
4	T	108	6.0	0.098	7.5	LOS A	0.5	12.2	0.09	0.91	26.0
14	R	51	5.0	0.098	7.5	LOS A	0.5	12.2	0.09	0.93	25.9
Approach		158	5.7	0.098	7.5	LOS A	0.5	12.2	0.09	0.92	26.0
West: EB SE 13th Ave.											
5	L	26	5.0	0.085	9.5	LOS A	0.4	10.8	0.33	0.85	25.2
12	R	48	0.0	0.085	9.5	LOS A	0.4	10.8	0.33	0.84	25.1
Approach		74	1.8	0.085	9.5	LOS A	0.4	10.8	0.33	0.85	25.1
All Vehicles		303	3.4	0.098	6.3	NA	0.5	12.2	0.13	0.76	27.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

HCM Delay Model used.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: 415_99E&SouthEnd

99E&SouthEnd
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB 99E											
8	T	697	2.0	0.406	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
18	R	206	1.0	0.140	0.0	LOS A	0.0	0.0	0.00	0.69	31.7
Approach		903	1.8	0.406	0.0	NA	0.0	0.0	0.00	0.16	37.7
East: WB South End Rd.											
1	L	140	0.0	0.523	32.3	LOS D	3.1	77.5	0.86	1.14	17.9
16	R	9	0.0	0.029	16.4	LOS C	0.1	2.8	0.71	0.93	22.6
Approach		149	0.0	0.523	31.3	LOS D	3.1	77.5	0.85	1.12	18.1
North: SB 99E											
7	L	11	10.0	0.017	5.8	LOS A	0.1	1.7	0.59	0.76	27.9
4	T	928	3.0	0.546	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
Approach		939	3.1	0.546	0.1	NA	0.1	1.7	0.01	0.01	39.8
All Vehicles		1992	2.3	0.546	2.4	NA	3.1	77.5	0.07	0.16	35.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
HCM Delay Model used.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	50	578	16	79	1126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	53	615	17	84	1198
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	1981	615			615	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1981	615			615	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	87	89			91	
cM capacity (veh/h)	57	491			975	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	7	53	615	17	84	1198
Volume Left	7	0	0	0	84	0
Volume Right	0	53	0	17	0	0
cSH	57	491	1700	1700	975	1700
Volume to Capacity	0.13	0.11	0.36	0.01	0.09	0.70
Queue Length 95th (ft)	10	9	0	0	7	0
Control Delay (s)	77.0	13.2	0.0	0.0	9.0	0.0
Lane LOS	F	B			A	
Approach Delay (s)	21.0		0.0		0.6	
Approach LOS	C					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	74.3%	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)	12	46	43	14	27	95	20	212	7	139	431	33
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
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	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.99	1.00		0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1705	1488		1676	1417	1662	1693		1646	1713	
Flt Permitted		0.92	1.00		0.86	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1583	1488		1467	1417	1662	1693		1646	1713	
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)	12	48	45	15	28	99	21	221	7	145	449	34
RTOR Reduction (vph)	0	0	32	0	0	58	0	1	0	0	2	0
Lane Group Flow (vph)	0	60	13	0	43	41	21	227	0	145	481	0
Confl. Bikes (#/hr)	1							1				1
Heavy Vehicles (%)	0%	2%	0%	0%	4%	5%	0%	3%	0%	1%	1%	0%
Turn Type	Perm		pt+ov	Perm		pt+ov	Prot			Prot		
Protected Phases		4	4 5		8	8 1	5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		5.9	14.3		5.9	20.7	3.4	18.9		9.8	25.3	
Effective Green, g (s)		5.9	14.3		5.9	20.7	3.4	18.9		9.8	25.3	
Actuated g/C Ratio		0.12	0.29		0.12	0.42	0.07	0.38		0.20	0.51	
Clearance Time (s)		5.0			5.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	
Lane Grp Cap (vph)		188	429		175	591	114	645		325	874	
v/s Ratio Prot			0.01			0.03	0.01	0.13		c0.09	c0.28	
v/s Ratio Perm		c0.04			0.03							
v/c Ratio		0.32	0.03		0.25	0.07	0.18	0.35		0.45	0.55	
Uniform Delay, d1		20.0	12.7		19.8	8.7	21.8	11.0		17.5	8.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0		0.5	0.0	0.6	0.3		0.7	0.7	
Delay (s)		20.7	12.7		20.4	8.7	22.4	11.3		18.2	9.0	
Level of Service		C	B		C	A	C	B		B	A	
Approach Delay (s)		17.3			12.2			12.2			11.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.6%	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)	66	32	14	28	22	25	20	457	11	47	932	96
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.2			5.2	5.2	4.5	6.0	6.0	4.5	6.0	6.0
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.98			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1652			1666	1488	1662	1683	1365	1662	1699	1488
Flt Permitted		0.79			0.79	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1337			1350	1488	1662	1683	1365	1662	1699	1488
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)	73	35	15	31	24	27	22	502	12	52	1024	105
RTOR Reduction (vph)	0	3	0	0	0	23	0	0	3	0	0	10
Lane Group Flow (vph)	0	120	0	0	55	4	22	502	9	52	1024	95
Heavy Vehicles (%)	2%	0%	0%	0%	5%	0%	0%	4%	9%	0%	3%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			2
Actuated Green, G (s)		16.4			16.4	16.4	3.9	77.3	77.3	7.4	80.8	80.8
Effective Green, g (s)		16.4			16.4	16.4	3.9	77.3	77.3	7.4	80.8	80.8
Actuated g/C Ratio		0.14			0.14	0.14	0.03	0.66	0.66	0.06	0.69	0.69
Clearance Time (s)		5.2			5.2	5.2	4.5	6.0	6.0	4.5	6.0	6.0
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.8	4.8	2.3	4.8	4.8
Lane Grp Cap (vph)		188			190	209	55	1114	903	105	1175	1029
v/s Ratio Prot							0.01	0.30		c0.03	c0.60	
v/s Ratio Perm		c0.09			0.04	0.00			0.01			0.06
v/c Ratio		0.64			0.29	0.02	0.40	0.45	0.01	0.50	0.87	0.09
Uniform Delay, d1		47.4			45.0	43.3	55.3	9.5	6.7	52.9	14.0	5.9
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		6.0			0.6	0.0	2.8	0.6	0.0	2.1	7.8	0.1
Delay (s)		53.4			45.6	43.3	58.1	10.1	6.7	55.0	21.8	6.0
Level of Service		D			D	D	E	B	A	E	C	A
Approach Delay (s)		53.4			44.8			12.0			21.9	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	116.8	Sum of lost time (s)	15.7
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

MOVEMENT SUMMARY

Site: 419_Leland and Beavercreek Rd.

Beavercreek/Leland

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB S.Karmath Rd.											
3	L	13	8.0	0.132	12.9	LOS B	0.5	13.8	0.55	0.97	23.9
8	T	34	3.0	0.132	12.9	LOS B	0.5	13.8	0.55	0.95	24.0
18	R	23	0.0	0.132	12.9	LOS B	0.5	13.8	0.55	0.90	23.8
Approach		69	2.9	0.132	12.9	LOS B	0.5	13.8	0.55	0.94	23.9
East: WB S. Beavercreek Rd.											
1	L	8	12.0	0.154	8.1	LOS A	0.7	18.5	0.10	1.01	25.6
6	T	39	3.0	0.154	8.1	LOS A	0.7	18.5	0.10	0.98	25.7
16	R	166	4.0	0.154	8.1	LOS A	0.7	18.5	0.10	0.93	25.6
Approach		214	4.1	0.154	8.1	LOS A	0.7	18.5	0.10	0.94	25.6
North: SB S. Beavercreek Rd.											
7	L	301	2.0	0.258	0.0	LOS A	0.0	0.0	0.00	0.76	31.5
4	T	66	2.0	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
14	R	52	2.0	0.258	0.0	LOS A	0.0	0.0	0.00	0.71	31.7
Approach		419	2.0	0.258	0.0	NA	0.0	0.0	0.00	0.64	32.6
West: EB S. Leland Rd.											
5	L	22	5.0	0.082	8.4	LOS A	0.3	8.9	0.32	0.92	25.7
2	T	63	3.0	0.082	8.4	LOS A	0.3	8.9	0.32	0.90	25.8
12	R	11	10.0	0.082	8.4	LOS A	0.3	8.9	0.32	0.79	25.6
Approach		96	4.2	0.082	8.4	LOS A	0.3	8.9	0.32	0.89	25.8
All Vehicles		798	2.9	0.258	4.3	NA	0.7	18.5	0.11	0.77	28.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
HCM Delay Model used.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	15	0	13	6	9	3	438	9	30	869	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	16	0	14	6	10	3	466	10	32	924	3
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	1464	1461	924	1469	1461	466	924			466		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1464	1461	924	1469	1461	466	924			466		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	87	100	85	95	98	100			97		
cM capacity (veh/h)	87	126	329	94	126	601	747			1106		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	20	30	3	466	10	32	924	3
Volume Left	4	14	3	0	0	32	0	0
Volume Right	0	10	0	0	10	0	0	3
cSH	115	139	747	1700	1700	1106	1700	1700
Volume to Capacity	0.18	0.21	0.00	0.27	0.01	0.03	0.54	0.00
Queue Length 95th (ft)	15	19	0	0	0	2	0	0
Control Delay (s)	42.8	37.7	9.8	0.0	0.0	8.4	0.0	0.0
Lane LOS	E	E	A			A		
Approach Delay (s)	42.8	37.7	0.1			0.3		
Approach LOS	E	E						

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	59.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	0	109	4	0	1	48	418	5	1	827	31
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)	21	0	118	4	0	1	52	454	5	1	899	34
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	1480	1482	916	1479	1496	457	933			460		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1480	1482	916	1479	1496	457	933			460		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	79	100	64	93	100	100	93			100		
cM capacity (veh/h)	99	117	330	64	115	608	734			1112		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	139	5	512	934
Volume Left	21	4	52	1
Volume Right	118	1	5	34
cSH	245	77	734	1112
Volume to Capacity	0.57	0.07	0.07	0.00
Queue Length 95th (ft)	79	6	6	0
Control Delay (s)	37.4	55.0	1.9	0.0
Lane LOS	E	F	A	A
Approach Delay (s)	37.4	55.0	1.9	0.0
Approach LOS	E	F		

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	81.3%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	27	93	376	74	196	718
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	101	409	80	213	780
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	1615	409			409	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1615	409			409	
tC, single (s)	6.5	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	67	84			81	
cM capacity (veh/h)	88	630			1129	

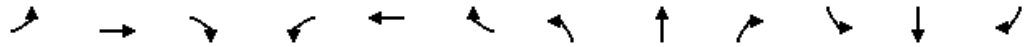
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	130	409	80	213	780
Volume Left	29	0	0	213	0
Volume Right	101	0	80	0	0
cSH	264	1700	1700	1129	1700
Volume to Capacity	0.49	0.24	0.05	0.19	0.46
Queue Length 95th (ft)	63	0	0	17	0
Control Delay (s)	31.2	0.0	0.0	8.9	0.0
Lane LOS	D			A	
Approach Delay (s)	31.2	0.0		1.9	
Approach LOS	D				

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	55.5%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	0	115	0	0	0	40	300	0	0	506	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	17	0	124	0	0	0	43	323	0	0	544	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	953	953	544	953	953	323	544			323		
vC1, stage 1 conf vol	544	544		409	409							
vC2, stage 2 conf vol	409	409		544	544							
vCu, unblocked vol	953	953	544	953	953	323	544			323		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	77	100	100	100	96			100		
cM capacity (veh/h)	439	436	543	334	417	723	1035			1249		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	141	0	43	323	544	17
Volume Left	17	0	43	0	0	0
Volume Right	124	0	0	0	0	17
cSH	527	1700	1035	1700	1249	1700
Volume to Capacity	0.27	0.00	0.04	0.19	0.00	0.01
Queue Length 95th (ft)	27	0	3	0	0	0
Control Delay (s)	14.3	0.0	8.6	0.0	0.0	0.0
Lane LOS	B	A	A			
Approach Delay (s)	14.3	0.0	1.0		0.0	
Approach LOS	B	A				

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	51.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	257	32	11	273	15	21	27	6	33	85	53
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	27	282	35	12	300	16	23	30	7	36	93	58

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	345	329	59	188
Volume Left (vph)	27	12	23	36
Volume Right (vph)	35	16	7	58
Hadj (s)	0.03	0.11	0.07	-0.12
Departure Headway (s)	5.2	5.3	6.1	5.7
Degree Utilization, x	0.49	0.48	0.10	0.30
Capacity (veh/h)	662	652	492	571
Control Delay (s)	13.1	13.0	9.8	11.0
Approach Delay (s)	13.1	13.0	9.8	11.0
Approach LOS	B	B	A	B

Intersection Summary			
Delay	12.4		
HCM Level of Service	B		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	351	44	85	177	12	138
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	386	48	93	195	13	152
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			434		791	411
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			434		791	411
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		96	76
cM capacity (veh/h)			1126		331	642

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	434	288	165
Volume Left	0	93	13
Volume Right	48	0	152
cSH	1700	1126	598
Volume to Capacity	0.26	0.08	0.28
Queue Length 95th (ft)	0	7	28
Control Delay (s)	0.0	3.3	13.3
Lane LOS		A	B
Approach Delay (s)	0.0	3.3	13.3
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	44	432	237	8	16	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	46	450	247	8	17	29
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	255				793	251
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	255				793	251
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	97				95	96
cM capacity (veh/h)	1322				340	783

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	496	255	46
Volume Left	46	0	17
Volume Right	0	8	29
cSH	1322	1700	531
Volume to Capacity	0.03	0.15	0.09
Queue Length 95th (ft)	3	0	7
Control Delay (s)	1.1	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	1.1	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	287	792	633	64	57	266
Ideal Flow (vphpl)	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	1.00	1.00
Frpb, ped/bikes	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
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)	1630	1716	1716	1458	1662	1458
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1630	1716	1716	1458	1662	1458
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	350	966	772	78	70	324
RTOR Reduction (vph)	0	0	0	19	0	52
Lane Group Flow (vph)	350	966	772	59	70	272
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	Prot			Perm		pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	20.8	62.4	37.6	37.6	9.6	34.4
Effective Green, g (s)	20.8	62.4	37.6	37.6	9.6	34.4
Actuated g/C Ratio	0.26	0.78	0.47	0.47	0.12	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.3	6.0	4.2	4.2	2.3	
Lane Grp Cap (vph)	424	1338	807	685	199	627
v/s Ratio Prot	c0.21	0.56	c0.45		0.04	c0.19
v/s Ratio Perm				0.04		
v/c Ratio	0.83	0.72	0.96	0.09	0.35	0.43
Uniform Delay, d1	27.9	4.4	20.4	11.7	32.3	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.0	3.4	22.7	0.2	0.6	0.3
Delay (s)	39.9	7.8	43.1	12.0	33.0	16.3
Level of Service	D	A	D	B	C	B
Approach Delay (s)		16.4	40.3		19.2	
Approach LOS		B	D		B	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	13	456	212	88	156	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	507	236	98	173	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	333				820	284
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333				820	284
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				49	99
cM capacity (veh/h)	1237				342	759

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	521	333	178
Volume Left	14	0	173
Volume Right	0	98	4
cSH	1237	1700	347
Volume to Capacity	0.01	0.20	0.51
Queue Length 95th (ft)	1	0	70
Control Delay (s)	0.3	0.0	25.8
Lane LOS	A		D
Approach Delay (s)	0.3	0.0	25.8
Approach LOS			D

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	2	96	1	113	7	273	116	190	553	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	1	2	113	1	133	8	321	136	224	651	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			1			1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1502	1435	651	1437	1435	321	651			321		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1502	1435	651	1437	1435	321	651			321		
tC, single (s)	7.1	6.5	6.7	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.8	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	99	99	0	99	81	99			82		
cM capacity (veh/h)	69	109	394	94	109	699	945			1227		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	4	247	8	321	136	224	651	1
Volume Left	0	113	8	0	0	224	0	0
Volume Right	2	133	0	0	136	0	0	1
cSH	328	179	945	1700	1700	1227	1700	1700
Volume to Capacity	0.01	1.38	0.01	0.19	0.08	0.18	0.38	0.00
Queue Length 95th (ft)	1	369	1	0	0	17	0	0
Control Delay (s)	22.2	250.3	8.8	0.0	0.0	8.6	0.0	0.0
Lane LOS	C	F	A			A		
Approach Delay (s)	22.2	250.3	0.2			2.2		
Approach LOS	C	F						

Intersection Summary				
Average Delay	40.1			
Intersection Capacity Utilization	57.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	402	23	9	648	13	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	428	24	10	689	14	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			452		791	214
vC1, stage 1 conf vol					428	
vC2, stage 2 conf vol					364	
vCu, unblocked vol			452		791	214
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	98
cM capacity (veh/h)			1119		530	797

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	214	214	24	10	345	345	27
Volume Left	0	0	0	10	0	0	14
Volume Right	0	0	24	0	0	0	13
cSH	1700	1700	1700	1119	1700	1700	632
Volume to Capacity	0.13	0.13	0.01	0.01	0.20	0.20	0.04
Queue Length 95th (ft)	0	0	0	1	0	0	3
Control Delay (s)	0.0	0.0	0.0	8.2	0.0	0.0	10.9
Lane LOS				A			B
Approach Delay (s)	0.0			0.1			10.9
Approach LOS							B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	29.4%	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 (veh/h)	25	193	0	0	462	8	0	0	0	1	0	83
Sign Control		Free			Free			Stop			Stop	
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)	27	210	0	0	502	9	0	0	0	1	0	90
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	511			210			857	775	105	666	771	507
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	511			210			857	775	105	666	771	507
tC, single (s)	4.3			4.1			7.5	6.5	6.9	7.5	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	100	100	82
cM capacity (veh/h)	1010			1373			205	322	936	342	324	506

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	27	140	70	0	511	0	0	91
Volume Left	27	0	0	0	0	0	0	1
Volume Right	0	0	0	0	9	0	0	90
cSH	1010	1700	1700	1700	1700	1700	1700	503
Volume to Capacity	0.03	0.08	0.04	0.00	0.30	0.00	0.00	0.18
Queue Length 95th (ft)	2	0	0	0	0	0	0	16
Control Delay (s)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	13.7
Lane LOS	A					A	A	B
Approach Delay (s)	1.0			0.0		0.0		13.7
Approach LOS						A		B

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	13	178	431	89	23	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	15	205	495	102	26	44
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	495				628	495
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	495				628	495
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				93	92
cM capacity (veh/h)	1079				405	517

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	15	102	102	495	102	26	44
Volume Left	15	0	0	0	0	26	0
Volume Right	0	0	0	0	102	0	44
cSH	1079	1700	1700	1700	1700	405	517
Volume to Capacity	0.01	0.06	0.06	0.29	0.06	0.07	0.08
Queue Length 95th (ft)	1	0	0	0	0	5	7
Control Delay (s)	8.4	0.0	0.0	0.0	0.0	14.5	12.6
Lane LOS	A					B	B
Approach Delay (s)	0.6			0.0		13.3	
Approach LOS						B	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.6%	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)	12	711	96	141	620	127	66	218	128	108	206	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.5	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	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.94		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1821		1805	1794		1766	1769		1752	1859	
Flt Permitted	0.95	1.00		0.95	1.00		0.44	1.00		0.24	1.00	
Satd. Flow (perm)	1805	1821		1805	1794		822	1769		435	1859	
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)	13	748	101	148	653	134	69	229	135	114	217	19
RTOR Reduction (vph)	0	4	0	0	5	0	0	17	0	0	2	0
Lane Group Flow (vph)	13	845	0	148	782	0	69	347	0	114	234	0
Confl. Peds. (#/hr)	15					15	1					1
Confl. Bikes (#/hr)		20	1		17			3	1			
Heavy Vehicles (%)	0%	2%	4%	0%	2%	2%	2%	1%	0%	3%	0%	10%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	2.6	58.4		14.1	69.9		30.3	30.3		30.3	30.3	
Effective Green, g (s)	2.6	58.4		14.1	69.9		30.3	30.3		30.3	30.3	
Actuated g/C Ratio	0.02	0.50		0.12	0.60		0.26	0.26		0.26	0.26	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	3.0		2.5	3.0		0.5	0.5		2.5	2.5	
Lane Grp Cap (vph)	41	918		220	1083		215	463		114	486	
v/s Ratio Prot	0.01	c0.46		c0.08	0.44			0.20			0.13	
v/s Ratio Perm							0.08			c0.26		
v/c Ratio	0.32	0.92		0.67	0.72		0.32	0.75		1.00	0.48	
Uniform Delay, d1	55.7	26.6		48.6	16.1		34.5	39.3		42.8	36.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	14.2		7.2	2.4		0.3	5.8		84.3	0.5	
Delay (s)	59.0	40.7		55.8	18.5		34.8	45.0		127.0	36.7	
Level of Service	E	D		E	B		C	D		F	D	
Approach Delay (s)		41.0			24.4			43.4			66.1	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	38.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	115.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	828	59	117	837	221	27	115	49	67	118	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.98			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.99	
Frt	1.00	0.99		1.00	0.97			0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1687	1837		1770	1772			1736			1706	
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.72	
Satd. Flow (perm)	1687	1837		1770	1772			1582			1253	
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)	102	862	61	122	872	230	28	120	51	70	123	47
RTOR Reduction (vph)	0	2	0	0	6	0	0	10	0	0	7	0
Lane Group Flow (vph)	102	921	0	122	1096	0	0	189	0	0	233	0
Confl. Peds. (#/hr)	22		19	19		22	3		15	15		3
Confl. Bikes (#/hr)		5			1			2				
Heavy Vehicles (%)	7%	2%	0%	2%	2%	2%	4%	4%	0%	4%	6%	6%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	11.5	65.6		12.9	67.0			24.2			24.2	
Effective Green, g (s)	11.5	65.6		12.9	67.0			24.2			24.2	
Actuated g/C Ratio	0.10	0.57		0.11	0.58			0.21			0.21	
Clearance Time (s)	4.0	4.5		4.0	4.5			4.5			4.5	
Vehicle Extension (s)	2.5	3.0		2.5	4.0			2.5			2.5	
Lane Grp Cap (vph)	168	1042		197	1026			331			262	
v/s Ratio Prot	0.06	0.50		c0.07	c0.62							
v/s Ratio Perm								0.12			c0.19	
v/c Ratio	0.61	0.88		0.62	1.07			0.57			0.89	
Uniform Delay, d1	49.9	21.8		49.1	24.4			41.1			44.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.1	9.1		4.9	48.1			1.9			28.2	
Delay (s)	55.1	30.8		53.9	72.4			43.0			72.7	
Level of Service	E	C		D	E			D			E	
Approach Delay (s)		33.2			70.6			43.0			72.7	
Approach LOS		C			E			D			E	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	115.7	Sum of lost time (s)	8.5
Intersection Capacity Utilization	97.4%	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 (veh/h)	61	908	14	39	954	48	38	10	116	100	8	109
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	66	976	15	42	1026	52	41	11	125	108	9	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									3			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)					503							
pX, platoon unblocked	0.78						0.78	0.78		0.78	0.78	0.78
vC, conflicting volume	1077			991			1833	2276	984	2248	2258	539
vC1, stage 1 conf vol							1115	1115		1135	1135	
vC2, stage 2 conf vol							718	1161		1113	1123	
vCu, unblocked vol	527			991			1499	2069	984	2033	2046	0
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			94			78	94	50	0	95	86
cM capacity (veh/h)	817			669			190	189	248	55	184	848

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	66	991	42	684	394	176	116	117
Volume Left	66	0	42	0	0	41	108	0
Volume Right	0	15	0	0	52	125	0	117
cSH	817	1700	669	1700	1700	350	58	848
Volume to Capacity	0.08	0.58	0.06	0.40	0.23	0.50	2.01	0.14
Queue Length 95th (ft)	7	0	5	0	0	68	280	12
Control Delay (s)	9.8	0.0	10.7	0.0	0.0	32.7	624.1	9.9
Lane LOS	A		B			D	F	A
Approach Delay (s)	0.6		0.4			32.7	315.6	
Approach LOS						D	F	

Intersection Summary				
Average Delay	31.1			
Intersection Capacity Utilization	71.8%	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)	187	861	198	358	717	198	364	869	419	403	970	149
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	5.0	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	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	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1577	3467	3394		1770	3505	1553	1770	3539	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1577	3467	3394		1770	3505	1553	1770	3539	1615
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)	199	916	211	381	763	211	387	924	446	429	1032	159
RTOR Reduction (vph)	0	0	75	0	20	0	0	0	180	0	0	60
Lane Group Flow (vph)	199	916	136	381	954	0	387	924	266	429	1032	99
Confl. Peds. (#/hr)	2		1	1		2			4	4		
Confl. Bikes (#/hr)					1			2				
Heavy Vehicles (%)	2%	2%	1%	1%	3%	1%	2%	3%	2%	2%	2%	0%
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	14.5	35.3	35.3	14.5	35.3		26.7	32.7	32.7	29.0	35.5	35.5
Effective Green, g (s)	14.5	35.3	35.3	14.5	35.3		26.7	32.7	32.7	29.0	35.5	35.5
Actuated g/C Ratio	0.11	0.27	0.27	0.11	0.27		0.21	0.25	0.25	0.22	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	5.0	4.5	4.5
Vehicle Extension (s)	2.3	4.3	4.3	2.3	4.3		2.3	4.3	4.3	2.3	2.3	2.3
Lane Grp Cap (vph)	197	961	428	387	922		364	882	391	395	966	441
v/s Ratio Prot	c0.11	0.26		0.11	c0.28		0.22	0.26		c0.24	c0.29	
v/s Ratio Perm			0.09						0.17			0.06
v/c Ratio	1.01	0.95	0.32	0.98	1.04		1.06	1.05	0.68	1.09	1.07	0.22
Uniform Delay, d1	57.8	46.5	37.7	57.6	47.4		51.6	48.6	43.9	50.5	47.2	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.17	0.53	0.48	1.00	1.00	1.00
Incremental Delay, d2	66.8	19.7	1.9	41.3	39.1		57.3	38.8	6.5	70.4	49.0	1.2
Delay (s)	124.5	66.2	39.7	98.9	86.4		117.9	64.5	27.6	120.9	96.3	37.8
Level of Service	F	E	D	F	F		F	E	C	F	F	D
Approach Delay (s)		70.8			89.9			66.9			97.0	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	81.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	98.5%	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												
Volume (vph)	0	1660	86	0	1576	77	0	0	136	39	0	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5				5.5		3.0	
Lane Util. Factor		0.91			0.95				1.00		1.00	
Frpb, ped/bikes		1.00			1.00				1.00		0.99	
Flpb, ped/bikes		1.00			1.00				1.00		1.00	
Frt		0.99			0.99				0.86		0.89	
Flt Protected		1.00			1.00				1.00		0.99	
Satd. Flow (prot)		5036			3511				1644		1539	
Flt Permitted		1.00			1.00				1.00		0.99	
Satd. Flow (perm)		5036			3511				1644		1539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1711	89	0	1625	79	0	0	140	40	0	171
RTOR Reduction (vph)	0	5	0	0	3	0	0	0	122	0	5	0
Lane Group Flow (vph)	0	1795	0	0	1701	0	0	0	18	0	206	0
Confl. Peds. (#/hr)	2		4	4		2	3					3
Confl. Bikes (#/hr)		3			2							
Heavy Vehicles (%)	0%	2%	4%	0%	2%	2%	0%	0%	0%	6%	0%	8%
Turn Type									custom	Split		
Protected Phases		2			6					4	4	
Permitted Phases									8			
Actuated Green, G (s)		48.6			48.6				9.9		18.9	
Effective Green, g (s)		48.6			48.6				9.9		18.9	
Actuated g/C Ratio		0.65			0.65				0.13		0.25	
Clearance Time (s)		4.5			4.5				5.5		3.0	
Vehicle Extension (s)		4.0			4.0				2.5		0.2	
Lane Grp Cap (vph)		3263			2275				217		388	
v/s Ratio Prot		0.36			c0.48						c0.13	
v/s Ratio Perm									0.01			
v/c Ratio		0.55			0.75				0.09		0.53	
Uniform Delay, d1		7.2			9.0				28.6		24.2	
Progression Factor		1.00			1.00				1.00		1.00	
Incremental Delay, d2		0.7			2.3				0.1		0.7	
Delay (s)		7.9			11.3				28.7		24.9	
Level of Service		A			B				C		C	
Approach Delay (s)		7.9			11.3			28.7			24.9	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	7.5
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1112	524	152	827	0	0	0	0	232	0	782
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.0	4.0	4.5					5.0		5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					1.00		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		3539	1583	1787	3574					1805		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		3539	1583	1787	3574					1805		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1158	546	158	861	0	0	0	0	242	0	815
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	259
Lane Group Flow (vph)	0	1158	546	158	861	0	0	0	0	242	0	556
Heavy Vehicles (%)	0%	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%	2%
Turn Type			Free	Prot						Prot		custom
Protected Phases		2		1	6					4		5
Permitted Phases			Free									
Actuated Green, G (s)		58.2	100.0	12.9	31.0					15.4		39.1
Effective Green, g (s)		58.2	100.0	12.9	31.0					15.4		39.1
Actuated g/C Ratio		0.58	1.00	0.13	0.31					0.15		0.39
Clearance Time (s)		4.5		4.0	4.5					5.0		5.0
Vehicle Extension (s)		5.5		2.3	5.5					2.3		2.3
Lane Grp Cap (vph)		2060	1583	231	1108					278		619
v/s Ratio Prot		0.33		0.09	c0.24					c0.13		c0.35
v/s Ratio Perm			0.34									
v/c Ratio		0.56	0.34	0.68	0.78					0.87		0.90
Uniform Delay, d1		13.0	0.0	41.6	31.4					41.3		28.6
Progression Factor		1.00	1.00	1.52	0.85					1.00		1.00
Incremental Delay, d2		1.1	0.6	6.7	5.1					24.0		15.6
Delay (s)		14.1	0.6	69.9	31.6					65.3		44.2
Level of Service		B	A	E	C					E		D
Approach Delay (s)		9.8			37.5			0.0			49.0	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	638	738	152	464	597	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.0	4.5	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	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)	3610	1583	1770	3574	3502	1561
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1583	1770	3574	3502	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	679	785	162	494	635	210
RTOR Reduction (vph)	0	444	0	0	0	161
Lane Group Flow (vph)	679	341	162	494	635	49
Confl. Peds. (#/hr)						2
Heavy Vehicles (%)	0%	2%	2%	1%	0%	2%
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	43.4	43.4	20.0	67.4	23.1	23.1
Effective Green, g (s)	43.4	43.4	20.0	67.4	23.1	23.1
Actuated g/C Ratio	0.43	0.43	0.20	0.67	0.23	0.23
Clearance Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
Vehicle Extension (s)	5.5	5.5	2.3	5.5	2.3	2.3
Lane Grp Cap (vph)	1567	687	354	2409	809	361
v/s Ratio Prot	0.19		c0.09	0.14	c0.18	
v/s Ratio Perm		c0.22				0.03
v/c Ratio	0.43	0.50	0.46	0.21	0.78	0.13
Uniform Delay, d1	19.7	20.4	35.2	6.2	36.1	30.5
Progression Factor	0.67	1.64	1.40	2.24	1.00	1.00
Incremental Delay, d2	0.7	2.1	0.4	0.1	4.8	0.1
Delay (s)	13.9	35.6	49.8	14.0	40.9	30.6
Level of Service	B	D	D	B	D	C
Approach Delay (s)	25.6			22.8	38.3	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.2%	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)	302	206	374	38	87	20	205	443	59	41	458	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.2		4.0	4.5		4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
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	0.90		1.00	0.97		1.00	0.98		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)	1787	3261		1805	3492		1787	1850		1805	1881	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3261		1805	3492		1787	1850		1805	1881	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)	328	224	407	41	95	22	223	482	64	45	498	235
RTOR Reduction (vph)	0	174	0	0	15	0	0	5	0	0	0	104
Lane Group Flow (vph)	328	457	0	41	102	0	223	541	0	45	498	131
Confl. Peds. (#/hr)	3					3	1					1
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	2%
Turn Type	Prot			Prot			Prot			Prot		Prot
Protected Phases	5	2		1	6		3	8		7	4	4
Permitted Phases												
Actuated Green, G (s)	14.0	39.4		3.9	29.6		8.0	36.5		3.2	31.7	31.7
Effective Green, g (s)	14.0	39.4		3.9	29.6		8.0	36.5		3.2	31.7	31.7
Actuated g/C Ratio	0.14	0.39		0.04	0.30		0.08	0.36		0.03	0.32	0.32
Clearance Time (s)	4.0	4.5		4.0	4.2		4.0	4.5		4.0	4.5	4.5
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	250	1285		70	1034		143	675		58	596	502
v/s Ratio Prot	c0.18	c0.14		0.02	0.03		c0.12	c0.29		0.02	0.26	0.08
v/s Ratio Perm												
v/c Ratio	1.31	0.36		0.59	0.10		1.56	0.80		0.78	0.84	0.26
Uniform Delay, d1	43.0	21.4		47.3	25.5		46.0	28.5		48.0	31.7	25.4
Progression Factor	1.18	0.07		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	164.8	0.7		11.9	0.2		283.0	6.8		46.8	9.9	0.3
Delay (s)	215.6	2.2		59.1	25.7		329.0	35.3		94.9	41.6	25.7
Level of Service	F	A		E	C		F	D		F	D	C
Approach Delay (s)		75.2			34.4			120.5			39.9	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM Average Control Delay	75.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	26	37	143	26	91	72	1432	66	115	1287	26
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	4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.97	1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1720			1802	1545	1805	3539	1528	1787	3525	
Flt Permitted		0.59			0.65	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1042			1217	1545	1805	3539	1528	1787	3525	
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)	99	27	39	151	27	96	76	1507	69	121	1355	27
RTOR Reduction (vph)	0	8	0	0	0	72	0	0	12	0	1	0
Lane Group Flow (vph)	0	157	0	0	178	24	76	1507	57	121	1381	0
Confl. Peds. (#/hr)	13		3	3		13	15		9	9		15
Heavy Vehicles (%)	3%	0%	3%	1%	0%	1%	0%	2%	0%	1%	2%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			
Actuated Green, G (s)		32.5			32.5	32.5	8.5	72.3	72.3	12.2	76.0	
Effective Green, g (s)		32.5			32.5	32.5	8.5	72.3	72.3	12.2	76.0	
Actuated g/C Ratio		0.25			0.25	0.25	0.07	0.56	0.56	0.09	0.58	
Clearance Time (s)		4.5			4.5	4.5	4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)		4.2			4.2	4.2	2.3	4.2	4.2	2.3	4.2	
Lane Grp Cap (vph)		261			304	386	118	1968	850	168	2061	
v/s Ratio Prot							0.04	c0.43		c0.07	c0.39	
v/s Ratio Perm		c0.15			0.15	0.02			0.04			
v/c Ratio		0.60			0.59	0.06	0.64	0.77	0.07	0.72	0.67	
Uniform Delay, d1		43.0			42.8	37.1	59.3	22.3	13.3	57.2	18.4	
Progression Factor		1.00			1.00	1.00	0.94	1.52	1.13	0.58	2.42	
Incremental Delay, d2		9.8			8.0	0.3	5.7	1.7	0.1	4.0	0.5	
Delay (s)		52.9			50.9	37.4	61.7	35.6	15.1	37.0	45.2	
Level of Service		D			D	D	E	D	B	D	D	
Approach Delay (s)		52.9			46.2			36.0			44.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	12	435	4	79	8	1350	261	160	1183	9
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	4.0	4.5	4.5	4.0	4.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.97			1.00	0.97	1.00	1.00	0.95	1.00	1.00	
Flpb, ped/bikes		1.00			0.98	1.00	0.99	1.00	1.00	1.00	1.00	
Frt		0.89			1.00	0.85	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)		1647			1756	1553	1796	3539	1529	1770	3535	
Flt Permitted		1.00			0.72	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1647			1321	1553	1796	3539	1529	1770	3535	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	3	13	458	4	83	8	1421	275	168	1245	9
RTOR Reduction (vph)	0	8	0	0	0	53	0	0	50	0	0	0
Lane Group Flow (vph)	0	8	0	0	462	30	8	1421	225	168	1254	0
Confl. Peds. (#/hr)	8		13	13		8	9		10	10		9
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	0%	2%	0%	2%	2%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			
Actuated Green, G (s)		46.6			46.6	46.6	0.8	57.1	57.1	13.3	69.6	
Effective Green, g (s)		46.6			46.6	46.6	0.8	57.1	57.1	13.3	69.6	
Actuated g/C Ratio		0.36			0.36	0.36	0.01	0.44	0.44	0.10	0.54	
Clearance Time (s)		4.5			4.5	4.5	4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.2	4.2	2.3	4.2	
Lane Grp Cap (vph)		590			474	557	11	1554	672	181	1893	
v/s Ratio Prot		0.00					0.00	c0.40		c0.09	0.35	
v/s Ratio Perm					c0.35	0.02			0.15			
v/c Ratio		0.01			0.97	0.05	0.73	0.91	0.33	0.93	0.66	
Uniform Delay, d1		26.9			41.1	27.3	64.5	34.2	24.0	57.9	21.7	
Progression Factor		1.00			1.00	1.00	0.96	0.84	1.04	0.64	1.30	
Incremental Delay, d2		0.0			34.5	0.0	96.9	8.0	1.0	38.3	1.4	
Delay (s)		26.9			75.6	27.3	158.5	36.8	25.9	75.5	29.7	
Level of Service		C			E	C	F	D	C	E	C	
Approach Delay (s)		26.9			68.3			35.6			35.1	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM Average Control Delay	40.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	288	62	24	163	93	109	70	60	341	69	203
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		4.8	4.8	4.8		4.8	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00		0.99	
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1617	1826		1800	1753		1785	1863	1548		1712	
Flt Permitted	0.47	1.00		0.30	1.00		0.45	1.00	1.00		0.78	
Satd. Flow (perm)	798	1826		574	1753		852	1863	1548		1381	
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)	67	320	69	27	181	103	121	78	67	379	77	226
RTOR Reduction (vph)	0	15	0	0	39	0	0	0	30	0	28	0
Lane Group Flow (vph)	67	374	0	27	245	0	121	78	37	0	654	0
Confl. Peds. (#/hr)	7		4	4		7	3		17	17		3
Confl. Bikes (#/hr)		1						1			1	
Heavy Vehicles (%)	11%	1%	0%	0%	2%	0%	1%	2%	0%	1%	0%	2%
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	13.2	13.2		13.2	13.2		26.6	26.6	26.6		26.6	
Effective Green, g (s)	13.2	13.2		13.2	13.2		26.6	26.6	26.6		26.6	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.55	0.55	0.55		0.55	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.8	4.8	4.8		4.8	
Vehicle Extension (s)	0.7	0.7		0.7	0.7		1.0	1.0	1.0		1.0	
Lane Grp Cap (vph)	217	496		156	476		466	1020	847		756	
v/s Ratio Prot		c0.21			0.14			0.04				
v/s Ratio Perm	0.08			0.05			0.14		0.02		c0.47	
v/c Ratio	0.31	0.75		0.17	0.52		0.26	0.08	0.04		0.86	
Uniform Delay, d1	14.1	16.2		13.5	15.0		5.8	5.2	5.1		9.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	5.7		0.2	0.4		0.1	0.0	0.0		9.8	
Delay (s)	14.4	22.0		13.7	15.4		5.9	5.2	5.1		19.3	
Level of Service	B	C		B	B		A	A	A		B	
Approach Delay (s)		20.8			15.2			5.5			19.3	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	8.8
Intersection Capacity Utilization	75.3%	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												
Volume (vph)	125	377	192	65	111	129	107	440	66	309	441	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.7		4.0	4.8		4.0	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		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	0.92		1.00	0.98		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)	1805	1881	1615	1770	1649		1787	1837		1787	1830	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1881	1615	1770	1649		1787	1837		1787	1830	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	134	405	206	70	119	139	115	473	71	332	474	105
RTOR Reduction (vph)	0	0	116	0	30	0	0	4	0	0	6	0
Lane Group Flow (vph)	134	405	90	70	228	0	115	540	0	332	573	0
Confl. Peds. (#/hr)	1		2	2		1			1	1		
Heavy Vehicles (%)	0%	1%	0%	2%	3%	6%	1%	1%	2%	1%	1%	1%
Turn Type	Prot		Prot	Prot			Prot			Prot		
Protected Phases	3	8	8	7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	12.5	30.3	30.3	7.1	25.0		11.8	41.0		26.4	55.9	
Effective Green, g (s)	12.5	30.3	30.3	7.1	25.0		11.8	41.0		26.4	55.9	
Actuated g/C Ratio	0.10	0.25	0.25	0.06	0.20		0.10	0.33		0.22	0.46	
Clearance Time (s)	4.0	4.8	4.8	4.0	4.7		4.0	4.8		4.0	4.5	
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	184	466	400	103	337		172	615		385	836	
v/s Ratio Prot	c0.07	c0.22	0.06	0.04	0.14		0.06	c0.29		c0.19	0.31	
v/s Ratio Perm												
v/c Ratio	0.73	0.87	0.23	0.68	0.68		0.67	0.88		0.86	0.69	
Uniform Delay, d1	53.3	44.1	36.7	56.5	45.0		53.4	38.3		46.2	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.6	15.6	0.2	15.0	4.8		8.5	13.8		17.5	2.5	
Delay (s)	65.9	59.7	36.9	71.5	49.8		62.0	52.1		63.8	28.8	
Level of Service	E	E	D	E	D		E	D		E	C	
Approach Delay (s)		54.5			54.4			53.8			41.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	122.4	Sum of lost time (s)	12.8
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	81	76	81	1542	1355	76
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	83	88	1676	1473	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)				875	755	
pX, platoon unblocked	0.86	0.75	0.75			
vC, conflicting volume	2528	778	1555			
vC1, stage 1 conf vol	1514					
vC2, stage 2 conf vol	1014					
vCu, unblocked vol	1143	36	1073			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	89	82			
cM capacity (veh/h)	220	771	484			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	171	88	838	838	982	574
Volume Left	88	88	0	0	0	0
Volume Right	83	0	0	0	0	83
cSH	336	484	1700	1700	1700	1700
Volume to Capacity	0.51	0.18	0.49	0.49	0.58	0.34
Queue Length 95th (ft)	68	16	0	0	0	0
Control Delay (s)	26.2	14.1	0.0	0.0	0.0	0.0
Lane LOS	D	B				
Approach Delay (s)	26.2	0.7			0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	326	45	167	25	22	41	189	1328	10	47	1183	436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor		0.95			0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.99			0.99		1.00	1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes		0.99			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95			0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3171			3256		1752	3539	1566	1805	3539	1599
Flt Permitted		0.75			0.72		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		2436			2393		1752	3539	1566	1805	3539	1599
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)	343	47	176	26	23	43	199	1398	11	49	1245	459
RTOR Reduction (vph)	0	42	0	0	32	0	0	0	2	0	0	79
Lane Group Flow (vph)	0	524	0	0	60	0	199	1398	9	49	1245	380
Confl. Peds. (#/hr)	14		21	21		14	14		9	9		14
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	0%	5%	0%	0%	0%	3%	2%	0%	0%	2%	1%
Turn Type	Perm			Perm			Prot		Perm	Prot		Prot
Protected Phases		8			4		1	6		5	2	2
Permitted Phases	8			4					6			
Actuated Green, G (s)		31.8			31.8		18.4	78.6	78.6	6.6	66.8	66.8
Effective Green, g (s)		31.8			31.8		18.4	78.6	78.6	6.6	66.8	66.8
Actuated g/C Ratio		0.24			0.24		0.14	0.60	0.60	0.05	0.51	0.51
Clearance Time (s)		4.5			4.5		4.0	4.5	4.5	4.0	4.5	4.5
Vehicle Extension (s)		2.5			2.5		2.3	4.2	4.2	2.3	4.2	4.2
Lane Grp Cap (vph)		596			585		248	2140	947	92	1819	822
v/s Ratio Prot							c0.11	0.40		0.03	c0.35	0.24
v/s Ratio Perm		c0.21			0.02				0.01			
v/c Ratio		0.98dl			0.10		0.80	0.65	0.01	0.53	0.68	0.46
Uniform Delay, d1		47.2			38.0		54.0	16.8	10.2	60.2	23.7	20.2
Progression Factor		1.00			1.00		0.66	1.74	1.52	1.06	0.60	0.49
Incremental Delay, d2		13.7			0.1		13.7	1.3	0.0	3.1	1.7	1.5
Delay (s)		61.0			38.1		49.1	30.6	15.6	66.8	16.0	11.4
Level of Service		E			D		D	C	B	E	B	B
Approach Delay (s)		61.0			38.1			32.8			16.2	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	462	170	161	412	14	98	5	120	16	14	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	513	189	179	458	16	109	6	133	18	16	22
Pedestrians		1			2						7	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		0			0						1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					191							
pX, platoon unblocked												
vC, conflicting volume	480			702			1230	1450	353	1230	1537	245
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	480			702			1230	1450	353	1230	1537	245
tC, single (s)	4.1			4.1			7.6	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			80			0	95	79	80	83	97
cM capacity (veh/h)	1086			905			95	105	648	87	93	757

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	259	446	408	244	248	56
Volume Left	2	0	179	0	109	18
Volume Right	0	189	0	16	133	22
cSH	1086	1700	905	1700	176	139
Volume to Capacity	0.00	0.26	0.20	0.14	1.40	0.40
Queue Length 95th (ft)	0	0	18	0	377	43
Control Delay (s)	0.1	0.0	5.6	0.0	262.1	47.4
Lane LOS	A		A		F	E
Approach Delay (s)	0.0		3.5		262.1	47.4
Approach LOS					F	E

Intersection Summary				
Average Delay	42.1			
Intersection Capacity Utilization	64.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	198	462	362	123	133	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0		4.5	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.97		0.92	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1787	1845	1776		1679	
Flt Permitted	0.95	1.00	1.00		0.98	
Satd. Flow (perm)	1787	1845	1776		1679	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	502	393	134	145	186
RTOR Reduction (vph)	0	0	11	0	40	0
Lane Group Flow (vph)	215	502	516	0	291	0
Confl. Peds. (#/hr)	5			5	12	
Confl. Bikes (#/hr)	1					
Heavy Vehicles (%)	1%	3%	2%	4%	4%	1%
Turn Type	Prot					
Protected Phases	5	2	6		4	
Permitted Phases						
Actuated Green, G (s)	15.4	49.8	30.4		19.9	
Effective Green, g (s)	15.4	49.8	30.4		19.9	
Actuated g/C Ratio	0.19	0.63	0.38		0.25	
Clearance Time (s)	4.0	5.0	5.0		4.5	
Vehicle Extension (s)	2.5	3.0	3.0		2.5	
Lane Grp Cap (vph)	347	1160	682		422	
v/s Ratio Prot	c0.12	0.27	c0.29		c0.17	
v/s Ratio Perm						
v/c Ratio	0.62	0.43	0.76		0.69	
Uniform Delay, d1	29.2	7.5	21.2		26.8	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	2.8	0.3	4.8		4.2	
Delay (s)	32.0	7.8	26.0		31.1	
Level of Service	C	A	C		C	
Approach Delay (s)		15.0	26.0		31.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

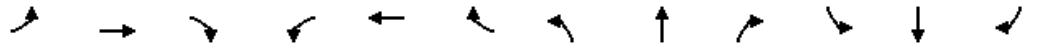
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	0	9	31	0	72	6	1545	24	64	1438	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.8	4.8	4.0	4.8	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1695			1770	1583	1770	3539	1583	1770	3535	
Flt Permitted		0.84			0.74	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1456			1386	1583	1770	3539	1583	1770	3535	
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)	10	0	10	34	0	78	7	1679	26	70	1563	12
RTOR Reduction (vph)	0	9	0	0	0	74	0	0	6	0	0	0
Lane Group Flow (vph)	0	11	0	0	34	4	7	1679	20	70	1575	0
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			
Actuated Green, G (s)		7.2			7.2	7.2	1.3	101.4	101.4	8.6	108.7	
Effective Green, g (s)		7.2			7.2	7.2	1.3	101.4	101.4	8.6	108.7	
Actuated g/C Ratio		0.06			0.06	0.06	0.01	0.78	0.78	0.07	0.84	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.8	4.8	4.0	4.8	
Vehicle Extension (s)		2.5			2.5	2.5	2.3	5.2	5.2	2.3	5.2	
Lane Grp Cap (vph)		81			77	88	18	2760	1235	117	2956	
v/s Ratio Prot							0.00	c0.47		c0.04	0.45	
v/s Ratio Perm		0.01			c0.02	0.00			0.01			
v/c Ratio		0.13			0.44	0.05	0.39	0.61	0.02	0.60	0.53	
Uniform Delay, d1		58.4			59.5	58.2	64.0	6.0	3.2	59.0	3.1	
Progression Factor		1.00			1.00	1.00	1.02	0.57	0.46	1.21	1.12	
Incremental Delay, d2		0.5			2.9	0.2	6.3	0.8	0.0	5.0	0.6	
Delay (s)		59.0			62.4	58.3	71.2	4.2	1.5	76.1	4.1	
Level of Service		E			E	E	E	A	A	E	A	
Approach Delay (s)		59.0			59.6			4.5			7.1	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	147	144	88	190	87	175	54	1086	104	216	1079	41
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	4.5	4.5	4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00	0.92	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	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1725		1752	1881	1528	1805	3539	1486	1770	3483	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	1725		1752	1881	1528	1805	3539	1486	1770	3483	
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)	153	150	92	198	91	182	56	1131	108	225	1124	43
RTOR Reduction (vph)	0	18	0	0	0	148	0	0	42	0	2	0
Lane Group Flow (vph)	153	224	0	198	91	34	56	1131	66	225	1165	0
Confl. Peds. (#/hr)	3		19	19		3	7		17	17		7
Confl. Bikes (#/hr)								1			1	
Heavy Vehicles (%)	3%	3%	1%	3%	1%	4%	0%	2%	0%	2%	3%	0%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	13.9	20.5		17.4	24.0	24.0	6.9	53.7	53.7	21.9	68.7	
Effective Green, g (s)	13.9	20.5		17.4	24.0	24.0	6.9	53.7	53.7	21.9	68.7	
Actuated g/C Ratio	0.11	0.16		0.13	0.18	0.18	0.05	0.41	0.41	0.17	0.53	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	5.1	5.1	2.3	5.1	
Lane Grp Cap (vph)	187	272		234	347	282	96	1462	614	298	1841	
v/s Ratio Prot	0.09	c0.13		c0.11	c0.05		0.03	c0.32		c0.13	0.33	
v/s Ratio Perm						0.02			0.04			
v/c Ratio	0.82	0.82		0.85	0.26	0.12	0.58	0.77	0.11	0.76	0.63	
Uniform Delay, d1	56.8	53.0		55.0	45.4	44.2	60.1	32.9	23.4	51.5	21.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.18	1.26	1.82	0.73	0.45	
Incremental Delay, d2	22.7	17.5		23.0	0.2	0.1	2.3	1.4	0.1	8.6	1.5	
Delay (s)	79.5	70.5		78.0	45.6	44.3	73.5	42.8	42.9	46.0	11.2	
Level of Service	E	E		E	D	D	E	D	D	D	B	
Approach Delay (s)		74.0			58.7			44.1			16.8	
Approach LOS		E			E			D			B	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	83.3%	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)	3	0	169	237	20	67	128	1204	406	104	1205	2
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			6.0	6.0	4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.99			1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.85		1.00	0.89			1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1798	1578		1770	1647			3528	1538	1752	3504	
Flt Permitted	0.65	1.00		0.95	1.00			0.63	1.00	0.95	1.00	
Satd. Flow (perm)	1222	1578		1770	1647			2221	1538	1752	3504	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	3	0	174	244	21	69	132	1241	419	107	1242	2
RTOR Reduction (vph)	0	90	0	0	57	0	0	0	73	0	0	0
Lane Group Flow (vph)	3	84	0	244	33	0	0	1373	346	107	1244	0
Confl. Peds. (#/hr)	2		8	8		2	5		6	6		5
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	1%	0%	2%	1%	3%	3%	0%
Turn Type	Perm			Prot			Perm		Perm	Prot		
Protected Phases		4!		4!	8			6		5	2	
Permitted Phases	4						6		6			
Actuated Green, G (s)	22.1	22.1		22.1	22.1			81.7	81.7	12.2	98.9	
Effective Green, g (s)	22.1	22.1		22.1	22.1			81.7	81.7	12.2	98.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17			0.63	0.63	0.09	0.76	
Clearance Time (s)	4.0	4.0		4.0	4.0			6.0	6.0	4.0	5.0	
Vehicle Extension (s)	2.3	2.3		2.3	3.0			4.5	4.5	2.3	4.5	
Lane Grp Cap (vph)	208	268		301	280			1396	967	164	2666	
v/s Ratio Prot		0.05		c0.14	0.02					c0.06	0.36	
v/s Ratio Perm	0.00							c0.62	0.23			
v/c Ratio	0.01	0.31		0.81	0.12			0.98	0.36	0.65	0.47	
Uniform Delay, d1	44.9	47.3		51.9	45.7			23.5	11.6	56.9	5.8	
Progression Factor	1.00	1.00		1.00	1.00			0.57	0.18	0.86	0.91	
Incremental Delay, d2	0.0	0.4		14.6	0.2			11.9	0.4	5.8	0.4	
Delay (s)	44.9	47.7		66.6	45.9			25.3	2.5	54.9	5.7	
Level of Service	D	D		E	D			C	A	D	A	
Approach Delay (s)		47.7			61.0			20.0			9.6	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	309	664	388	226	664	282	289	1033	180	341	1176	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.8	4.8	4.0	5.4	5.4	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1559	1787	3610	1575	1805	3539	1570	1805	3505	1570
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1559	1787	3610	1575	1805	3539	1570	1805	3505	1570
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)	329	706	413	240	706	300	307	1099	191	363	1251	297
RTOR Reduction (vph)	0	0	217	0	0	202	0	0	46	0	0	68
Lane Group Flow (vph)	329	706	196	240	706	98	307	1099	145	363	1251	229
Confl. Peds. (#/hr)	2		12	12		2	3		4	4		3
Confl. Bikes (#/hr)		1			1			1				
Heavy Vehicles (%)	0%	0%	1%	1%	0%	1%	0%	2%	1%	0%	3%	0%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	21.0	34.4	34.4	14.0	27.4	27.4	19.6	40.8	40.8	22.6	43.8	43.8
Effective Green, g (s)	21.0	34.4	34.4	14.0	27.4	27.4	19.6	40.8	40.8	22.6	43.8	43.8
Actuated g/C Ratio	0.16	0.26	0.26	0.11	0.21	0.21	0.15	0.31	0.31	0.17	0.34	0.34
Clearance Time (s)	4.0	4.8	4.8	4.0	4.8	4.8	4.0	5.4	5.4	4.0	5.4	5.4
Vehicle Extension (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	4.9	4.9	2.3	4.9	4.9
Lane Grp Cap (vph)	292	955	413	192	761	332	272	1111	493	314	1181	529
v/s Ratio Prot	c0.18	0.20		0.13	c0.20		0.17	0.31		c0.20	c0.36	
v/s Ratio Perm			0.13			0.06			0.09			0.15
v/c Ratio	1.13	0.74	0.47	1.25	0.93	0.30	1.13	0.99	0.29	1.16	1.06	0.43
Uniform Delay, d1	54.5	43.7	40.2	58.0	50.3	43.2	55.2	44.4	33.7	53.7	43.1	33.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.92	0.86
Incremental Delay, d2	91.3	2.8	0.5	148.1	17.2	0.3	93.8	24.5	1.5	98.2	42.5	2.4
Delay (s)	145.8	46.5	40.7	206.1	67.5	43.5	149.0	68.9	35.2	159.1	81.9	31.1
Level of Service	F	D	D	F	E	D	F	E	D	F	F	C
Approach Delay (s)		67.4			88.4			80.3			88.7	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	81.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	225	846	918	145	212	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1881	1841		1805	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1881	1841		1805	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	242	910	987	156	228	290
RTOR Reduction (vph)	0	0	6	0	0	243
Lane Group Flow (vph)	242	910	1137	0	228	47
Confl. Peds. (#/hr)				6	3	
Confl. Bikes (#/hr)	1		2			
Heavy Vehicles (%)	2%	1%	1%	0%	0%	2%
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	14.5	66.7	48.2		14.5	14.5
Effective Green, g (s)	14.5	66.7	48.2		14.5	14.5
Actuated g/C Ratio	0.16	0.74	0.54		0.16	0.16
Clearance Time (s)	4.0	4.8	4.8		4.0	4.0
Vehicle Extension (s)	2.5	3.0	3.0		2.5	2.5
Lane Grp Cap (vph)	285	1394	986		291	255
v/s Ratio Prot	c0.14	0.48	c0.62		c0.13	
v/s Ratio Perm						0.03
v/c Ratio	0.85	0.65	1.15		0.78	0.18
Uniform Delay, d1	36.7	5.8	20.9		36.2	32.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.1	2.4	80.6		12.5	0.3
Delay (s)	56.8	8.2	101.5		48.7	32.9
Level of Service	E	A	F		D	C
Approach Delay (s)		18.4	101.5		39.8	
Approach LOS		B	F		D	

Intersection Summary			
HCM Average Control Delay	56.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	372	95	334	267	89	79	373	498	74	331	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		5.0	5.0			6.0	6.0	5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	0.88	1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			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	0.97		1.00	0.96			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1755		1770	1783			1843	2814	1752	1767	
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1755		1770	1783			1843	2814	1752	1767	
Peak-hour factor, PHF	0.88	0.88	0.88	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	92	423	108	352	281	94	83	393	524	82	368	41
RTOR Reduction (vph)	0	4	0	0	6	0	0	0	158	0	2	0
Lane Group Flow (vph)	92	527	0	352	369	0	0	476	366	82	407	0
Confl. Peds. (#/hr)	4		1	1		4	5		4	4		5
Confl. Bikes (#/hr)								3	1			
Heavy Vehicles (%)	4%	2%	14%	2%	2%	0%	3%	2%	1%	3%	6%	0%
Turn Type	Prot			Prot			Split		Prot	Split		
Protected Phases	5	2		1	6		8	8	8	4	4	
Permitted Phases												
Actuated Green, G (s)	14.7	52.0		36.0	73.8			46.0	46.0	40.0	40.0	
Effective Green, g (s)	14.7	52.0		36.0	73.8			46.0	46.0	40.0	40.0	
Actuated g/C Ratio	0.08	0.27		0.18	0.38			0.24	0.24	0.21	0.21	
Clearance Time (s)	4.5	5.0		5.0	5.0			6.0	6.0	5.0	5.0	
Vehicle Extension (s)	2.5	4.0		2.5	4.0			2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	131	468		327	675			435	664	359	362	
v/s Ratio Prot	0.05	c0.30		c0.20	0.21			c0.26	0.13	0.05	c0.23	
v/s Ratio Perm												
v/c Ratio	0.70	1.13		1.08	0.55			1.09	0.55	0.23	1.12	
Uniform Delay, d1	88.0	71.5		79.5	47.5			74.5	65.4	64.6	77.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.6	80.5		71.6	1.1			71.1	0.8	0.2	85.0	
Delay (s)	102.6	152.0		151.1	48.6			145.6	66.2	64.9	162.5	
Level of Service	F	F		F	D			F	E	E	F	
Approach Delay (s)		144.7			98.3			104.0			146.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	118.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	195.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	105.1%	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												
Volume (vph)	63	897	31	368	815	179	29	39	239	477	146	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97			0.89		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1719	1845		1656	1810			1611		1787	1746	
Flt Permitted	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1719	1845		1656	1810			1611		1787	1746	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.89	0.90	0.90	0.90
Adj. Flow (vph)	66	944	33	387	858	188	32	43	269	530	162	83
RTOR Reduction (vph)	0	1	0	0	4	0	0	82	0	0	11	0
Lane Group Flow (vph)	66	976	0	387	1042	0	0	262	0	530	234	0
Confl. Peds. (#/hr)	2		3	3		2			1	1		
Confl. Bikes (#/hr)		1								1		
Heavy Vehicles (%)	5%	2%	12%	9%	2%	0%	8%	12%	1%	1%	5%	0%
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	9.6	55.9		25.0	71.3			27.6		30.0	30.0	
Effective Green, g (s)	9.6	55.9		25.0	71.3			27.6		30.0	30.0	
Actuated g/C Ratio	0.06	0.35		0.16	0.45			0.18		0.19	0.19	
Clearance Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Vehicle Extension (s)	2.5	3.0		2.5	3.0			2.5		2.5	2.5	
Lane Grp Cap (vph)	105	655		263	819			282		340	333	
v/s Ratio Prot	0.04	c0.53		c0.23	0.58			c0.16		c0.30	0.13	
v/s Ratio Perm												
v/c Ratio	0.63	1.49		1.47	1.27			0.93		1.56	0.70	
Uniform Delay, d1	72.2	50.8		66.2	43.1			64.0		63.8	59.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	9.8	228.8		231.7	131.9			34.6		265.5	6.1	
Delay (s)	82.0	279.6		298.0	175.0			98.5		329.2	65.7	
Level of Service	F	F		F	F			F		F	E	
Approach Delay (s)		267.1			208.2			98.5			245.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	222.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	157.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	130.2%	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												
Volume (vph)	32	2270	199	121	1341	20	104	68	53	29	113	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5		5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	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		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1703	3539	1599	1805	3539	1380		1832	1495		1881	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.57	1.00		0.76	1.00
Satd. Flow (perm)	1703	3539	1599	1805	3539	1380		1080	1495		1448	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	2389	209	127	1412	21	113	74	58	32	123	53
RTOR Reduction (vph)	0	0	22	0	0	4	0	0	18	0	0	31
Lane Group Flow (vph)	34	2389	187	127	1412	17	0	187	40	0	155	22
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	6%	2%	1%	0%	2%	17%	1%	0%	8%	0%	0%	3%
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	6.6	71.7	71.7	13.3	78.4	78.4		20.5	20.5		20.5	20.5
Effective Green, g (s)	6.6	71.7	71.7	13.3	78.4	78.4		20.5	20.5		20.5	20.5
Actuated g/C Ratio	0.05	0.60	0.60	0.11	0.65	0.65		0.17	0.17		0.17	0.17
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5		5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.5	5.0	5.0	2.5	5.0	5.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	94	2115	955	200	2312	902		185	255		247	264
v/s Ratio Prot	0.02	c0.68		0.07	c0.40							
v/s Ratio Perm			0.12			0.01		c0.17	0.03		0.11	0.01
v/c Ratio	0.36	1.13	0.20	0.64	0.61	0.02		1.01	0.16		0.63	0.08
Uniform Delay, d1	54.7	24.1	11.0	51.0	12.0	7.3		49.8	42.4		46.2	41.9
Progression Factor	1.00	1.00	1.00	1.11	0.39	0.11		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.7	65.0	0.5	4.0	0.8	0.0		69.0	0.4		5.6	0.2
Delay (s)	56.4	89.1	11.5	60.6	5.6	0.8		118.8	42.8		51.8	42.0
Level of Service	E	F	B	E	A	A		F	D		D	D
Approach Delay (s)		82.5			10.0			100.8			49.3	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM Average Control Delay	57.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.5%	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												
Volume (vph)	5	1917	404	212	1285	63	174	111	176	315	329	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3505	1583	1736	3505	1464	1787	1698		1735	1762	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.35	1.00		0.43	1.00	
Satd. Flow (perm)	1805	3505	1583	1736	3505	1464	664	1698		776	1762	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	2018	425	223	1353	66	185	118	187	335	350	14
RTOR Reduction (vph)	0	0	84	0	0	19	0	47	0	0	1	0
Lane Group Flow (vph)	5	2018	341	223	1353	47	185	258	0	335	363	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)						1		1			2	
Heavy Vehicles (%)	0%	3%	2%	4%	3%	8%	1%	2%	0%	4%	7%	12%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.8	52.5	52.5	11.0	62.7	62.7	42.0	42.0		42.0	42.0	
Effective Green, g (s)	0.8	52.5	52.5	11.0	62.7	62.7	42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.01	0.44	0.44	0.09	0.52	0.52	0.35	0.35		0.35	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.3	5.0	5.0	2.3	5.0	5.0	3.0	3.0		3.5	3.5	
Lane Grp Cap (vph)	12	1533	693	159	1831	765	232	594		272	617	
v/s Ratio Prot	0.00	c0.58		c0.13	0.39			0.15			0.21	
v/s Ratio Perm			0.22			0.03	0.28			c0.43		
v/c Ratio	0.42	1.32	0.49	1.40	0.74	0.06	0.80	0.43		1.23	0.59	
Uniform Delay, d1	59.4	33.8	24.2	54.5	22.3	14.1	35.2	29.9		39.0	31.9	
Progression Factor	1.12	0.71	0.69	0.96	1.60	2.88	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	142.8	0.2	200.3	1.5	0.1	17.1	0.5		132.0	1.5	
Delay (s)	67.7	166.6	16.8	252.4	37.1	40.8	52.3	30.4		171.0	33.5	
Level of Service	E	F	B	F	D	D	D	C		F	C	
Approach Delay (s)		140.4			66.5			38.7			99.4	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM Average Control Delay	102.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		

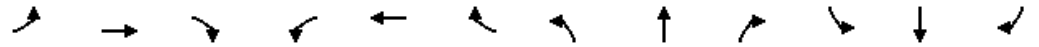
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	13	44	34	39	64	35	394	33	172	715	53
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	
Lane Util. Factor		0.95			1.00	1.00		0.95			0.95	
Frpb, ped/bikes		0.99			1.00	1.00		1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	
Frt		0.93			1.00	0.85		0.99			0.99	
Flt Protected		0.98			0.98	1.00		1.00			0.99	
Satd. Flow (prot)		3198			1233	1583		3436			3400	
Flt Permitted		0.87			0.87	1.00		0.83			0.76	
Satd. Flow (perm)		2844			1098	1583		2863			2596	
Peak-hour factor, PHF	0.89	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	15	49	38	43	71	39	438	37	191	794	59
RTOR Reduction (vph)	0	29	0	0	0	43	0	14	0	0	11	0
Lane Group Flow (vph)	0	72	0	0	81	28	0	500	0	0	1033	0
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	8%	2%	7%	89%	2%	34%	1%	0%	3%	1%	51%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		16.0			16.0	16.0		16.0			16.0	
Effective Green, g (s)		16.0			16.0	16.0		16.0			16.0	
Actuated g/C Ratio		0.40			0.40	0.40		0.40			0.40	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Grp Cap (vph)		1138			439	633		1145			1038	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.07	0.02		0.17			c0.40	
v/c Ratio		0.06			0.18	0.04		0.44			1.00	
Uniform Delay, d1		7.4			7.8	7.3		8.7			12.0	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		0.1			0.9	0.1		1.2			26.8	
Delay (s)		7.5			8.7	7.5		9.9			38.8	
Level of Service		A			A	A		A			D	
Approach Delay (s)		7.5			8.1			9.9			38.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	2822	36	454	1524	108	52	15	466	213	31	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	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	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1687	3505	1615	1626	3471	1428	1805	1696	1583	3335	1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1687	3505	1615	1626	3471	1428	1805	1696	1583	3335	1776	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	41	2971	38	478	1604	114	55	16	496	227	33	43
RTOR Reduction (vph)	0	0	4	0	0	54	0	0	274	0	0	39
Lane Group Flow (vph)	41	2971	34	478	1604	60	55	16	222	227	33	4
Confl. Peds. (#/hr)	4					4	6					6
Heavy Vehicles (%)	7%	3%	0%	11%	4%	10%	0%	12%	2%	5%	7%	2%
Turn Type	Prot		Perm	Prot		Perm	Split		Prot	Split		Prot
Protected Phases	5	2		1	6		8	8	8	4	4	4
Permitted Phases			2			6						
Actuated Green, G (s)	7.2	49.0	49.0	21.4	63.2	63.2	20.0	20.0	20.0	11.1	11.1	11.1
Effective Green, g (s)	7.2	49.0	49.0	21.4	63.2	63.2	20.0	20.0	20.0	11.1	11.1	11.1
Actuated g/C Ratio	0.06	0.41	0.41	0.18	0.53	0.53	0.17	0.17	0.17	0.09	0.09	0.09
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0	5.0	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	101	1431	659	290	1828	752	301	283	264	308	164	146
v/s Ratio Prot	0.02	c0.85		c0.29	0.46		0.03	0.01	c0.14	c0.07	0.02	0.00
v/s Ratio Perm			0.02			0.04						
v/c Ratio	0.41	2.08	0.05	1.65	0.88	0.08	0.18	0.06	0.84	0.74	0.20	0.03
Uniform Delay, d1	54.3	35.5	21.5	49.3	25.0	14.0	43.0	42.1	48.5	53.0	50.4	49.5
Progression Factor	1.00	0.66	0.55	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	484.5	0.0	306.7	6.3	0.2	0.2	0.1	20.4	8.4	0.4	0.1
Delay (s)	54.3	507.8	11.9	356.0	31.3	14.2	43.2	42.1	68.9	61.4	50.8	49.6
Level of Service	D	F	B	F	C	B	D	D	E	E	D	D
Approach Delay (s)		495.5			101.1			65.6			58.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM Average Control Delay	292.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	130.2%	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												
Volume (vph)	0	438	211	410	405	277	179	1206	334	174	1351	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8		4.0	4.0			5.4	5.4	4.0	5.4	
Lane Util. Factor		0.95		0.97	0.95			0.95	1.00	1.00	0.95	
Frt		0.95		1.00	0.94			1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		3367		3467	3354			3516	1615	1787	3505	
Flt Permitted		1.00		0.95	1.00			0.54	1.00	0.95	1.00	
Satd. Flow (perm)		3367		3467	3354			1896	1615	1787	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.95	0.95	0.95	0.95	0.92
Adj. Flow (vph)	0	476	229	432	440	292	195	1269	352	183	1422	0
RTOR Reduction (vph)	0	38	0	0	75	0	0	0	29	0	0	0
Lane Group Flow (vph)	0	667	0	432	657	0	0	1464	323	183	1422	0
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	0%	1%	3%	2%
Turn Type	Perm			Prot			Perm		Perm	Prot		
Protected Phases		4!		7!	8			6		5	2	
Permitted Phases	4						6		6			
Actuated Green, G (s)		37.2		12.0	22.0			88.6	88.6	10.0	102.6	
Effective Green, g (s)		37.2		12.0	22.0			88.6	88.6	10.0	102.6	
Actuated g/C Ratio		0.25		0.08	0.15			0.59	0.59	0.07	0.68	
Clearance Time (s)		4.8		4.0	4.0			5.4	5.4	4.0	5.4	
Vehicle Extension (s)		2.3		2.3	3.0			4.8	4.8	2.3	4.8	
Lane Grp Cap (vph)		835		277	492			1120	954	119	2397	
v/s Ratio Prot		0.20		c0.12	c0.20					c0.10	0.41	
v/s Ratio Perm								c0.77	0.20			
v/c Ratio		0.80		1.56	1.34			1.31	0.34	1.54	0.59	
Uniform Delay, d1		52.9		69.0	64.0			30.7	15.7	70.0	12.6	
Progression Factor		1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.1		268.8	164.2			144.7	1.0	279.5	1.1	
Delay (s)		58.0		337.8	228.2			175.4	16.7	349.5	13.7	
Level of Service		E		F	F			F	B	F	B	
Approach Delay (s)		58.0			268.9			144.7			52.0	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM Average Control Delay	132.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	122.8%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	711	88	99	890	99	99	11	88	88	11	99
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	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.86		1.00	0.91	1.00	1.00	1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		0.99	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.87		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)	1805	6400		1805	5136	1615	1795	1625		3476	1900	1548
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.20	1.00		0.69	1.00	1.00
Satd. Flow (perm)	1805	6400		1805	5136	1615	378	1625		2517	1900	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	93	748	93	104	937	104	106	12	95	95	12	106
RTOR Reduction (vph)	0	16	0	0	0	53	0	78	0	0	0	99
Lane Group Flow (vph)	93	825	0	104	937	51	106	29	0	95	12	7
Confl. Peds. (#/hr)			7	7			7		2	2		7
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			3			4	
Permitted Phases						6	3			4		4
Actuated Green, G (s)	9.1	53.6		9.7	54.2	54.2	20.0	20.0		7.7	7.7	7.7
Effective Green, g (s)	9.1	53.6		9.7	54.2	54.2	20.0	20.0		7.7	7.7	7.7
Actuated g/C Ratio	0.08	0.49		0.09	0.49	0.49	0.18	0.18		0.07	0.07	0.07
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0	2.0	1.0	1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	149	3119		159	2531	796	69	295		176	133	108
v/s Ratio Prot	0.05	0.13		c0.06	c0.18			0.02			0.01	
v/s Ratio Perm						0.03	c0.28			c0.04		0.00
v/c Ratio	0.62	0.26		0.65	0.37	0.06	1.54	0.10		0.54	0.09	0.07
Uniform Delay, d1	48.8	16.6		48.5	17.3	14.6	45.0	37.5		49.4	47.9	47.8
Progression Factor	1.00	1.00		1.28	0.46	0.08	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.7	0.2		7.0	0.4	0.2	301.2	0.1		1.6	0.1	0.1
Delay (s)	54.5	16.8		68.9	8.4	1.3	346.2	37.5		51.0	48.0	47.9
Level of Service	D	B		E	A	A	F	D		D	D	D
Approach Delay (s)		20.6			13.2			191.1			49.3	
Approach LOS		C			B			F			D	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	46.0%	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)	101	935	53	129	735	206	32	18	126	426	56	119
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		5.0		5.0	5.0	5.0
Lane Util. Factor	0.97	0.86		0.97	0.91	1.00		0.95		0.97	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00	0.99	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85		0.89		1.00	0.94	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	1.00	1.00
Satd. Flow (prot)	3502	6483		3502	5136	1615		3158		3502	1675	1477
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.64		0.63	1.00	1.00
Satd. Flow (perm)	3502	6483		3502	5136	1615		2051		2312	1675	1477
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	106	984	56	136	774	217	36	20	142	479	63	134
RTOR Reduction (vph)	0	6	0	0	0	119	0	132	0	0	23	71
Lane Group Flow (vph)	106	1034	0	136	774	98	0	66	0	479	80	23
Confl. Peds. (#/hr)							12					12
Confl. Bikes (#/hr)											1	1
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%	1%
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	5	2		1	6			3			4	
Permitted Phases						6	3			4		4
Actuated Green, G (s)	6.6	48.4		7.7	49.5	49.5		8.1		26.8	26.8	26.8
Effective Green, g (s)	6.6	48.4		7.7	49.5	49.5		8.1		26.8	26.8	26.8
Actuated g/C Ratio	0.06	0.44		0.07	0.45	0.45		0.07		0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5		5.0		5.0	5.0	5.0
Vehicle Extension (s)	1.0	2.0		1.0	2.0	2.0		1.0		1.0	1.0	1.0
Lane Grp Cap (vph)	210	2853		245	2311	727		151		563	408	360
v/s Ratio Prot	0.03	c0.16		c0.04	0.15						0.05	
v/s Ratio Perm						0.06		c0.03		c0.21		0.02
v/c Ratio	0.50	0.36		0.56	0.33	0.13		0.44		0.85	0.20	0.06
Uniform Delay, d1	50.1	20.5		49.5	19.6	17.7		48.8		39.7	33.0	32.0
Progression Factor	1.26	0.62		1.29	0.52	0.18		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4		1.5	0.4	0.4		0.7		11.4	0.1	0.0
Delay (s)	63.7	13.1		65.2	10.5	3.5		49.5		51.1	33.1	32.0
Level of Service	E	B		E	B	A		D		D	C	C
Approach Delay (s)		17.8			15.7			49.5			45.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
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 (vph)	1642	69	114	1026	171	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	5.0	5.0
Lane Util. Factor	0.86		0.97	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	6491		3502	5136	1787	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	6491		3502	5136	1787	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.94	0.94
Adj. Flow (vph)	1728	73	120	1080	182	211
RTOR Reduction (vph)	5	0	0	0	0	161
Lane Group Flow (vph)	1796	0	120	1080	182	50
Confl. Peds. (#/hr)		4	4		2	9
Heavy Vehicles (%)	0%	0%	0%	1%	1%	2%
Turn Type			Prot			Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	63.3		6.7	74.5	26.0	26.0
Effective Green, g (s)	63.3		6.7	74.5	26.0	26.0
Actuated g/C Ratio	0.58		0.06	0.68	0.24	0.24
Clearance Time (s)	4.5		4.5	4.5	5.0	5.0
Vehicle Extension (s)	2.0		0.5	2.0	0.5	0.5
Lane Grp Cap (vph)	3735		213	3478	422	374
v/s Ratio Prot	c0.28		c0.03	0.21	c0.10	0.03
v/s Ratio Perm						
v/c Ratio	0.48		0.56	0.31	0.43	0.13
Uniform Delay, d1	13.7		50.2	7.3	35.7	33.1
Progression Factor	0.67		1.20	0.49	1.00	1.00
Incremental Delay, d2	0.4		1.9	0.2	3.2	0.7
Delay (s)	9.5		62.1	3.8	38.9	33.9
Level of Service	A		E	A	D	C
Approach Delay (s)	9.5			9.6	36.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑					↰	↰↑↑	↱
Volume (vph)	0	1497	394	512	900	0	0	0	0	690	295	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5	5.5					5.5	5.5	5.5
Lane Util. Factor		0.91	1.00	1.00	0.95					0.91	0.91	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	0.97	1.00
Satd. Flow (prot)		5136	1554	1770	3610					1626	3349	1615
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		5136	1554	1770	3610					1626	3349	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1576	415	539	947	0	0	0	0	726	311	282
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	0	0	0	131
Lane Group Flow (vph)	0	1576	330	539	947	0	0	0	0	363	674	151
Confl. Peds. (#/hr)	7		16	16		7	12					12
Confl. Bikes (#/hr)								7			1	
Heavy Vehicles (%)	0%	1%	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%
Turn Type			Perm	Prot						Split		Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			2									
Actuated Green, G (s)		35.4	35.4	33.5	74.4					24.6	24.6	24.6
Effective Green, g (s)		35.4	35.4	33.5	74.4					24.6	24.6	24.6
Actuated g/C Ratio		0.32	0.32	0.30	0.68					0.22	0.22	0.22
Clearance Time (s)		5.5	5.5	5.5	5.5					5.5	5.5	5.5
Vehicle Extension (s)		4.8	4.8	2.3	4.0					2.3	2.3	2.3
Lane Grp Cap (vph)		1653	500	539	2442					364	749	361
v/s Ratio Prot		c0.31		c0.30	0.26					c0.22	0.20	0.09
v/s Ratio Perm			0.21									
v/c Ratio		0.95	0.66	1.00	0.39					1.00	0.96dl	0.42
Uniform Delay, d1		36.5	32.1	38.2	7.8					42.7	41.5	36.6
Progression Factor		0.71	0.65	0.59	0.15					1.00	1.00	1.00
Incremental Delay, d2		12.6	6.1	30.5	0.3					46.1	13.5	0.5
Delay (s)		38.4	27.0	53.0	1.5					88.8	55.0	37.0
Level of Service		D	C	D	A					F	E	D
Approach Delay (s)		36.1			20.2			0.0			60.5	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	518	1777	0	0	1264	598	183	5	370	0	0	0
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	4.5	4.5	4.5			
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	0.98	0.98	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)	3502	3574			3574	1555	1676	1686	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3502	3574			3574	1555	1676	1686	1568			
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)	545	1871	0	0	1331	629	193	5	389	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	307	0	0	13	0	0	0
Lane Group Flow (vph)	545	1871	0	0	1331	322	98	100	376	0	0	0
Confl. Peds. (#/hr)	3		6	6		3	11					11
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	0%	3%	0%	0%	0%
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	19.4	71.6			48.2	48.2	28.9	28.9	28.9			
Effective Green, g (s)	19.4	71.6			48.2	48.2	28.9	28.9	28.9			
Actuated g/C Ratio	0.18	0.65			0.44	0.44	0.26	0.26	0.26			
Clearance Time (s)	4.0	5.0			5.0	5.0	4.5	4.5	4.5			
Vehicle Extension (s)	2.3	4.0			4.8	4.8	2.3	2.3	2.3			
Lane Grp Cap (vph)	618	2326			1566	681	440	443	412			
v/s Ratio Prot	c0.16	0.52			c0.37							
v/s Ratio Perm						0.21	0.06	0.06	c0.24			
v/c Ratio	0.88	0.80			0.85	0.47	0.22	0.23	0.91			
Uniform Delay, d1	44.2	14.1			27.7	21.9	31.8	31.8	39.3			
Progression Factor	0.73	1.04			0.68	0.27	1.00	1.00	1.00			
Incremental Delay, d2	6.2	1.3			3.6	1.4	0.1	0.2	23.9			
Delay (s)	38.7	15.8			22.5	7.3	31.9	31.9	63.3			
Level of Service	D	B			C	A	C	C	E			
Approach Delay (s)		21.0			17.6			52.7			0.0	
Approach LOS		C			B			D			A	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	385	1278	99	29	1062	263	272	76	56	589	87	450
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	4.0	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.95	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.96	1.00
Satd. Flow (prot)	3400	3574	1569	1805	3574	1572	1715	1650		1698	1714	1540
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98		0.95	0.96	1.00
Satd. Flow (perm)	3400	3574	1569	1805	3574	1572	1715	1650		1698	1714	1540
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)	393	1304	101	30	1084	268	278	78	57	601	89	459
RTOR Reduction (vph)	0	0	28	0	0	147	0	14	0	0	0	188
Lane Group Flow (vph)	393	1304	73	30	1084	121	208	191	0	343	347	271
Confl. Peds. (#/hr)	3		3	3		3	4		1	1		4
Confl. Bikes (#/hr)					1			1				
Heavy Vehicles (%)	3%	1%	0%	0%	1%	1%	0%	7%	0%	1%	3%	3%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	17.1	51.1	51.1	3.5	37.0	37.0	16.4	16.4		21.5	21.5	21.5
Effective Green, g (s)	17.1	51.1	51.1	3.5	37.0	37.0	16.4	16.4		21.5	21.5	21.5
Actuated g/C Ratio	0.16	0.46	0.46	0.03	0.34	0.34	0.15	0.15		0.20	0.20	0.20
Clearance Time (s)	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	0.5	2.7	2.7	0.5	2.7	2.7	0.5	0.5		0.5	0.5	0.5
Lane Grp Cap (vph)	529	1660	729	57	1202	529	256	246		332	335	301
v/s Ratio Prot	c0.12	c0.36		0.02	c0.30		c0.12	0.12		0.20	c0.20	
v/s Ratio Perm			0.05			0.08						0.18
v/c Ratio	0.74	0.79	0.10	0.53	0.90	0.23	0.81	0.77		1.03	1.04	0.90
Uniform Delay, d1	44.4	24.8	16.5	52.4	34.8	26.2	45.3	45.0		44.2	44.2	43.2
Progression Factor	1.13	1.07	1.38	1.09	0.70	0.77	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	2.2	0.2	3.4	9.7	0.9	16.7	12.9		58.2	58.7	26.9
Delay (s)	53.1	28.6	22.9	60.7	34.0	21.2	62.0	58.0		102.5	103.0	70.1
Level of Service	D	C	C	E	C	C	E	E		F	F	E
Approach Delay (s)		33.7			32.1			60.0			89.7	
Approach LOS		C			C			E			F	

Intersection Summary			
HCM Average Control Delay	49.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	1752	31	23	1095	56	192	16	34	127	8	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3556		1597	3576		1773	1684		1778	1596	
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00		0.72	1.00	
Satd. Flow (perm)	1805	3556		1597	3576		1260	1684		1351	1596	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	56	1844	33	24	1153	59	206	17	37	137	9	88
RTOR Reduction (vph)	0	1	0	0	3	0	0	30	0	0	71	0
Lane Group Flow (vph)	56	1876	0	24	1209	0	206	24	0	137	26	0
Confl. Peds. (#/hr)	2		2	2		2	6		4	4		6
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	1%	13%	13%	0%	2%	1%	0%	0%	1%	0%	1%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	5.6	72.9		2.7	70.5		20.9	20.9		20.9	20.9	
Effective Green, g (s)	5.6	72.9		2.7	70.5		20.9	20.9		20.9	20.9	
Actuated g/C Ratio	0.05	0.66		0.02	0.64		0.19	0.19		0.19	0.19	
Clearance Time (s)	4.0	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	0.5	2.7		0.5	3.2		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	92	2357		39	2292		239	320		257	303	
v/s Ratio Prot	c0.03	c0.53		0.02	0.34			0.01			0.02	
v/s Ratio Perm							c0.16			0.10		
v/c Ratio	0.61	0.80		0.62	0.53		0.86	0.08		0.53	0.08	
Uniform Delay, d1	51.1	13.2		53.1	10.7		43.2	36.6		40.2	36.7	
Progression Factor	1.24	0.49		0.73	1.95		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.0	1.5		17.5	0.8		25.1	0.0		1.1	0.0	
Delay (s)	67.4	8.1		56.3	21.7		68.2	36.6		41.2	36.7	
Level of Service	E	A		E	C		E	D		D	D	
Approach Delay (s)		9.8			22.4			61.7			39.4	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2074	116	394	995	45	1026
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		4.5	5.0	4.5	4.5
Lane Util. Factor	0.91		0.97	0.95	1.00	0.88
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5092		3400	3574	1736	2842
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5092		3400	3574	1736	2842
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2183	122	415	1047	47	1080
RTOR Reduction (vph)	5	0	0	0	0	317
Lane Group Flow (vph)	2300	0	415	1047	47	763
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)	1		1			
Heavy Vehicles (%)	1%	2%	3%	1%	4%	0%
Turn Type			Prot			Prot
Protected Phases	2		1	6	8	8
Permitted Phases						
Actuated Green, G (s)	50.2		14.3	71.0	29.5	29.5
Effective Green, g (s)	50.2		14.3	71.0	29.5	29.5
Actuated g/C Ratio	0.46		0.13	0.65	0.27	0.27
Clearance Time (s)	7.0		4.5	5.0	4.5	4.5
Vehicle Extension (s)	2.9		0.5	2.9	0.5	0.5
Lane Grp Cap (vph)	2324		442	2307	466	762
v/s Ratio Prot	c0.45		c0.12	0.29	0.03	c0.27
v/s Ratio Perm						
v/c Ratio	0.99		0.94	0.45	0.10	1.00
Uniform Delay, d1	29.6		47.4	9.8	30.3	40.2
Progression Factor	0.85		0.88	1.96	1.00	1.00
Incremental Delay, d2	13.9		25.6	0.6	0.4	33.0
Delay (s)	39.2		67.6	19.8	30.7	73.2
Level of Service	D		E	B	C	E
Approach Delay (s)	39.2			33.4	71.4	
Approach LOS	D			C	E	

Intersection Summary			
HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	2951	23	34	1301	147	21	0	19	185	2	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5180		1805	5049		1801	1594		1803	1581	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00		0.74	1.00	
Satd. Flow (perm)	1805	5180		1805	5049		1186	1594		1411	1581	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	3106	24	36	1369	155	23	0	21	201	2	113
RTOR Reduction (vph)	0	1	0	0	10	0	0	17	0	0	93	0
Lane Group Flow (vph)	93	3129	0	36	1514	0	23	4	0	201	22	0
Confl. Peds. (#/hr)	2		3	3		2	2		1	1		2
Confl. Bikes (#/hr)		1			1					1		
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	7.7	72.6		3.2	68.1		19.7	19.7		19.7	19.7	
Effective Green, g (s)	7.7	72.6		3.2	68.1		19.7	19.7		19.7	19.7	
Actuated g/C Ratio	0.07	0.66		0.03	0.62		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	126	3419		53	3126		212	285		253	283	
v/s Ratio Prot	c0.05	c0.60		0.02	0.30			0.00			0.01	
v/s Ratio Perm							0.02			c0.14		
v/c Ratio	0.74	0.92		0.68	0.48		0.11	0.01		0.79	0.08	
Uniform Delay, d1	50.2	16.1		52.9	11.4		37.8	37.2		43.2	37.6	
Progression Factor	0.96	0.54		0.90	0.66		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	1.3		16.6	0.4		0.1	0.0		14.7	0.0	
Delay (s)	52.8	9.9		64.4	7.9		37.9	37.2		57.9	37.6	
Level of Service	D	A		E	A		D	D		E	D	
Approach Delay (s)		11.2			9.2			37.5			50.5	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	642	2200	252	158	926	154	196	201	91	177	254	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		5.5	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91		1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	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	1.00
Frt	1.00	0.98		1.00	0.98		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)	3502	5085		1787	3468		3467	1900	1615	1805	1881	1599
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)	3502	5085		1787	3468		3467	1900	1615	1805	1881	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	676	2316	265	166	975	162	211	216	98	190	273	182
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	83	0	0	150
Lane Group Flow (vph)	676	2569	0	166	1126	0	211	216	15	190	273	32
Confl. Peds. (#/hr)			1	1			2		1	1		2
Heavy Vehicles (%)	0%	0%	2%	1%	2%	1%	1%	0%	0%	0%	1%	1%
Turn Type	Prot			Prot			Prot		Prot	Prot		Prot
Protected Phases	5	2		1	6		3	8	8	7	4	4
Permitted Phases												
Actuated Green, G (s)	24.3	46.0		14.9	36.6		9.3	17.1	17.1	12.0	19.3	19.3
Effective Green, g (s)	24.3	46.0		14.9	36.6		9.3	17.1	17.1	12.0	19.3	19.3
Actuated g/C Ratio	0.22	0.42		0.14	0.33		0.08	0.16	0.16	0.11	0.18	0.18
Clearance Time (s)	4.5	5.5		4.5	5.5		5.5	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.5	2.9		0.5	2.9		0.5	0.5	0.5	0.5	0.5	0.5
Lane Grp Cap (vph)	774	2126		242	1154		293	295	251	197	330	281
v/s Ratio Prot	c0.19	c0.51		0.09	0.32		0.06	0.11	0.01	c0.11	c0.15	0.02
v/s Ratio Perm												
v/c Ratio	0.87	1.21		0.69	0.98		0.72	0.73	0.06	0.96	0.83	0.11
Uniform Delay, d1	41.4	32.0		45.3	36.3		49.1	44.3	39.6	48.8	43.7	38.2
Progression Factor	1.28	1.07		1.17	0.73		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	96.0		5.6	19.7		7.2	7.8	0.0	53.2	14.8	0.1
Delay (s)	58.0	130.2		58.8	46.1		56.3	52.1	39.6	102.0	58.6	38.2
Level of Service	E	F		E	D		E	D	D	F	E	D
Approach Delay (s)		115.2			47.7			51.4			65.6	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM Average Control Delay	88.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	94.4%	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)	65	2169	145	166	1202	25	93	37	247	42	12	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.0	4.8		4.2	4.2	4.2	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	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	0.99	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3574		1787	3561		1785	1900	1583	1796	1674	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00	1.00	0.73	1.00	
Satd. Flow (perm)	1805	3574		1787	3561		1363	1900	1583	1383	1674	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	68	2283	153	175	1265	26	99	39	263	45	13	36
RTOR Reduction (vph)	0	4	0	0	1	0	0	0	133	0	31	0
Lane Group Flow (vph)	68	2432	0	175	1290	0	99	39	130	45	18	0
Confl. Peds. (#/hr)	10					10	1		5	5		1
Confl. Bikes (#/hr)		2										
Heavy Vehicles (%)	0%	0%	1%	1%	1%	0%	1%	0%	2%	0%	0%	0%
Turn Type	Prot			Prot			Perm		Prot	Perm		
Protected Phases	5	2		1	6			8	8		4	
Permitted Phases							8			4		
Actuated Green, G (s)	6.4	64.7		18.4	76.7		13.9	13.9	13.9	14.1	14.1	
Effective Green, g (s)	6.4	64.7		18.4	76.7		13.9	13.9	13.9	14.1	14.1	
Actuated g/C Ratio	0.06	0.59		0.17	0.70		0.13	0.13	0.13	0.13	0.13	
Clearance Time (s)	4.0	4.8		4.0	4.8		4.2	4.2	4.2	4.0	4.0	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	105	2102		299	2483		172	240	200	177	215	
v/s Ratio Prot	0.04	c0.68		c0.10	0.36			0.02	c0.08		0.01	
v/s Ratio Perm							0.07			0.03		
v/c Ratio	0.65	1.16		0.59	0.52		0.58	0.16	0.65	0.25	0.08	
Uniform Delay, d1	50.7	22.6		42.3	7.9		45.3	42.9	45.7	43.2	42.2	
Progression Factor	1.44	0.56		1.32	0.43		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	71.3		1.7	0.7		2.9	0.1	5.7	0.3	0.1	
Delay (s)	73.8	83.9		57.5	4.1		48.2	43.0	51.4	43.5	42.3	
Level of Service	E	F		E	A		D	D	D	D	D	
Approach Delay (s)		83.6			10.5			49.8			42.9	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	55.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1984	173	265	1163	20	149	2	195	13	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.8	5.1		4.8	4.8		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.85		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3525		1805	3564		1780	1528		1537	1728	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.36	1.00	
Satd. Flow (perm)	1770	3525		1805	3564		1395	1528		582	1728	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	27	2088	182	279	1224	21	160	2	210	14	9	11
RTOR Reduction (vph)	0	6	0	0	1	0	0	126	0	0	9	0
Lane Group Flow (vph)	27	2264	0	279	1244	0	160	86	0	14	11	0
Confl. Peds. (#/hr)	3		4	4		3	4		5	5		4
Confl. Bikes (#/hr)		2										
Heavy Vehicles (%)	2%	1%	0%	0%	1%	0%	1%	0%	4%	17%	0%	0%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	3.4	53.2		25.3	75.6		17.1	17.1		17.9	17.9	
Effective Green, g (s)	3.4	53.2		25.3	75.6		17.1	17.1		17.9	17.9	
Actuated g/C Ratio	0.03	0.48		0.23	0.69		0.16	0.16		0.16	0.16	
Clearance Time (s)	4.0	4.8		4.8	5.1		4.8	4.8		4.0	4.0	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	55	1705		415	2449		217	238		95	281	
v/s Ratio Prot	0.02	c0.64		c0.15	0.35			0.06			0.01	
v/s Ratio Perm							c0.11			0.02		
v/c Ratio	0.49	1.33		0.67	0.51		0.74	0.36		0.15	0.04	
Uniform Delay, d1	52.4	28.4		38.6	8.3		44.3	41.6		39.5	38.8	
Progression Factor	0.87	0.67		1.28	0.29		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	148.0		3.0	0.7		10.7	0.3		0.3	0.0	
Delay (s)	46.1	167.0		52.2	3.0		55.0	41.9		39.8	38.8	
Level of Service	D	F		D	A		D	D		D	D	
Approach Delay (s)		165.6			12.1			47.5			39.2	
Approach LOS		F			B			D			D	

Intersection Summary			
HCM Average Control Delay	98.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	103.2%	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												
Volume (vph)	160	1268	191	77	914	43	134	153	165	58	67	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.5		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	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	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.92		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3610	1599	1805	3548		1787	1752		1805	1719	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3610	1599	1805	3548		1787	1752		1805	1719	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	168	1335	201	81	962	45	143	163	176	62	71	95
RTOR Reduction (vph)	0	0	47	0	2	0	0	40	0	0	53	0
Lane Group Flow (vph)	168	1335	154	81	1005	0	143	299	0	62	113	0
Confl. Peds. (#/hr)	1		5	5		1	6					6
Confl. Bikes (#/hr)		1			2							
Heavy Vehicles (%)	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Prot		Prot	Prot			Prot			Prot		
Protected Phases	5	2	2	1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	16.0	55.9	55.9	7.5	47.4		11.2	22.8		6.5	18.6	
Effective Green, g (s)	16.0	55.9	55.9	7.5	47.4		11.2	22.8		6.5	18.6	
Actuated g/C Ratio	0.15	0.51	0.51	0.07	0.43		0.10	0.21		0.06	0.17	
Clearance Time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.5		4.0	4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	263	1835	813	123	1529		182	363		107	291	
v/s Ratio Prot	c0.09	c0.37	0.10	0.04	0.28		c0.08	c0.17		0.03	0.07	
v/s Ratio Perm												
v/c Ratio	0.64	0.73	0.19	0.66	0.66		0.79	0.82		0.58	0.39	
Uniform Delay, d1	44.3	21.1	14.7	50.0	24.8		48.2	41.7		50.4	40.6	
Progression Factor	0.99	1.34	1.81	1.44	0.38		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.2	0.0	6.4	1.5		18.3	13.3		4.7	0.3	
Delay (s)	44.0	28.6	26.7	78.3	11.1		66.5	55.0		55.1	40.9	
Level of Service	D	C	C	E	B		E	D		E	D	
Approach Delay (s)		29.9			16.1			58.4			44.8	
Approach LOS		C			B			E			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	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)	273	1279	38	14	865	139	24	13	12	398	13	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9		4.0	4.8		4.5	4.5		4.8	4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	3594		1805	3491		1802	1610		1750	1579	
Flt Permitted	0.95	1.00		0.95	1.00		0.63	1.00		0.74	1.00	
Satd. Flow (perm)	1752	3594		1805	3491		1186	1610		1362	1579	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	287	1346	40	15	911	146	27	15	13	447	15	138
RTOR Reduction (vph)	0	2	0	0	11	0	0	9	0	0	91	0
Lane Group Flow (vph)	287	1384	0	15	1046	0	27	19	0	447	62	0
Confl. Peds. (#/hr)	3					3	2		1	1		2
Heavy Vehicles (%)	3%	0%	0%	0%	1%	0%	0%	17%	0%	3%	0%	3%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	19.1	57.4		1.6	40.0		37.6	37.6		37.3	37.3	
Effective Green, g (s)	19.1	57.4		1.6	40.0		37.6	37.6		37.3	37.3	
Actuated g/C Ratio	0.17	0.52		0.01	0.36		0.34	0.34		0.34	0.34	
Clearance Time (s)	4.0	4.9		4.0	4.8		4.5	4.5		4.8	4.8	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	304	1875		26	1269		405	550		462	535	
v/s Ratio Prot	c0.16	0.39		0.01	c0.30			0.01			0.04	
v/s Ratio Perm							0.02			c0.33		
v/c Ratio	0.94	0.74		0.58	0.82		0.07	0.04		0.97	0.12	
Uniform Delay, d1	44.9	20.5		53.9	31.8		24.4	24.1		35.8	25.0	
Progression Factor	1.07	1.30		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	30.8	2.0		17.8	6.2		0.0	0.0		33.0	0.0	
Delay (s)	78.9	28.6		71.6	38.0		24.4	24.1		68.8	25.0	
Level of Service	E	C		E	D		C	C		E	C	
Approach Delay (s)		37.2			38.4			24.3			57.6	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	83.6%	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)	842	359	412	7	220	13	293	395	10	15	357	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.0	5.0		4.0	5.4	5.4	4.0	5.4	5.4
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	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	1.00
Frt	1.00	0.92		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)	3467	3288		3502	3576		1787	3610	1615	1805	3610	1615
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)	3467	3288		3502	3576		1787	3610	1615	1805	3610	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	886	378	434	7	232	14	326	439	11	17	397	619
RTOR Reduction (vph)	0	201	0	0	5	0	0	0	6	0	0	343
Lane Group Flow (vph)	886	611	0	7	241	0	326	439	5	17	397	276
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Turn Type	Prot			Prot			Prot		Prot	Prot		Prot
Protected Phases	5	2		1	6		3	8	8	7	4	4
Permitted Phases												
Actuated Green, G (s)	15.0	42.6		0.8	28.2		15.5	46.8	46.8	2.1	33.4	33.4
Effective Green, g (s)	15.0	42.6		0.8	28.2		15.5	46.8	46.8	2.1	33.4	33.4
Actuated g/C Ratio	0.14	0.39		0.01	0.26		0.14	0.42	0.42	0.02	0.30	0.30
Clearance Time (s)	4.0	4.8		4.0	5.0		4.0	5.4	5.4	4.0	5.4	5.4
Vehicle Extension (s)	0.5	2.9		0.5	2.9		0.5	0.5	0.5	0.5	0.5	0.5
Lane Grp Cap (vph)	471	1268		25	913		251	1529	684	34	1091	488
v/s Ratio Prot	c0.26	c0.19		0.00	0.07		c0.18	0.12	0.00	0.01	0.11	c0.17
v/s Ratio Perm												
v/c Ratio	1.88	0.48		0.28	0.26		1.30	0.29	0.01	0.50	0.36	0.57
Uniform Delay, d1	47.8	25.6		54.6	32.9		47.5	20.9	18.4	53.7	30.2	32.5
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	404.5	1.3		2.2	0.7		160.6	0.0	0.0	4.2	0.9	4.7
Delay (s)	452.2	26.9		56.8	33.6		208.1	20.9	18.4	57.8	31.2	37.2
Level of Service	F	C		E	C		F	C	B	E	C	D
Approach Delay (s)		248.9			34.2			99.5			35.2	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	144.9	HCM Level of Service	F
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	13.4
Intersection Capacity Utilization	86.3%	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 (veh/h)	21	16	47	29	15	15	28	412	45	39	503	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	23	18	52	32	17	17	31	458	50	43	559	26
Pedestrians		5						11			4	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1237	1233	588	1275	1221	487	589			508		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1237	1233	588	1275	1221	487	589			508		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	82	89	90	71	90	97	97			96		
cM capacity (veh/h)	129	165	499	111	168	583	992			1032		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	66	539	628
Volume Left	23	32	31	43
Volume Right	52	17	50	26
cSH	238	157	992	1032
Volume to Capacity	0.39	0.42	0.03	0.04
Queue Length 95th (ft)	44	46	2	3
Control Delay (s)	29.6	43.4	0.9	1.1
Lane LOS	D	E	A	A
Approach Delay (s)	29.6	43.4	0.9	1.1
Approach LOS	D	E		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	55.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	412	251	50	340	162	99	81	46	120	146	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
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	0.94		1.00	0.95		1.00	0.95		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)	1805	3384		1805	3391		1805	1796		1703	1645	
Flt Permitted	0.95	1.00		0.95	1.00		0.64	1.00		0.67	1.00	
Satd. Flow (perm)	1805	3384		1805	3391		1223	1796		1197	1645	
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)	29	453	276	55	374	178	109	89	51	132	160	20
RTOR Reduction (vph)	0	98	0	0	52	0	0	22	0	0	5	0
Lane Group Flow (vph)	29	631	0	55	500	0	109	118	0	132	175	0
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	0%	0%	6%	14%	10%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	2.1	16.2		3.7	17.8		11.1	11.1		11.1	11.1	
Effective Green, g (s)	2.1	16.2		3.7	17.8		11.1	11.1		11.1	11.1	
Actuated g/C Ratio	0.05	0.37		0.08	0.40		0.25	0.25		0.25	0.25	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	86	1246		152	1372		309	453		302	415	
v/s Ratio Prot	0.02	c0.19		c0.03	0.15			0.07			0.11	
v/s Ratio Perm							0.09			c0.11		
v/c Ratio	0.34	0.51		0.36	0.36		0.35	0.26		0.44	0.42	
Uniform Delay, d1	20.3	10.8		19.0	9.1		13.5	13.2		13.8	13.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.3		1.1	0.2		0.5	0.2		0.7	0.5	
Delay (s)	22.0	11.1		20.1	9.3		14.0	13.4		14.6	14.3	
Level of Service	C	B		C	A		B	B		B	B	
Approach Delay (s)		11.5			10.3			13.7			14.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	44.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.6%	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)	483	7	395	1	4	2	166	284	0	1	291	329
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	4.5		4.0	4.8	
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		0.99	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.92	
Flt Protected		0.95	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791	1615		1881	1615	1770	3574		1794	3269	
Flt Permitted		0.73	1.00		0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1365	1615		1824	1615	1770	3574		1794	3269	
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)	525	8	429	1	4	2	180	309	0	1	316	358
RTOR Reduction (vph)	0	0	239	0	0	1	0	0	0	0	187	0
Lane Group Flow (vph)	0	533	190	0	5	1	180	309	0	1	487	0
Confl. Peds. (#/hr)	1		5	5		1	1		4	4		1
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	2%	1%	0%	0%	1%	0%
Turn Type	Perm		Prot	Perm		Prot	Prot			Prot		
Protected Phases		8	8		4	4	1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		38.0	38.0		38.0	38.0	13.1	34.5		0.6	21.7	
Effective Green, g (s)		38.0	38.0		38.0	38.0	13.1	34.5		0.6	21.7	
Actuated g/C Ratio		0.44	0.44		0.44	0.44	0.15	0.40		0.01	0.25	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.5		4.0	4.8	
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.5	3.0		2.5	3.0	
Lane Grp Cap (vph)		606	717		810	717	271	1440		13	829	
v/s Ratio Prot			0.12			0.00	c0.10	0.09		0.00	c0.15	
v/s Ratio Perm		c0.39			0.00							
v/c Ratio		0.88	0.27		0.01	0.00	0.66	0.21		0.08	0.59	
Uniform Delay, d1		21.7	15.0		13.3	13.2	34.2	16.7		42.2	28.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		13.6	0.1		0.0	0.0	5.4	0.1		1.8	1.1	
Delay (s)		35.3	15.1		13.3	13.2	39.6	16.8		44.1	29.1	
Level of Service		D	B		B	B	D	B		D	C	
Approach Delay (s)		26.3			13.3			25.2			29.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	72.4%	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	939	242	479	736	0	0	0	0	163	6	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.0	4.5					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frpb, ped/bikes		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
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)		5187	1599	3367	3574					1698	1696	1615
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		5187	1599	3367	3574					1698	1696	1615
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	1032	266	526	809	0	0	0	0	179	7	167
RTOR Reduction (vph)	0	0	132	0	0	0	0	0	0	0	0	134
Lane Group Flow (vph)	0	1032	134	526	809	0	0	0	0	93	93	33
Confl. Peds. (#/hr)	2		4	4		2	12					12
Confl. Bikes (#/hr)				1	1							
Heavy Vehicles (%)	0%	0%	1%	4%	1%	0%	0%	0%	0%	1%	11%	0%
Turn Type			Prot	Prot						Perm		Prot
Protected Phases		2	2	1	6						4	4
Permitted Phases										4		
Actuated Green, G (s)		40.3	40.3	16.9	61.2					9.3	9.3	9.3
Effective Green, g (s)		40.3	40.3	16.9	61.2					9.3	9.3	9.3
Actuated g/C Ratio		0.50	0.50	0.21	0.77					0.12	0.12	0.12
Clearance Time (s)		4.5	4.5	4.0	4.5					5.0	5.0	5.0
Vehicle Extension (s)		4.2	4.2	2.3	4.2					2.3	2.3	2.3
Lane Grp Cap (vph)		2613	805	711	2734					197	197	188
v/s Ratio Prot		c0.20	0.08	c0.16	0.23							0.02
v/s Ratio Perm										0.05	0.05	
v/c Ratio		0.39	0.17	0.74	0.30					0.47	0.47	0.17
Uniform Delay, d1		12.3	10.8	29.5	2.9					33.1	33.1	31.9
Progression Factor		1.00	1.00	0.99	0.11					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.4	2.8	0.2					1.0	1.0	0.3
Delay (s)		12.7	11.2	32.1	0.5					34.1	34.1	32.1
Level of Service		B	B	C	A					C	C	C
Approach Delay (s)		12.4			13.0			0.0			33.2	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	815	0	0	1004	298	208	412	684	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5			4.5	4.5	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.91	0.91	1.00			
Frpb, ped/bikes	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			
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	1.00	1.00			
Satd. Flow (prot)	3467	3610			5036	1599	1609	3382	1583			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3467	3610			5036	1599	1609	3382	1583			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	290	876	0	0	1080	320	224	443	735	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	192	0	0	35	0	0	0
Lane Group Flow (vph)	290	876	0	0	1080	128	202	465	700	0	0	0
Confl. Peds. (#/hr)			6	6			1					1
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	1%	0%	0%	0%	3%	1%	2%	2%	2%	0%	0%	0%
Turn Type	Prot					Prot	Perm		Prot			
Protected Phases	5	2			6	6		8	8			
Permitted Phases							8					
Actuated Green, G (s)	7.6	34.1			22.5	22.5	36.4	36.4	36.4			
Effective Green, g (s)	7.6	34.1			22.5	22.5	36.4	36.4	36.4			
Actuated g/C Ratio	0.09	0.43			0.28	0.28	0.45	0.45	0.45			
Clearance Time (s)	4.0	4.5			4.5	4.5	5.0	5.0	5.0			
Vehicle Extension (s)	2.3	4.2			4.2	4.2	2.3	2.3	2.3			
Lane Grp Cap (vph)	329	1539			1416	450	732	1539	720			
v/s Ratio Prot	c0.08	0.24			c0.21	0.08			c0.44			
v/s Ratio Perm							0.13	0.14				
v/c Ratio	0.88	0.57			0.76	0.28	0.28	0.30	0.97			
Uniform Delay, d1	35.8	17.4			26.3	22.5	13.6	13.8	21.3			
Progression Factor	0.90	1.63			1.22	2.10	1.00	1.00	1.00			
Incremental Delay, d2	21.8	1.5			3.2	1.3	0.1	0.1	26.6			
Delay (s)	54.0	29.8			35.2	48.4	13.7	13.8	47.9			
Level of Service	D	C			D	D	B	B	D			
Approach Delay (s)		35.8			38.2			31.7			0.0	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	543	52	524	0	415	0	120	37	133	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.0	4.8		4.0		4.0	4.1	4.1	4.1
Lane Util. Factor		0.91		1.00	0.91		0.97		1.00	1.00	1.00	1.00
Frpb, ped/bikes		0.99		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		0.95		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		4819		1752	5036		3433		1599	1736	1845	1599
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		4819		1752	5036		3433		1599	1736	1845	1599
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	1062	603	58	582	0	461	0	133	41	148	410
RTOR Reduction (vph)	0	110	0	0	0	0	0	0	108	0	0	145
Lane Group Flow (vph)	0	1555	0	58	582	0	461	0	25	41	148	265
Confl. Peds. (#/hr)	3		1	1		3			11	11		
Confl. Bikes (#/hr)					1							1
Heavy Vehicles (%)	0%	1%	1%	3%	3%	0%	2%	0%	1%	4%	3%	1%
Turn Type				Prot			Prot		custom	Split		Prot
Protected Phases		2		1	6		8		8	4	4	4
Permitted Phases												
Actuated Green, G (s)		32.2		5.2	41.1		15.1		15.1	10.9	10.9	10.9
Effective Green, g (s)		32.2		5.2	41.1		15.1		15.1	10.9	10.9	10.9
Actuated g/C Ratio		0.40		0.07	0.51		0.19		0.19	0.14	0.14	0.14
Clearance Time (s)		4.5		4.0	4.8		4.0		4.0	4.1	4.1	4.1
Vehicle Extension (s)		4.0		2.5	4.0		2.5		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		1940		114	2587		648		302	237	251	218
v/s Ratio Prot		c0.32		c0.03	0.12		c0.13		0.02	0.02	0.08	c0.17
v/s Ratio Perm												
v/c Ratio		0.80		0.51	0.22		0.71		0.08	0.17	0.59	1.22
Uniform Delay, d1		21.1		36.2	10.7		30.4		26.7	30.6	32.4	34.5
Progression Factor		0.74		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.5		2.6	0.2		3.4		0.1	0.3	2.9	131.2
Delay (s)		18.1		38.8	10.9		33.9		26.8	30.8	35.4	165.8
Level of Service		B		D	B		C		C	C	D	F
Approach Delay (s)		18.1			13.4			32.3			124.3	
Approach LOS		B			B			C			F	

Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	1123	985	152	149	17
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)	16	1221	1071	165	162	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)			752			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	1236				2407	618
vC1, stage 1 conf vol					1153	
vC2, stage 2 conf vol					1253	
vCu, unblocked vol	836				2272	77
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				14	98
cM capacity (veh/h)	658				188	794

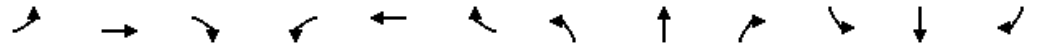
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	16	1221	714	522	180
Volume Left	16	0	0	0	162
Volume Right	0	0	0	165	18
cSH	658	1700	1700	1700	204
Volume to Capacity	0.02	0.72	0.42	0.31	0.89
Queue Length 95th (ft)	2	0	0	0	173
Control Delay (s)	10.6	0.0	0.0	0.0	84.9
Lane LOS	B				F
Approach Delay (s)	0.1		0.0		84.9
Approach LOS					F

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	57	24	203	68	33	485
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	63	26	223	75	36	533
Pedestrians	12					5
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	1					0
Right turn flare (veh)		1				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	878	277			310	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878	277			310	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	80	96			97	
cM capacity (veh/h)	306	730			1211	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	298	569
Volume Left	63	0	36
Volume Right	26	75	0
cSH	435	1700	1211
Volume to Capacity	0.20	0.18	0.03
Queue Length 95th (ft)	19	0	2
Control Delay (s)	16.9	0.0	0.8
Lane LOS	C		A
Approach Delay (s)	16.9	0.0	0.8
Approach LOS	C		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	60	67	88	67	92	46	909	137	75	1859	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.93	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1666	1759	1554	1795	1705		1752	3505	1496	1805	3574	1615
Flt Permitted	0.34	1.00	1.00	0.72	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	590	1759	1554	1352	1705		1752	3505	1496	1805	3574	1615
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)	11	63	71	93	71	97	48	957	144	79	1957	8
RTOR Reduction (vph)	0	0	63	0	52	0	0	0	31	0	0	2
Lane Group Flow (vph)	11	63	8	93	116	0	48	957	113	79	1957	6
Confl. Peds. (#/hr)	3		5	5		3			17			
Confl. Bikes (#/hr)	1							4			1	
Heavy Vehicles (%)	8%	8%	2%	0%	2%	0%	3%	3%	0%	0%	1%	0%
Turn Type	Perm		Perm	Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Actuated Green, G (s)	12.5	12.5	12.5	12.5	12.5		7.0	76.3	76.3	8.4	77.7	77.7
Effective Green, g (s)	12.5	12.5	12.5	12.5	12.5		7.0	76.3	76.3	8.4	77.7	77.7
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11		0.06	0.69	0.69	0.08	0.71	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.3	4.8	4.8	2.3	4.8	4.8
Lane Grp Cap (vph)	67	200	177	154	194		111	2431	1038	138	2525	1141
v/s Ratio Prot		0.04			0.07		0.03	0.27		c0.04	c0.55	
v/s Ratio Perm	0.02		0.01	c0.07					0.08			0.00
v/c Ratio	0.16	0.32	0.05	0.60	0.60		0.43	0.39	0.11	0.57	0.78	0.01
Uniform Delay, d1	44.0	44.8	43.4	46.4	46.4		49.6	7.1	5.6	49.1	10.5	4.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.41	0.13	0.03	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	0.1	5.5	4.1		1.4	0.4	0.2	4.2	2.4	0.0
Delay (s)	44.9	45.5	43.5	51.9	50.4		71.3	1.4	0.4	53.3	12.9	4.8
Level of Service	D	D	D	D	D		E	A	A	D	B	A
Approach Delay (s)		44.5			51.0			4.2			14.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.7%	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)	45	127	105	69	96	21	101	314	46	41	407	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		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		0.98		1.00	0.98		1.00	0.98	
Flt Protected		0.99	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1851	1535		1836		1769	1843		1804	1846	
Flt Permitted		0.87	1.00		0.82		0.38	1.00		0.49	1.00	
Satd. Flow (perm)		1637	1535		1531		703	1843		922	1846	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	144	119	78	109	24	112	349	51	46	452	63
RTOR Reduction (vph)	0	0	84	0	6	0	0	8	0	0	8	0
Lane Group Flow (vph)	0	195	35	0	205	0	112	392	0	46	507	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	5%	0%	3%	0%	0%	0%	2%	1%	0%	0%	1%	0%
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		10.7	10.7		10.7		17.2	17.2		17.2	17.2	
Effective Green, g (s)		10.7	10.7		10.7		17.2	17.2		17.2	17.2	
Actuated g/C Ratio		0.30	0.30		0.30		0.48	0.48		0.48	0.48	
Clearance Time (s)		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	
Lane Grp Cap (vph)		488	458		456		337	883		442	884	
v/s Ratio Prot								0.21			c0.27	
v/s Ratio Perm		0.12	0.02		c0.13		0.16			0.05		
v/c Ratio		0.40	0.08		0.45		0.33	0.44		0.10	0.57	
Uniform Delay, d1		10.0	9.1		10.2		5.8	6.2		5.1	6.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.1		0.7		0.6	0.4		0.1	0.9	
Delay (s)		10.6	9.1		10.9		6.4	6.5		5.2	7.6	
Level of Service		B	A		B		A	A		A	A	
Approach Delay (s)		10.0			10.9			6.5			7.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	35.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	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)	18	20	11	27	21	46	9	194	28	65	482	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	19	22	12	29	23	49	10	209	30	70	518	39
Pedestrians		2			2			7			2	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	985	939	547	952	944	228	559			241		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	985	939	547	952	944	228	559			241		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	90	91	98	86	91	94	99			95		
cM capacity (veh/h)	185	244	516	207	247	802	953			1324		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	101	248	627
Volume Left	19	29	10	70
Volume Right	12	49	30	39
cSH	244	345	953	1324
Volume to Capacity	0.22	0.29	0.01	0.05
Queue Length 95th (ft)	20	30	1	4
Control Delay (s)	23.7	19.7	0.4	1.4
Lane LOS	C	C	A	A
Approach Delay (s)	23.7	19.7	0.4	1.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	60.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	76	43	21	80	26	47	1052	46	29	1915	107
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.94
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	0.96		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)	1736	1727		1805	1706		1805	3539	1572	1671	3539	1517
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)	1736	1727		1805	1706		1805	3539	1572	1671	3539	1517
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)	33	79	45	22	83	27	49	1096	48	30	1995	111
RTOR Reduction (vph)	0	21	0	0	12	0	0	0	9	0	0	13
Lane Group Flow (vph)	33	103	0	22	98	0	49	1096	39	30	1995	98
Confl. Peds. (#/hr)			7			8			2			12
Confl. Bikes (#/hr)								4			1	
Heavy Vehicles (%)	4%	4%	2%	0%	5%	12%	0%	2%	0%	8%	2%	0%
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)	2.4	12.7		1.6	11.9		7.1	75.3	75.3	3.6	71.8	71.8
Effective Green, g (s)	2.4	12.7		1.6	11.9		7.1	75.3	75.3	3.6	71.8	71.8
Actuated g/C Ratio	0.02	0.12		0.01	0.11		0.06	0.68	0.68	0.03	0.65	0.65
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	38	199		26	185		117	2423	1076	55	2310	990
v/s Ratio Prot	c0.02	c0.06		0.01	0.06		0.03	c0.31		0.02	c0.56	
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.87	0.52		0.85	0.53		0.42	0.45	0.04	0.55	0.86	0.10
Uniform Delay, d1	53.6	45.8		54.1	46.4		49.5	7.9	5.6	52.4	15.2	7.1
Progression Factor	1.00	1.00		1.00	1.00		1.58	0.15	0.01	0.73	0.40	0.53
Incremental Delay, d2	92.6	1.4		107.8	1.7		1.1	0.5	0.0	4.0	2.5	0.1
Delay (s)	146.3	47.2		161.9	48.1		79.1	1.7	0.1	42.3	8.6	3.9
Level of Service	F	D		F	D		E	A	A	D	A	A
Approach Delay (s)		68.0			67.1			4.8			8.9	
Approach LOS		E			E			A			A	

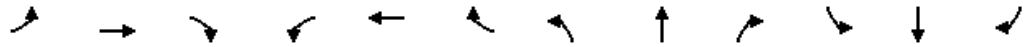
Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.6
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	57	106	73	331	615	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	61	114	78	356	661	40
Pedestrians				2	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1195	683	701			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1195	683	701			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	74	91			
cM capacity (veh/h)	190	445	905			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	61	114	434	701
Volume Left	61	0	78	0
Volume Right	0	114	0	40
cSH	190	445	905	1700
Volume to Capacity	0.32	0.26	0.09	0.41
Queue Length 95th (ft)	33	25	7	0
Control Delay (s)	32.8	15.9	2.5	0.0
Lane LOS	D	C	A	
Approach Delay (s)	21.8		2.5	0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	27	27	17	54	56	65	14	174	28	108	412	36
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	29	29	18	58	60	70	15	187	30	116	443	39

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	76	188	232	598
Volume Left (vph)	29	58	15	116
Volume Right (vph)	18	70	30	39
Hadj (s)	-0.04	-0.13	-0.02	0.03
Departure Headway (s)	6.5	6.1	5.6	5.2
Degree Utilization, x	0.14	0.32	0.36	0.86
Capacity (veh/h)	497	542	600	598
Control Delay (s)	10.6	12.0	11.8	31.1
Approach Delay (s)	10.6	12.0	11.8	31.1
Approach LOS	B	B	B	D

Intersection Summary				
Delay	22.3			
HCM Level of Service	C			
Intersection Capacity Utilization	64.1%	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)	84	196	97	190	167	69	79	958	176	97	1600	79
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.91
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	0.96		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)	1805	1767		1787	1796		1787	3505	1538	1752	3539	1467
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)	1805	1767		1787	1796		1787	3505	1538	1752	3539	1467
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)	88	206	102	200	176	73	83	1008	185	102	1684	83
RTOR Reduction (vph)	0	17	0	0	13	0	0	0	76	0	0	13
Lane Group Flow (vph)	88	291	0	200	236	0	83	1008	109	102	1684	70
Confl. Peds. (#/hr)			12			23			6			24
Confl. Bikes (#/hr)	1											
Heavy Vehicles (%)	0%	2%	0%	1%	0%	0%	1%	3%	1%	3%	2%	0%
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)	8.8	22.4		16.7	30.3		7.7	44.3	44.3	9.8	46.4	46.4
Effective Green, g (s)	8.8	22.4		16.7	30.3		7.7	44.3	44.3	9.8	46.4	46.4
Actuated g/C Ratio	0.08	0.20		0.15	0.28		0.07	0.40	0.40	0.09	0.42	0.42
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	144	360		271	495		125	1412	619	156	1493	619
v/s Ratio Prot	0.05	c0.16		c0.11	0.13		0.05	0.29		c0.06	c0.48	
v/s Ratio Perm									0.07			0.05
v/c Ratio	0.61	0.81		0.74	0.48		0.66	0.71	0.18	0.65	1.13	0.11
Uniform Delay, d1	48.9	41.8		44.6	33.2		49.9	27.5	21.1	48.5	31.8	19.3
Progression Factor	1.00	1.00		1.00	1.00		1.37	0.60	0.58	1.16	1.02	1.27
Incremental Delay, d2	6.0	12.1		9.2	0.4		8.7	2.5	0.5	4.6	63.0	0.2
Delay (s)	54.9	53.9		53.7	33.7		77.1	19.2	12.8	60.9	95.5	24.8
Level of Service	D	D		D	C		E	B	B	E	F	C
Approach Delay (s)		54.1			42.6			22.0			90.5	
Approach LOS		D			D			C			F	

Intersection Summary			
HCM Average Control Delay	59.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	82	74	407	144	146	635
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	87	79	433	153	155	676
Pedestrians			1			
Lane Width (ft)			12.0			
Walking Speed (ft/s)			4.0			
Percent Blockage			0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1497	510			586	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1497	510			586	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	22	86			84	
cM capacity (veh/h)	112	568			979	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	166	586	831
Volume Left	87	0	155
Volume Right	79	153	0
cSH	180	1700	979
Volume to Capacity	0.92	0.34	0.16
Queue Length 95th (ft)	176	0	14
Control Delay (s)	99.5	0.0	3.8
Lane LOS	F		A
Approach Delay (s)	99.5	0.0	3.8
Approach LOS	F		

Intersection Summary			
Average Delay	12.4		
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	47	2	38	0	207	75	58	379	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	55	2	45	0	230	83	64	421	0
Pedestrians								1				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	868	863	422	823	822	272	421			313		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	868	863	422	823	822	272	421			313		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	80	99	94	100			95		
cM capacity (veh/h)	247	279	635	277	295	767	1149			1258		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	102	313	486
Volume Left	55	0	64
Volume Right	45	83	0
cSH	385	1700	1258
Volume to Capacity	0.27	0.18	0.05
Queue Length 95th (ft)	26	0	4
Control Delay (s)	17.7	0.0	1.5
Lane LOS	C		A
Approach Delay (s)	17.7	0.0	1.5
Approach LOS	C		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	53.6%	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)	48	95	55	161	101	99	46	1227	110	133	1813	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00	0.95	1.00	1.00	0.94
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.93		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)	1746	1734		1770	1722		1736	3539	1492	1805	3539	1491
Flt Permitted	0.40	1.00		0.53	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	727	1734		994	1722		1736	3539	1492	1805	3539	1491
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)	50	99	57	168	105	103	48	1278	115	139	1889	42
RTOR Reduction (vph)	0	20	0	0	34	0	0	0	24	0	0	6
Lane Group Flow (vph)	50	136	0	168	174	0	48	1278	91	139	1889	36
Confl. Peds. (#/hr)	16		10	10		16			9			12
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	2%	3%	2%	1%	0%	1%	4%	2%	3%	0%	2%	2%
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	20.6	20.6		21.1	21.1		4.9	63.7	63.7	12.4	71.2	71.2
Effective Green, g (s)	20.6	20.6		21.1	21.1		4.9	63.7	63.7	12.4	71.2	71.2
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.04	0.58	0.58	0.11	0.65	0.65
Clearance Time (s)	4.5	4.5		4.0	4.0		4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)	3.5	3.5		2.5	2.5		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	136	325		191	330		77	2049	864	203	2291	965
v/s Ratio Prot		0.08			0.10		0.03	0.36		c0.08	c0.53	
v/s Ratio Perm	0.07			c0.17					0.06			0.02
v/c Ratio	0.37	0.42		0.88	0.53		0.62	0.62	0.10	0.68	0.82	0.04
Uniform Delay, d1	39.0	39.4		43.2	40.0		51.6	15.3	10.4	46.9	14.7	7.0
Progression Factor	1.00	1.00		1.00	1.00		0.80	1.91	2.50	1.20	0.83	0.27
Incremental Delay, d2	2.0	1.0		33.5	1.2		10.4	1.2	0.2	2.2	1.0	0.0
Delay (s)	41.0	40.5		76.7	41.1		51.7	30.3	26.1	58.7	13.2	1.9
Level of Service	D	D		E	D		D	C	C	E	B	A
Approach Delay (s)		40.6			57.0			30.7			16.0	
Approach LOS		D			E			C			B	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	29	278	13	17	18	236	374	8	23	657	61
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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			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	
Frt		0.89			0.95		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1634			1747		1805	1876		1671	1859	
Flt Permitted		0.96			0.72		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1572			1283		1805	1876		1671	1859	
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)	43	30	290	14	18	19	246	390	8	24	684	64
RTOR Reduction (vph)	0	130	0	0	15	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	233	0	0	36	0	246	397	0	24	745	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	2%	0%	1%	0%	0%	5%	0%	1%	0%	8%	1%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		18.3			18.3		17.5	61.8		2.0	46.3	
Effective Green, g (s)		18.3			18.3		17.5	61.8		2.0	46.3	
Actuated g/C Ratio		0.19			0.19		0.18	0.65		0.02	0.48	
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)		301			246		330	1213		35	900	
v/s Ratio Prot							c0.14	0.21		0.01	c0.40	
v/s Ratio Perm		c0.15			0.03							
v/c Ratio		0.77			0.14		0.75	0.33		0.69	0.83	
Uniform Delay, d1		36.7			32.1		36.9	7.6		46.5	21.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.7			0.3		8.8	0.2		43.6	6.3	
Delay (s)		48.4			32.4		45.8	7.7		90.1	27.5	
Level of Service		D			C		D	A		F	C	
Approach Delay (s)		48.4			32.4			22.3			29.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	47	49	117	28	127	15	1237	113	85	1942	11
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes		1.00			0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1675			1746	1528	1805	3539	1511	1770	3574	1469
Flt Permitted		0.92			0.58	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1562			1062	1528	1805	3539	1511	1770	3574	1469
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	24	48	51	121	29	131	15	1275	116	88	2002	11
RTOR Reduction (vph)	0	26	0	0	0	108	0	0	22	0	0	1
Lane Group Flow (vph)	0	97	0	0	150	23	15	1275	94	88	2002	10
Confl. Peds. (#/hr)	3		17	17		3			5			5
Confl. Bikes (#/hr)		1	1					1	1			
Heavy Vehicles (%)	4%	4%	5%	4%	0%	4%	0%	2%	3%	2%	1%	6%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			6
Actuated Green, G (s)		19.0			19.0	19.0	2.7	69.7	69.7	8.5	75.5	75.5
Effective Green, g (s)		19.0			19.0	19.0	2.7	69.7	69.7	8.5	75.5	75.5
Actuated g/C Ratio		0.17			0.17	0.17	0.02	0.63	0.63	0.08	0.69	0.69
Clearance Time (s)		4.0			4.0	4.0	4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)		270			183	264	44	2242	957	137	2453	1008
v/s Ratio Prot							0.01	0.36		c0.05	c0.56	
v/s Ratio Perm		0.06			c0.14	0.01			0.06			0.01
v/c Ratio		0.36			0.82	0.09	0.34	0.57	0.10	0.64	0.82	0.01
Uniform Delay, d1		40.1			43.8	38.2	52.8	11.5	7.9	49.3	12.3	5.4
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.02	0.69	1.01
Incremental Delay, d2		0.6			23.5	0.1	2.7	1.1	0.2	4.9	1.8	0.0
Delay (s)		40.7			67.4	38.3	55.5	12.6	8.1	55.2	10.4	5.5
Level of Service		D			E	D	E	B	A	E	B	A
Approach Delay (s)		40.7			53.8			12.7			12.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	10	6	76	14	53	3	146	56	69	340	6
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)	1	11	7	83	15	58	3	159	61	75	370	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	18	155	223	451
Volume Left (vph)	1	83	3	75
Volume Right (vph)	7	58	61	7
Hadj (s)	-0.20	-0.12	-0.15	0.04
Departure Headway (s)	5.6	5.4	4.8	4.7
Degree Utilization, x	0.03	0.23	0.30	0.59
Capacity (veh/h)	539	596	709	740
Control Delay (s)	8.8	10.1	9.8	14.3
Approach Delay (s)	8.8	10.1	9.8	14.3
Approach LOS	A	B	A	B

Intersection Summary				
Delay		12.3		
HCM Level of Service		B		
Intersection Capacity Utilization		58.3%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	70	33	96	101	126	35	1202	109	153	1781	66
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	4.8	4.8	4.0	4.8	4.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.97	1.00	1.00	0.97	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	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1860	1582		1840	1531	1805	3539	1547	1787	3574	1548
Flt Permitted		0.55	1.00		0.65	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1045	1582		1225	1531	1805	3539	1547	1787	3574	1548
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	75	35	103	109	135	37	1265	115	161	1875	69
RTOR Reduction (vph)	0	0	29	0	0	65	0	0	21	0	0	8
Lane Group Flow (vph)	0	115	6	0	212	70	37	1265	94	161	1875	61
Confl. Peds. (#/hr)	12		5	5		12			3			5
Confl. Bikes (#/hr)		1						2				
Heavy Vehicles (%)	0%	0%	0%	1%	0%	2%	0%	2%	1%	1%	1%	0%
Turn Type	Perm		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		25.0	25.0		25.0	25.0	3.2	92.4	92.4	17.6	106.8	106.8
Effective Green, g (s)		25.0	25.0		25.0	25.0	3.2	92.4	92.4	17.6	106.8	106.8
Actuated g/C Ratio		0.17	0.17		0.17	0.17	0.02	0.63	0.63	0.12	0.72	0.72
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.8	4.8	4.0	4.8	4.8
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)		177	268		207	259	39	2212	967	213	2583	1119
v/s Ratio Prot							0.02	0.36		c0.09	c0.52	
v/s Ratio Perm		0.11	0.00		c0.17	0.05			0.06			0.04
v/c Ratio		0.65	0.02		1.02	0.27	0.95	0.57	0.10	0.76	0.73	0.05
Uniform Delay, d1		57.3	51.2		61.4	53.5	72.2	16.2	11.1	63.0	12.0	5.9
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		7.1	0.0		69.0	0.4	122.1	1.1	0.2	13.2	1.8	0.1
Delay (s)		64.4	51.2		130.4	53.9	194.3	17.2	11.3	76.2	13.8	6.0
Level of Service		E	D		F	D	F	B	B	E	B	A
Approach Delay (s)		61.3			100.6			21.4			18.3	
Approach LOS		E			F			C			B	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	147.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	120.8%	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												
Volume (vph)	49	276	68	37	309	165	97	355	39	192	461	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		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	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1831			1890	1599	1787	1855		1805	1827	
Flt Permitted		0.81			0.92	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1494			1747	1599	1787	1855		1805	1827	
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)	51	288	71	39	322	172	101	370	41	200	480	83
RTOR Reduction (vph)	0	7	0	0	0	68	0	3	0	0	5	0
Lane Group Flow (vph)	0	403	0	0	361	104	101	408	0	200	558	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)		1										
Heavy Vehicles (%)	0%	1%	0%	0%	0%	1%	1%	1%	0%	0%	2%	0%
Turn Type	Perm			Perm		Prot	Prot			Prot		
Protected Phases		4			8	8	5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		31.5			31.5	31.5	8.2	32.5		15.8	40.1	
Effective Green, g (s)		31.5			31.5	31.5	8.2	32.5		15.8	40.1	
Actuated g/C Ratio		0.34			0.34	0.34	0.09	0.35		0.17	0.44	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)		513			599	549	160	657		311	798	
v/s Ratio Prot						0.06	0.06	0.22		c0.11	c0.31	
v/s Ratio Perm		c0.27			0.21							
v/c Ratio		0.79			0.60	0.19	0.63	0.62		0.64	0.70	
Uniform Delay, d1		27.1			25.0	21.2	40.3	24.5		35.4	21.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.8			1.7	0.2	6.9	2.6		4.0	3.4	
Delay (s)		34.9			26.7	21.3	47.3	27.1		39.4	24.4	
Level of Service		C			C	C	D	C		D	C	
Approach Delay (s)		34.9			25.0			31.1			28.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	131	122	233	106	133	281
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	139	130	248	113	141	299
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			233			
pX, platoon unblocked						
vC, conflicting volume	361				713	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	361				713	304
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				60	60
cM capacity (veh/h)	1209				350	740

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	269	361	440
Volume Left	139	0	141
Volume Right	0	113	299
cSH	1209	1700	1089
Volume to Capacity	0.12	0.21	0.40
Queue Length 95th (ft)	10	0	50
Control Delay (s)	4.8	0.0	16.0
Lane LOS	A		C
Approach Delay (s)	4.8	0.0	16.0
Approach LOS			C

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	49.8%	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)	116	68	145	57	98	71	104	1202	74	29	1558	197
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	4.8	4.8	3.5	4.8	4.8
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1791	1587		1829	1591	1805	3505	1578	1805	3539	1517
Flt Permitted		0.57	1.00		0.67	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1046	1587		1254	1591	1805	3505	1578	1805	3539	1517
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)	122	72	153	60	103	75	109	1265	78	31	1640	207
RTOR Reduction (vph)	0	0	107	0	0	60	0	0	17	0	0	27
Lane Group Flow (vph)	0	194	46	0	163	15	109	1265	61	31	1640	180
Confl. Peds. (#/hr)	2		4	4		2			1			1
Confl. Bikes (#/hr)					1			1			1	
Heavy Vehicles (%)	2%	4%	0%	0%	3%	0%	0%	3%	0%	0%	2%	4%
Turn Type	Perm		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		22.6	22.6		22.6	22.6	10.5	71.3	71.3	3.8	64.1	64.1
Effective Green, g (s)		22.6	22.6		22.6	22.6	10.5	71.3	71.3	3.8	64.1	64.1
Actuated g/C Ratio		0.21	0.21		0.21	0.21	0.10	0.65	0.65	0.03	0.58	0.58
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.8	4.8	3.5	4.8	4.8
Vehicle Extension (s)		2.5	2.5		2.5	2.5	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)		215	326		258	327	172	2272	1023	62	2062	884
v/s Ratio Prot							0.06	c0.36		0.02	c0.46	
v/s Ratio Perm		c0.19	0.03		0.13	0.01			0.04			0.12
v/c Ratio		0.90	0.14		0.63	0.05	0.63	0.56	0.06	0.50	0.80	0.20
Uniform Delay, d1		42.6	35.8		39.9	35.1	47.9	10.7	7.1	52.2	17.8	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		35.8	0.1		4.4	0.0	6.1	1.0	0.1	3.7	3.3	0.5
Delay (s)		78.4	35.9		44.3	35.1	54.0	11.6	7.2	55.8	21.1	11.4
Level of Service		E	D		D	D	D	B	A	E	C	B
Approach Delay (s)		59.7			41.4			14.6			20.6	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.8
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	13	438	565	234	226	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	466	601	249	240	13

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	480	850	253
Volume Left (vph)	14	0	240
Volume Right (vph)	0	249	13
Hadj (s)	0.06	-0.15	0.21
Departure Headway (s)	5.9	5.5	6.9
Degree Utilization, x	0.78	1.30	0.49
Capacity (veh/h)	603	657	495
Control Delay (s)	26.8	165.8	16.4
Approach Delay (s)	26.8	165.8	16.4
Approach LOS	D	F	C

Intersection Summary			
Delay	99.7		
HCM Level of Service	F		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	75	567	604	44	106	233
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	78	591	629	46	110	243

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	669	675	353
Volume Left (vph)	78	0	110
Volume Right (vph)	0	46	243
Hadj (s)	0.07	-0.02	-0.34
Departure Headway (s)	6.3	6.2	6.6
Degree Utilization, x	1.17	1.16	0.65
Capacity (veh/h)	569	587	530
Control Delay (s)	115.3	112.1	21.2
Approach Delay (s)	115.3	112.1	21.2
Approach LOS	F	F	C

Intersection Summary			
Delay	94.4		
HCM Level of Service	F		
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	340	130	122	382	77	128	260	51	132	546	142
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	
Lane Util. Factor	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	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.98		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)	1671	1807		1770	1821		1787	1818		1782	1806	
Flt Permitted	0.26	1.00		0.25	1.00		0.09	1.00		0.41	1.00	
Satd. Flow (perm)	459	1807		465	1821		161	1818		763	1806	
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)	196	374	143	134	420	85	141	286	56	145	600	156
RTOR Reduction (vph)	0	12	0	0	6	0	0	6	0	0	8	0
Lane Group Flow (vph)	196	505	0	134	499	0	141	336	0	145	748	0
Confl. Peds. (#/hr)	4		3	3		4	5		6	6		5
Heavy Vehicles (%)	8%	0%	0%	2%	1%	2%	1%	1%	3%	1%	1%	2%
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.5	48.5		48.5	48.5		53.7	46.6		55.3	47.4	
Effective Green, g (s)	48.5	48.5		48.5	48.5		53.7	46.6		55.3	47.4	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.46	0.40		0.47	0.41	
Clearance Time (s)	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	3.0		2.5	3.0	
Lane Grp Cap (vph)	191	752		194	758		173	727		431	735	
v/s Ratio Prot		0.28			0.27		c0.05	0.18		0.02	c0.41	
v/s Ratio Perm	c0.43			0.29			0.32			0.14		
v/c Ratio	1.03	0.67		0.69	0.66		0.82	0.46		0.34	1.02	
Uniform Delay, d1	34.0	27.6		27.9	27.3		26.8	25.7		18.3	34.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	72.1	2.2		9.4	1.8		24.1	0.5		0.3	37.6	
Delay (s)	106.1	29.7		37.2	29.2		50.9	26.2		18.6	72.1	
Level of Service	F	C		D	C		D	C		B	E	
Approach Delay (s)		50.7			30.9			33.4			63.5	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM Average Control Delay	47.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	116.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	236	168	236	143	230	285
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	257	183	257	155	250	310

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	439	412	560
Volume Left (vph)	257	257	0
Volume Right (vph)	183	0	310
Hadj (s)	-0.12	0.20	-0.31
Departure Headway (s)	6.6	6.8	6.1
Degree Utilization, x	0.81	0.78	0.94
Capacity (veh/h)	537	515	560
Control Delay (s)	31.4	29.5	48.6
Approach Delay (s)	31.4	29.5	48.6
Approach LOS	D	D	E

Intersection Summary			
Delay	37.7		
HCM Level of Service	E		
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	377	39	303	410	92	523
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	419	43	337	456	102	581

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	462	337	456	683
Volume Left (vph)	419	0	0	102
Volume Right (vph)	43	0	456	0
Hadj (s)	0.14	0.03	-0.55	0.06
Departure Headway (s)	6.7	6.7	3.2	6.4
Degree Utilization, x	0.86	0.63	0.40	1.21
Capacity (veh/h)	532	518	1115	570
Control Delay (s)	37.7	20.3	8.4	133.7
Approach Delay (s)	37.7	13.5		133.7
Approach LOS	E	B		F

Intersection Summary			
Delay	61.6		
HCM Level of Service	F		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	394	25	76	327	415	473
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	438	28	84	363	461	526

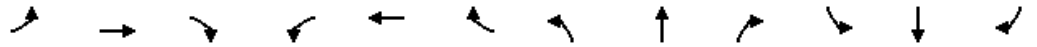
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total (vph)	438	28	448	461	526
Volume Left (vph)	438	0	84	0	0
Volume Right (vph)	0	28	0	0	526
Hadj (s)	0.53	-0.70	0.07	0.03	-0.67
Departure Headway (s)	8.3	7.0	7.4	7.5	6.8
Degree Utilization, x	1.00	0.05	0.92	0.97	1.00
Capacity (veh/h)	438	504	477	461	526
Control Delay (s)	72.2	9.2	50.7	59.3	63.6
Approach Delay (s)	68.5		50.7	61.6	
Approach LOS	F		F	F	

Intersection Summary			
Delay	60.7		
HCM Level of Service	F		
Intersection Capacity Utilization	75.1%	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 (veh/h)	0	1	0	90	1	138	1	239	51	48	346	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	0	105	1	160	1	266	57	53	384	0
Pedestrians		1						1			1	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	950	817	386	789	788	295	385			322		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	950	817	386	789	788	295	385			322		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	64	100	79	100			96		
cM capacity (veh/h)	183	299	665	292	311	749	1183			1243		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	266	323	438
Volume Left	0	105	1	53
Volume Right	0	160	57	0
cSH	299	462	1183	1243
Volume to Capacity	0.00	0.58	0.00	0.04
Queue Length 95th (ft)	0	89	0	3
Control Delay (s)	17.1	22.9	0.0	1.4
Lane LOS	C	C	A	A
Approach Delay (s)	17.1	22.9	0.0	1.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	66.8%	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)	0	872	188	611	649	0	0	0	903	0	0	392
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	4.5				4.0			5.5
Lane Util. Factor		1.00		1.00	1.00				0.88			1.00
Frpb, ped/bikes		0.99		1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00		1.00	1.00				1.00			1.00
Frt		0.98		1.00	1.00				0.85			0.86
Flt Protected		1.00		0.95	1.00				1.00			1.00
Satd. Flow (prot)		1827		1719	1810				2538			1611
Flt Permitted		1.00		0.95	1.00				1.00			1.00
Satd. Flow (perm)		1827		1719	1810				2538			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	918	198	643	683	0	0	0	951	0	0	413
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	218
Lane Group Flow (vph)	0	1107	0	643	683	0	0	0	951	0	0	195
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)		1	1	1	2							
Heavy Vehicles (%)	0%	1%	1%	5%	5%	0%	0%	0%	12%	0%	0%	2%
Turn Type				Prot					Free			custom
Protected Phases		2		1	6							5
Permitted Phases									Free			
Actuated Green, G (s)		44.5		25.5	57.7				81.0			13.3
Effective Green, g (s)		44.5		25.5	57.7				81.0			13.3
Actuated g/C Ratio		0.55		0.31	0.71				1.00			0.16
Clearance Time (s)		5.5		5.5	4.5							5.5
Vehicle Extension (s)		2.3		2.3	4.2							2.3
Lane Grp Cap (vph)		1004		541	1289				2538			265
v/s Ratio Prot		c0.61		c0.37	0.38							0.12
v/s Ratio Perm									0.37			
v/c Ratio		1.10		1.19	0.53				0.37			0.74
Uniform Delay, d1		18.2		27.8	5.4				0.0			32.2
Progression Factor		1.00		1.00	1.00				1.00			1.00
Incremental Delay, d2		60.6		102.2	0.6				0.4			9.3
Delay (s)		78.9		130.0	5.9				0.4			41.4
Level of Service		E		F	A				A			D
Approach Delay (s)		78.9			66.1			0.4			41.4	
Approach LOS		E			E			A			D	

Intersection Summary			
HCM Average Control Delay	50.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	99.9%	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)	263	1342	0	0	1122	696	195	2	579	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5			4.5	4.5		5.5	4.0			
Lane Util. Factor	1.00	0.91			0.91	0.88		1.00	0.88			
Frpb, ped/bikes	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			
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)	1787	4759			4988	2608		1775	2682			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1787	4759			4988	2608		1775	2682			
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)	277	1413	0	0	1181	733	205	2	609	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	388	0	0	19	0	0	0
Lane Group Flow (vph)	277	1413	0	0	1181	345	0	207	590	0	0	0
Confl. Peds. (#/hr)	2		5	5		2						
Confl. Bikes (#/hr)		3			1							
Heavy Vehicles (%)	1%	9%	0%	0%	4%	9%	2%	0%	6%	0%	0%	0%
Turn Type	Prot					Prot	Split		custom			
Protected Phases	5	2			6	6	4	4	1 4			
Permitted Phases									4			
Actuated Green, G (s)	31.0	71.9			45.1	45.1		29.9	39.6			
Effective Green, g (s)	31.0	71.9			45.1	45.1		29.9	34.1			
Actuated g/C Ratio	0.26	0.60			0.38	0.38		0.25	0.28			
Clearance Time (s)	4.0	4.5			4.5	4.5		5.5				
Vehicle Extension (s)	0.5	0.5			0.5	0.5		2.3				
Lane Grp Cap (vph)	462	2851			1875	980		442	762			
v/s Ratio Prot	c0.15	0.30			c0.24	0.13		0.12	c0.22			
v/s Ratio Perm												
v/c Ratio	0.60	0.50			0.63	0.35		0.47	0.77			
Uniform Delay, d1	39.1	13.7			30.6	26.9		38.3	39.4			
Progression Factor	1.00	1.00			1.65	4.72		1.00	1.00			
Incremental Delay, d2	1.4	0.6			0.6	0.4		0.5	4.5			
Delay (s)	40.5	14.3			51.0	127.6		38.8	43.9			
Level of Service	D	B			D	F		D	D			
Approach Delay (s)		18.6			80.3			42.6			0.0	
Approach LOS		B			F			D			A	

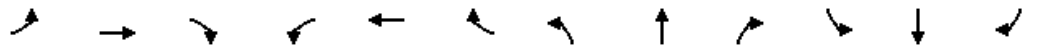
Intersection Summary			
HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	1441	152	129	1139	48	271	45	182	127	112	49
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	4.0	5.0	5.0	4.5	4.5		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		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)	1433	3406	1161	1656	3374	1382	1556	1492		1641	1578	
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)	1433	3406	1161	1656	3374	1382	1556	1492		1641	1578	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	44	1517	160	136	1199	51	295	49	198	138	122	53
RTOR Reduction (vph)	0	0	56	0	0	10	0	121	0	0	13	0
Lane Group Flow (vph)	44	1517	104	136	1199	41	295	126	0	138	162	0
Confl. Peds. (#/hr)	2		3	3		2	2		5	5		2
Confl. Bikes (#/hr)					2							
Heavy Vehicles (%)	26%	6%	35%	9%	7%	14%	16%	11%	10%	10%	12%	20%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	7.5	58.5	58.5	14.5	65.5	65.5	20.0	20.0		9.5	9.5	
Effective Green, g (s)	7.5	58.5	58.5	14.5	65.5	65.5	20.0	20.0		9.5	9.5	
Actuated g/C Ratio	0.06	0.49	0.49	0.12	0.55	0.55	0.17	0.17		0.08	0.08	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.5	4.5		4.0	4.0	
Vehicle Extension (s)	2.3	4.3	4.3	2.3	4.3	4.3	2.3	2.3		2.3	2.3	
Lane Grp Cap (vph)	90	1660	566	200	1842	754	259	249		130	125	
v/s Ratio Prot	0.03	c0.45		c0.08	0.36		c0.19	0.08		0.08	c0.10	
v/s Ratio Perm			0.09			0.03						
v/c Ratio	0.49	0.91	0.18	0.68	0.65	0.05	1.14	0.51		1.06	1.30	
Uniform Delay, d1	54.4	28.4	17.3	50.5	19.2	12.8	50.0	45.5		55.2	55.2	
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	2.4	9.3	0.7	8.0	1.8	0.1	98.7	0.9		96.3	180.2	
Delay (s)	56.8	37.7	18.0	58.5	21.0	12.9	148.7	46.5		151.6	235.5	
Level of Service	E	D	B	E	C	B	F	D		F	F	
Approach Delay (s)		36.4			24.4			102.1			198.5	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	369	60	40	421	102	113	230	81	74	153	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	0.96		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)	1583	1694		1504	1687		1656	1449		1081	1226	1531
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1583	1694		1504	1687		1656	1449		1081	1226	1531
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	71	397	65	43	453	110	122	247	87	80	165	168
RTOR Reduction (vph)	0	4	0	0	5	0	0	8	0	0	0	122
Lane Group Flow (vph)	71	458	0	43	558	0	122	326	0	80	165	46
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)							1				1	1
Heavy Vehicles (%)	14%	7%	27%	20%	5%	27%	9%	32%	9%	67%	55%	3%
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												4
Actuated Green, G (s)	8.4	51.2		5.7	48.5		12.5	34.1		12.5	34.1	34.1
Effective Green, g (s)	8.4	51.2		5.7	48.5		12.5	34.1		12.5	34.1	34.1
Actuated g/C Ratio	0.07	0.41		0.05	0.39		0.10	0.27		0.10	0.27	0.27
Clearance Time (s)	5.0	5.5		5.0	5.5		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)	0.5	2.0		0.5	2.0		0.2	3.0		0.5	1.5	1.5
Lane Grp Cap (vph)	107	697		69	657		166	397		109	336	419
v/s Ratio Prot	c0.04	c0.27		0.03	c0.33		0.07	c0.23		c0.07	0.13	
v/s Ratio Perm												0.03
v/c Ratio	0.66	0.66		0.62	0.85		0.73	0.82		0.73	0.49	0.11
Uniform Delay, d1	56.7	29.6		58.3	34.7		54.4	42.3		54.4	37.9	33.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.4	1.7		11.9	9.6		13.5	12.8		19.6	0.4	0.0
Delay (s)	68.0	31.3		70.3	44.2		67.9	55.1		74.0	38.3	33.9
Level of Service	E	C		E	D		E	E		E	D	C
Approach Delay (s)		36.2			46.1			58.5			43.4	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	45.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	124.5	Sum of lost time (s)	26.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	134	663	240	541	743	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	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
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1736	1568	1752	1743	1827	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1736	1568	1752	1743	1827	1553
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	144	713	258	582	799	206
RTOR Reduction (vph)	0	64	0	0	0	51
Lane Group Flow (vph)	144	649	258	582	799	155
Confl. Peds. (#/hr)		3				
Confl. Bikes (#/hr)		1			1	
Heavy Vehicles (%)	4%	3%	3%	9%	4%	4%
Turn Type		pt+ov	Prot			Prot
Protected Phases	8	8 1	1	6	2	2
Permitted Phases						
Actuated Green, G (s)	27.6	50.0	17.9	73.9	51.5	51.5
Effective Green, g (s)	27.6	50.0	17.9	73.9	51.5	51.5
Actuated g/C Ratio	0.25	0.45	0.16	0.67	0.46	0.46
Clearance Time (s)	4.5		4.5	5.0	5.0	5.0
Vehicle Extension (s)	2.5		2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	432	706	283	1160	848	721
v/s Ratio Prot	0.08	c0.41	0.15	0.33	c0.44	0.10
v/s Ratio Perm						
v/c Ratio	0.33	0.92	0.91	0.50	0.94	0.21
Uniform Delay, d1	34.2	28.6	45.8	9.3	28.3	17.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	17.0	31.4	0.5	18.5	0.2
Delay (s)	34.5	45.6	77.2	9.8	46.9	17.9
Level of Service	C	D	E	A	D	B
Approach Delay (s)	43.7			30.5	40.9	
Approach LOS	D			C	D	

Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	98	41	63	687	1053	288
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	102	43	66	716	1097	300
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2094	1247	1397			
vC1, stage 1 conf vol	1247					
vC2, stage 2 conf vol	847					
vCu, unblocked vol	2094	1247	1397			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	53	80	87			
cM capacity (veh/h)	215	210	496			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	145	66	716	1397
Volume Left	102	66	0	0
Volume Right	43	0	0	300
cSH	213	496	1700	1700
Volume to Capacity	0.68	0.13	0.42	0.82
Queue Length 95th (ft)	106	11	0	0
Control Delay (s)	51.4	13.4	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	51.4	1.1		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	120	204	27	39	53	75	303	26	70	405	12
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		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		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)	1803	1681		1496	1692		1752	1857		1736	1856	
Flt Permitted	0.69	1.00		0.39	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1314	1681		614	1692		1752	1857		1736	1856	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	130	222	29	42	58	82	329	28	76	440	13
RTOR Reduction (vph)	0	65	0	0	42	0	0	3	0	0	1	0
Lane Group Flow (vph)	32	287	0	29	58	0	82	354	0	76	452	0
Confl. Peds. (#/hr)	1		8	8		1			5	5		
Heavy Vehicles (%)	0%	1%	0%	20%	3%	0%	3%	1%	0%	4%	2%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	13.0	13.0		13.0	13.0		3.5	17.7		3.4	17.6	
Effective Green, g (s)	13.0	13.0		13.0	13.0		3.5	17.7		3.4	17.6	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.07	0.38		0.07	0.37	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	0.5	0.5		0.5	0.5		0.5	2.0		0.5	2.0	
Lane Grp Cap (vph)	363	464		169	467		130	698		125	694	
v/s Ratio Prot		c0.17			0.03		c0.05	0.19		0.04	c0.24	
v/s Ratio Perm	0.02			0.05								
v/c Ratio	0.09	0.62		0.17	0.12		0.63	0.51		0.61	0.65	
Uniform Delay, d1	12.7	14.9		13.0	12.8		21.2	11.3		21.2	12.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.7		0.2	0.0		7.1	0.2		5.6	1.7	
Delay (s)	12.7	16.6		13.1	12.8		28.3	11.5		26.8	13.9	
Level of Service	B	B		B	B		C	B		C	B	
Approach Delay (s)		16.3			12.9			14.7			15.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	4	464	476	213	115	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	533	547	245	132	7
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	792				1212	670
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	792				1212	670
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	99				35	98
cM capacity (veh/h)	838				202	450

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	533	792	139
Volume Left	5	0	0	132
Volume Right	0	0	245	7
cSH	838	1700	1700	208
Volume to Capacity	0.01	0.31	0.47	0.67
Queue Length 95th (ft)	0	0	0	103
Control Delay (s)	9.3	0.0	0.0	51.8
Lane LOS	A			F
Approach Delay (s)	0.1		0.0	51.8
Approach LOS				F

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	51.4%	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)	315	3174	33	174	1683	219	40	185	631	349	80	171
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	4.0	5.0		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
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	0.88		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1400	1703	3367		1671	1632		1770	1657	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.52	1.00		0.07	1.00	
Satd. Flow (perm)	1770	3539	1400	1703	3367		919	1632		137	1657	
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)	332	3341	35	183	1772	231	42	195	664	367	84	180
RTOR Reduction (vph)	0	0	2	0	8	0	0	73	0	0	64	0
Lane Group Flow (vph)	332	3341	33	183	1995	0	42	786	0	367	200	0
Confl. Peds. (#/hr)	3		3	3		3			2	2		
Heavy Vehicles (%)	2%	2%	12%	6%	5%	5%	8%	1%	2%	2%	5%	2%
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	9.0	46.0	46.0	6.0	43.0		54.5	54.5		54.5	54.5	
Effective Green, g (s)	9.0	46.0	46.0	6.0	43.0		54.5	54.5		54.5	54.5	
Actuated g/C Ratio	0.08	0.38	0.38	0.05	0.36		0.45	0.45		0.45	0.45	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		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)	133	1357	537	85	1207		417	741		62	753	
v/s Ratio Prot	c0.19	c0.94		0.11	0.59			0.48			0.12	
v/s Ratio Perm			0.02				0.05			c2.68		
v/c Ratio	2.50	2.46	0.06	2.15	1.65		0.10	1.06		5.92	0.27	
Uniform Delay, d1	55.5	37.0	23.4	57.0	38.5		18.7	32.8		32.8	20.3	
Progression Factor	1.00	1.00	1.00	1.34	0.68		1.00	1.00		1.00	1.00	
Incremental Delay, d2	695.2	660.1	0.2	533.2	295.1		0.1	50.3		2248.1	0.2	
Delay (s)	750.7	697.1	23.6	609.7	321.1		18.8	83.0		2280.9	20.5	
Level of Service	F	F	C	F	F		B	F		F	C	
Approach Delay (s)		695.6			345.3			80.0			1335.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	572.1	HCM Level of Service	F
HCM Volume to Capacity ratio	4.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	180.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	3894	42	0	1766	3	30	1	1	12	3	336
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		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	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	
Frt	1.00	1.00	0.85		1.00	0.85		1.00	0.85		0.87	
Flt Protected	0.95	1.00	1.00		1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1805	3539	1538		3438	1568		1806	1593		1555	
Flt Permitted	0.95	1.00	1.00		1.00	1.00		0.32	1.00		0.99	
Satd. Flow (perm)	1805	3539	1538		3438	1568		608	1593		1544	
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)	280	4056	44	0	1840	3	31	1	1	12	3	350
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	1	0	173	0
Lane Group Flow (vph)	280	4056	42	0	1840	3	0	32	0	0	192	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	0%	2%	5%	14%	5%	3%	0%	9%	0%	0%	0%	5%
Turn Type	Prot		Prot	Prot		Prot	Perm		Perm	Perm		
Protected Phases	5	2	2	1	6	6		8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	22.4	92.8	92.8		66.4	66.4		18.2	18.2		18.2	
Effective Green, g (s)	22.4	92.8	92.8		66.4	66.4		18.2	18.2		18.2	
Actuated g/C Ratio	0.19	0.77	0.77		0.55	0.55		0.15	0.15		0.15	
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0		4.0	4.0		4.0	
Vehicle Extension (s)	2.3	5.4	5.4		5.4	5.4		2.5	2.5		2.5	
Lane Grp Cap (vph)	337	2737	1189		1902	868		92	242		234	
v/s Ratio Prot	0.16	c1.15	0.03		0.54	0.00						
v/s Ratio Perm								0.05	0.00		c0.12	
v/c Ratio	0.83	1.48	0.04		0.97	0.00		0.35	0.00		0.82	
Uniform Delay, d1	47.0	13.6	3.2		25.8	12.0		45.6	43.2		49.3	
Progression Factor	0.94	1.49	0.32		1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	1.6	217.0	0.0		14.2	0.0		1.7	0.0		19.7	
Delay (s)	45.8	237.3	1.0		40.0	12.0		47.2	43.2		69.0	
Level of Service	D	F	A		D	B		D	D		E	
Approach Delay (s)		222.7			40.0			47.1			69.0	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM Average Control Delay	162.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	150.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1789	2060	78	1026	740	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	4.0	6.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3471	1548	1736	3505	3389	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3471	1548	1736	3505	3389	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1864	2146	81	1069	771	38
RTOR Reduction (vph)	0	43	0	0	2	0
Lane Group Flow (vph)	1864	2103	81	1069	807	0
Confl. Peds. (#/hr)		1	1		2	1
Heavy Vehicles (%)	4%	3%	4%	3%	3%	2%
Turn Type		pm+ov	Prot			
Protected Phases	2	8	1	6	8	
Permitted Phases		2				
Actuated Green, G (s)	57.0	124.0	10.0	71.0	67.0	
Effective Green, g (s)	57.0	124.0	10.0	71.0	67.0	
Actuated g/C Ratio	0.38	0.83	0.07	0.48	0.45	
Clearance Time (s)	6.0	5.0	4.0	6.0	5.0	
Vehicle Extension (s)	4.8	2.3	2.3	5.5	2.3	
Lane Grp Cap (vph)	1328	1288	117	1670	1524	
v/s Ratio Prot	0.54	c0.73	0.05	c0.31	0.24	
v/s Ratio Perm		0.62				
v/c Ratio	1.40	1.63	0.69	0.64	0.53	
Uniform Delay, d1	46.0	12.5	68.0	29.4	29.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	186.2	288.2	14.4	1.3	0.2	
Delay (s)	232.2	300.7	82.4	30.6	29.8	
Level of Service	F	F	F	C	C	
Approach Delay (s)	268.9			34.3	29.8	
Approach LOS	F			C	C	

Intersection Summary			
HCM Average Control Delay	191.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	149.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	139.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1881	0	1	1087	0	1	0	2	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	1980	0	1	1144	0	1	0	2	0	0	1
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	1144			1980			3127	3126	1980	3129	3126	1144
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1144			1980			3127	3126	1980	3129	3126	1144
tC, single (s)	4.1			4.1			8.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.4	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			100			61	100	97	100	100	99
cM capacity (veh/h)	618			296			3	11	78	7	11	158

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1980	1145	3	1
Volume Left	0	1	1	0
Volume Right	0	0	2	1
cSH	618	296	8	158
Volume to Capacity	0.00	0.00	0.42	0.01
Queue Length 95th (ft)	0	0	22	1
Control Delay (s)	0.0	0.2	660.7	28.0
Lane LOS		A	F	D
Approach Delay (s)	0.0	0.2	660.7	28.0
Approach LOS			F	D

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	109.0%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	380	953	0	3	698	176	0	243	46	261	335	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.4		4.0	5.4	5.4		4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00		1.00	1.00	1.00
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		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539		1805	1810	1568		1851		1768	1792	1442
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00		0.39	1.00	1.00
Satd. Flow (perm)	1770	3539		1805	1810	1568		1851		732	1792	1442
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)	396	993	0	3	727	183	0	253	48	272	349	393
RTOR Reduction (vph)	0	0	0	0	0	111	0	5	0	0	0	256
Lane Group Flow (vph)	396	993	0	3	727	72	0	296	0	272	349	137
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	0%	0%	5%	3%	11%	0%	0%	2%	6%	12%
Turn Type	Prot			Prot		Prot	Perm			Perm		Prot
Protected Phases	5	2		1	6	6		8			4	4
Permitted Phases							8			4		
Actuated Green, G (s)	23.0	71.9		0.8	49.7	49.7		40.5		40.5	40.5	40.5
Effective Green, g (s)	23.0	71.9		0.8	49.7	49.7		40.5		40.5	40.5	40.5
Actuated g/C Ratio	0.18	0.57		0.01	0.39	0.39		0.32		0.32	0.32	0.32
Clearance Time (s)	4.0	5.4		4.0	5.4	5.4		4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.3	5.4		2.3	5.4	5.4		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	320	2002		11	708	613		590		233	571	459
v/s Ratio Prot	c0.22	0.28		0.00	c0.40	0.05		0.16			0.19	0.10
v/s Ratio Perm										c0.37		
v/c Ratio	1.24	0.50		0.27	1.03	0.12		0.50		1.17	0.61	0.30
Uniform Delay, d1	52.0	16.7		62.9	38.7	24.7		35.1		43.3	36.6	32.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	130.8	0.5		7.7	40.8	0.2		0.5		111.7	1.7	0.3
Delay (s)	182.9	17.1		70.5	79.5	24.9		35.6		155.0	38.3	32.9
Level of Service	F	B		E	E	C		D		F	D	C
Approach Delay (s)		64.4			68.6			35.6			67.5	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM Average Control Delay	63.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	127.1	Sum of lost time (s)	13.9
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	147	847	800	107	469	507
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	155	892	842	113	494	534
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			1046		2397	601
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1046		2397	601
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			0		0	0
cM capacity (veh/h)			673		0	504

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1046	955	1027
Volume Left	0	842	494
Volume Right	892	0	534
cSH	1700	673	0
Volume to Capacity	0.62	1.25	Err
Queue Length 95th (ft)	0	782	Err
Control Delay (s)	0.0	145.9	Err
Lane LOS		F	F
Approach Delay (s)	0.0	145.9	Err
Approach LOS			F

Intersection Summary			
Average Delay		Err	
Intersection Capacity Utilization		177.0%	ICU Level of Service H
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	227	68	30	315	848	161
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	247	74	33	342	922	175
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2290	1931	1843	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2290	1931	1843	0	0	
tC, single (s)	7.1	6.5	6.6	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.2	
p0 queue free %	0	0	0	68	43	
cM capacity (veh/h)	0	28	31	1076	1617	

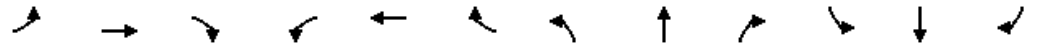
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	321	375	1097
Volume Left	247	0	922
Volume Right	0	342	175
cSH	0	277	1617
Volume to Capacity	Err	1.35	0.57
Queue Length 95th (ft)	Err	487	95
Control Delay (s)	Err	216.9	9.5
Lane LOS	F	F	A
Approach Delay (s)	Err	216.9	9.5
Approach LOS	F	F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	879	397	24	339	206	49
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	977	441	27	377	229	54
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			1418		1627	1197
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1418		1627	1197
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		0	76
cM capacity (veh/h)			487		107	223

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1418	403	283
Volume Left	0	27	229
Volume Right	441	0	54
cSH	1700	487	119
Volume to Capacity	0.83	0.05	2.39
Queue Length 95th (ft)	0	4	622
Control Delay (s)	0.0	1.7	709.0
Lane LOS		A	F
Approach Delay (s)	0.0	1.7	709.0
Approach LOS			F

Intersection Summary			
Average Delay	95.8		
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	533	1287	344	59	775	111	488	138	92	104	152	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.5		4.2	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
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	0.97		1.00	0.98		1.00	0.94		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)	1787	3481		1805	3512		1787	1775		1805	1863	1599
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3481		1805	3512		1787	1775		1805	1863	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	549	1327	355	61	799	114	503	142	95	107	157	307
RTOR Reduction (vph)	0	15	0	0	7	0	0	15	0	0	0	273
Lane Group Flow (vph)	549	1667	0	61	906	0	503	222	0	107	157	34
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	1%	0%	2%	0%	1%	0%	1%	1%	0%	0%	2%	1%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	5	2		1	6		4	4		8	8	8
Permitted Phases												
Actuated Green, G (s)	41.8	73.3		6.2	37.7		39.5	39.5		17.0	17.0	17.0
Effective Green, g (s)	41.8	73.3		6.2	37.7		39.5	39.5		17.0	17.0	17.0
Actuated g/C Ratio	0.27	0.48		0.04	0.25		0.26	0.26		0.11	0.11	0.11
Clearance Time (s)	4.2	4.5		4.2	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	5.2		2.5	5.2		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	486	1660		73	861		459	456		200	206	177
v/s Ratio Prot	c0.31	c0.48		0.03	0.26		c0.28	0.13		0.06	c0.08	0.02
v/s Ratio Perm												
v/c Ratio	1.13	1.00		0.84	1.05		1.10	0.49		0.54	0.76	0.19
Uniform Delay, d1	55.9	40.2		73.2	58.0		57.1	48.5		64.6	66.4	62.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	81.4	23.1		52.4	45.4		70.5	0.6		2.1	14.7	0.4
Delay (s)	137.4	63.3		125.6	103.4		127.6	49.1		66.7	81.1	62.5
Level of Service	F	E		F	F		F	D		E	F	E
Approach Delay (s)		81.5			104.8			102.5			68.4	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM Average Control Delay	88.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	153.7	Sum of lost time (s)	13.2
Intersection Capacity Utilization	105.2%	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												
Volume (vph)	234	1094	593	183	953	300	322	384	76	308	430	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	4715	1558	1736	4673	1511	1770	1863	1539	1736	1845	1540
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	4715	1558	1736	4673	1511	1770	1863	1539	1736	1845	1540
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)	246	1152	624	193	1003	316	339	404	80	324	453	562
RTOR Reduction (vph)	0	0	242	0	0	226	0	0	30	0	0	125
Lane Group Flow (vph)	246	1152	382	193	1003	90	339	404	50	324	453	437
Confl. Peds. (#/hr)	4		3	3		4	31		19	19		31
Heavy Vehicles (%)	5%	10%	1%	4%	11%	4%	2%	2%	2%	4%	3%	1%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	17.6	36.0	36.0	15.6	34.0	34.0	14.0	37.4	37.4	14.0	37.4	37.4
Effective Green, g (s)	17.6	36.0	36.0	15.6	34.0	34.0	14.0	37.4	37.4	14.0	37.4	37.4
Actuated g/C Ratio	0.15	0.30	0.30	0.13	0.28	0.28	0.12	0.31	0.31	0.12	0.31	0.31
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5
Vehicle Extension (s)	2.3	4.4	4.4	2.3	4.4	4.4	2.3	2.3	2.3	2.3	2.3	2.3
Lane Grp Cap (vph)	252	1415	467	226	1324	428	207	581	480	203	575	480
v/s Ratio Prot	c0.14	0.24		0.11	0.21		c0.19	0.22		0.19	0.25	
v/s Ratio Perm			c0.24			0.06			0.03			c0.28
v/c Ratio	0.98	0.81	0.82	0.85	0.76	0.21	1.64	0.70	0.11	1.60	0.79	0.91
Uniform Delay, d1	51.0	38.9	39.0	51.1	39.2	32.8	53.0	36.3	29.4	53.0	37.7	39.7
Progression Factor	0.88	0.94	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.1	4.6	13.1	25.0	4.1	1.1	307.8	3.2	0.1	290.2	6.7	20.8
Delay (s)	90.7	41.0	47.2	76.1	43.3	33.9	360.8	39.5	29.4	343.2	44.4	60.5
Level of Service	F	D	D	E	D	C	F	D	C	F	D	E
Approach Delay (s)		49.0			45.5			170.8			123.4	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM Average Control Delay	83.2	HCM Level of Service	F
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	263	253	69	504	577	129
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	277	266	73	531	607	136
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)		1				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1284	608	608			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1284	608	608			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	46	92			
cM capacity (veh/h)	168	495	964			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	543	603	607	136
Volume Left	277	73	0	0
Volume Right	266	0	0	136
cSH	251	964	1700	1700
Volume to Capacity	2.16	0.08	0.36	0.08
Queue Length 95th (ft)	1035	6	0	0
Control Delay (s)	567.2	2.0	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	567.2	2.0	0.0	
Approach LOS	F			

Intersection Summary			
Average Delay	163.7		
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

MOVEMENT SUMMARY

Site: 402_Borland&Stafford

402_Borland&Stafford_LowBuild

Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB SW Stafford Rd.											
3	L	236	2.0	0.858	47.0	LOS E	6.7	168.6	0.91	1.29	15.5
8	T	384	1.0	0.858	46.9	LOS E	6.7	169.0	0.92	1.26	15.8
18	R	97	2.0	0.858	46.9	LOS E	6.7	169.0	0.92	1.27	15.7
Approach		717	1.5	0.858	46.9	LOS E	6.7	169.0	0.92	1.27	15.7
East: WB SW Borland Rd.											
1	L	33	7.0	0.374	11.4	LOS B	1.2	30.7	0.57	0.99	24.8
6	T	127	0.0	0.374	11.4	LOS B	1.2	30.7	0.57	0.77	26.8
16	R	65	2.0	0.374	11.4	LOS B	1.2	30.7	0.57	0.82	26.5
Approach		225	1.6	0.374	11.4	LOS B	1.2	30.7	0.57	0.82	26.4
North: SB SW Stafford Rd.											
7	L	159	0.0	0.417	10.4	LOS B	1.9	48.7	0.57	0.93	25.1
4	T	248	5.0	0.417	10.4	LOS B	1.9	48.7	0.57	0.74	27.2
14	R	207	1.0	0.417	10.4	LOS B	1.9	48.7	0.57	0.80	26.9
Approach		615	2.4	0.417	10.4	LOS B	1.9	48.7	0.57	0.81	26.5
West: EB SW Borland Rd.											
5	L	252	0.0	1.017	58.5	LOS F	24.2	608.2	1.00	1.68	13.9
2	T	579	1.0	1.017	58.5	LOS F	24.2	608.2	1.00	1.68	13.9
12	R	187	1.0	0.236	7.1	LOS A	0.7	18.1	0.42	0.71	28.7
Approach		1018	0.8	1.017	49.0	LOS E	24.2	608.2	0.89	1.50	15.3
All Vehicles		2575	1.4	1.017	35.9	LOS E	24.2	608.2	0.79	1.21	17.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used.

SIDRA INTERSECTION

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	96	307	648	231	653	596
Ideal Flow (vphpl)	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	0.97	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1662	1414	1663		1614	1733
Flt Permitted	0.95	1.00	1.00		0.24	1.00
Satd. Flow (perm)	1662	1414	1663		400	1733
Peak-hour factor, PHF	0.90	0.90	0.95	0.95	0.95	0.95
Adj. Flow (vph)	107	341	682	243	687	627
RTOR Reduction (vph)	0	265	13	0	0	0
Lane Group Flow (vph)	107	76	912	0	687	627
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	2%	2%	0%	3%	1%
Turn Type		Perm			Perm	
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	10.4	10.4	56.9		56.9	56.9
Effective Green, g (s)	10.4	10.4	56.9		56.9	56.9
Actuated g/C Ratio	0.14	0.14	0.76		0.76	0.76
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	230	195	1257		302	1310
v/s Ratio Prot	c0.06		0.55			0.36
v/s Ratio Perm		0.05			c1.72	
v/c Ratio	0.47	0.39	0.73		2.27	0.48
Uniform Delay, d1	29.9	29.5	5.0		9.2	3.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	1.3	2.1		584.1	0.3
Delay (s)	31.4	30.8	7.1		593.3	3.8
Level of Service	C	C	A		F	A
Approach Delay (s)	31.0		7.1			312.0
Approach LOS	C		A			F

Intersection Summary			
HCM Average Control Delay	160.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.99		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	313	476	274	390	240	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	344	523	301	429	264	111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		1				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1350	319	375			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1350	319	375			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	28	74			
cM capacity (veh/h)	125	724	1178			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	867	301	429	375
Volume Left	344	301	0	0
Volume Right	523	0	0	111
cSH	250	1178	1700	1700
Volume to Capacity	3.47	0.26	0.25	0.22
Queue Length 95th (ft)	Err	26	0	0
Control Delay (s)	Err	9.1	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	Err	3.8		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	4398.9			
Intersection Capacity Utilization	65.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	378	175	217	408	49
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.95	0.95
Hourly flow rate (vph)	34	430	199	247	429	52
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	1100	455	481			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1100	455	481			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	82	29	81			
cM capacity (veh/h)	192	609	1056			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	464	445	481
Volume Left	34	199	0
Volume Right	430	0	52
cSH	526	1056	1700
Volume to Capacity	0.88	0.19	0.28
Queue Length 95th (ft)	247	17	0
Control Delay (s)	43.9	5.2	0.0
Lane LOS	E	A	
Approach Delay (s)	43.9	5.2	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	16.3		
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	306	476	75	190	172	40
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)	333	517	82	207	187	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						1
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			333		961	591
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			333		961	591
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		30	91
cM capacity (veh/h)			1216		266	507

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	850	82	207	230
Volume Left	0	82	0	187
Volume Right	517	0	0	43
cSH	1700	1216	1700	305
Volume to Capacity	0.50	0.07	0.12	0.76
Queue Length 95th (ft)	0	5	0	144
Control Delay (s)	0.0	8.2	0.0	45.9
Lane LOS		A		E
Approach Delay (s)	0.0	2.3		45.9
Approach LOS				E

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	74.0%	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)	23	809	59	8	401	105	101	63	72	477	64	35
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.92		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	3224		1662	1637		1622	1610		1646	1598	
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00		0.66	1.00	
Satd. Flow (perm)	1662	3224		1662	1637		1178	1610		1149	1598	
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)	24	852	62	8	422	111	106	66	76	502	67	37
RTOR Reduction (vph)	0	4	0	0	7	0	0	31	0	0	15	0
Lane Group Flow (vph)	24	910	0	8	526	0	106	111	0	502	89	0
Confl. Peds. (#/hr)	2					2	2					2
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	0%	2%	3%	0%	3%	3%	2%	0%	0%	1%	2%	4%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	3	8		7	4			6			2	
Permitted Phases							6			2		
Actuated Green, G (s)	4.4	45.0		0.8	41.4		55.3	55.3		55.3	55.3	
Effective Green, g (s)	4.4	45.0		0.8	41.4		55.3	55.3		55.3	55.3	
Actuated g/C Ratio	0.04	0.38		0.01	0.35		0.47	0.47		0.47	0.47	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.8		2.5	4.8		2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	62	1239		11	579		556	760		543	755	
v/s Ratio Prot	c0.01	c0.28		0.00	c0.32			0.07			0.06	
v/s Ratio Perm							0.09			c0.44		
v/c Ratio	0.39	0.73		0.73	0.91		0.19	0.15		0.92	0.12	
Uniform Delay, d1	55.0	30.9		58.0	36.0		17.9	17.5		28.9	17.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	2.7		118.2	18.8		0.1	0.1		21.6	0.1	
Delay (s)	57.9	33.6		176.3	54.9		18.0	17.6		50.6	17.3	
Level of Service	E	C		F	D		B	B		D	B	
Approach Delay (s)		34.3			56.7			17.8			44.9	
Approach LOS		C			E			B			D	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	212	28	656	800	14	302
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		5.5	5.5		5.5
Lane Util. Factor	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	0.98		1.00	0.85		1.00
Flt Protected	0.96		1.00	1.00		1.00
Satd. Flow (prot)	1593		1733	1458		1713
Flt Permitted	0.96		1.00	1.00		0.97
Satd. Flow (perm)	1593		1733	1458		1659
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	226	30	698	851	15	321
RTOR Reduction (vph)	5	0	0	309	0	0
Lane Group Flow (vph)	251	0	698	542	0	336
Confl. Bikes (#/hr)			1			
Heavy Vehicles (%)	4%	0%	1%	2%	0%	2%
Turn Type				Perm	Perm	
Protected Phases	4		6			2
Permitted Phases				6	2	
Actuated Green, G (s)	14.1		34.0	34.0		34.0
Effective Green, g (s)	14.1		34.0	34.0		34.0
Actuated g/C Ratio	0.24		0.59	0.59		0.59
Clearance Time (s)	4.5		5.5	5.5		5.5
Vehicle Extension (s)	2.5		3.0	3.0		3.0
Lane Grp Cap (vph)	387		1014	853		971
v/s Ratio Prot	c0.16		c0.40			
v/s Ratio Perm				0.37		0.20
v/c Ratio	0.65		0.69	0.64		0.35
Uniform Delay, d1	19.8		8.4	8.0		6.3
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	3.3		2.0	1.6		0.2
Delay (s)	23.1		10.3	9.5		6.5
Level of Service	C		B	A		A
Approach Delay (s)	23.1		9.9			6.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	642	26	39	276	1	32	0	138	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	669	27	41	288	1	33	0	144	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	289			696			1060	1058	682	1202	1071	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	289			696			1060	1058	682	1202	1071	288
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			95			83	100	68	100	100	100
cM capacity (veh/h)	1285			873			195	215	448	107	212	567

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	699	329	177	2
Volume Left	3	41	33	0
Volume Right	27	1	144	2
cSH	1285	873	360	567
Volume to Capacity	0.00	0.05	0.49	0.00
Queue Length 95th (ft)	0	4	65	0
Control Delay (s)	0.1	1.6	24.3	11.4
Lane LOS	A	A	C	B
Approach Delay (s)	0.1	1.6	24.3	11.4
Approach LOS			C	B

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	72.2%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	69	746	220	104	41	16
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	73	785	232	109	43	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	624	52	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	624	52	60			
tC, single (s)	6.6	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.3	2.2			
p0 queue free %	80	23	85			
cM capacity (veh/h)	358	1013	1537			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	858	341	60
Volume Left	73	232	0
Volume Right	785	0	17
cSH	1107	1537	1700
Volume to Capacity	0.77	0.15	0.04
Queue Length 95th (ft)	204	13	0
Control Delay (s)	19.4	5.7	0.0
Lane LOS	C	A	
Approach Delay (s)	19.4	5.7	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	761	6	117	697	271	6	92	102	562	218	47
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		6.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
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	1.00	0.85	1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.97	
Satd. Flow (prot)	1662	3260	1488	1646	3292	1458		1566			1659	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.67	
Satd. Flow (perm)	1662	3260	1488	1646	3292	1458		1533			1154	
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)	12	793	6	122	726	282	6	96	106	585	227	49
RTOR Reduction (vph)	0	0	2	0	0	191	0	27	0	0	2	0
Lane Group Flow (vph)	12	793	4	122	726	91	0	181	0	0	859	0
Confl. Bikes (#/hr)				1								
Heavy Vehicles (%)	0%	2%	0%	1%	1%	2%	0%	3%	5%	1%	2%	0%
Turn Type	Prot		Prot	Prot		Prot	Perm			Perm		
Protected Phases	1	6	6	5	2	2		4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.6	33.0	33.0	9.0	40.4	40.4		85.0			86.0	
Effective Green, g (s)	1.6	33.0	33.0	9.0	40.4	40.4		85.0			86.0	
Actuated g/C Ratio	0.01	0.23	0.23	0.06	0.28	0.28		0.59			0.60	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		6.0			5.0	
Vehicle Extension (s)	2.3	4.8	4.8	2.3	4.8	4.8		2.5			2.5	
Lane Grp Cap (vph)	18	747	341	103	924	409		905			689	
v/s Ratio Prot	0.01	c0.24	0.00	c0.07	0.22	0.06						
v/s Ratio Perm								0.12			c0.74	
v/c Ratio	0.67	1.06	0.01	1.18	0.79	0.22		0.20			1.25	
Uniform Delay, d1	70.9	55.5	42.9	67.5	47.8	39.7		13.7			29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	58.2	50.5	0.0	146.6	5.1	0.5		0.1			123.2	
Delay (s)	129.1	106.0	42.9	214.1	52.9	40.3		13.8			152.2	
Level of Service	F	F	D	F	D	D		B			F	
Approach Delay (s)		105.9			67.1			13.8			152.2	
Approach LOS		F			E			B			F	

Intersection Summary			
HCM Average Control Delay	98.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	144.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.9%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	39	192	51	195	72	7	31	82	166	17	62	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.91	0.95	0.95	0.95
Hourly flow rate (vph)	41	202	54	205	76	7	34	90	182	18	65	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	297	288	307	100
Volume Left (vph)	41	205	34	18
Volume Right (vph)	54	7	182	17
Hadj (s)	-0.04	0.17	-0.30	-0.02
Departure Headway (s)	5.6	5.8	5.5	6.2
Degree Utilization, x	0.46	0.46	0.47	0.17
Capacity (veh/h)	600	581	602	487
Control Delay (s)	13.2	13.7	13.1	10.4
Approach Delay (s)	13.2	13.7	13.1	10.4
Approach LOS	B	B	B	B

Intersection Summary				
Delay		13.0		
HCM Level of Service		B		
Intersection Capacity Utilization		63.9%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	331	7	16	319	52	5	34	20	94	55	62
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.91	0.91	0.91	0.95	0.95	0.95
Hourly flow rate (vph)	15	348	7	17	336	55	5	37	22	99	58	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									1			1
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	336			348			840	751	352	808	775	363
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	336			348			840	751	352	808	775	363
tC, single (s)	4.1			4.2			7.1	6.5	6.3	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.4	3.6	4.0	3.3
p0 queue free %	99			99			97	89	97	61	82	90
cM capacity (veh/h)	1235			1173			219	328	676	252	320	686

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	371	407	65	222
Volume Left	15	17	5	99
Volume Right	7	55	22	65
cSH	1235	1173	476	363
Volume to Capacity	0.01	0.01	0.14	0.61
Queue Length 95th (ft)	1	1	12	97
Control Delay (s)	0.4	0.5	15.6	29.4
Lane LOS	A	A	C	D
Approach Delay (s)	0.4	0.5	15.6	29.4
Approach LOS			C	D

Intersection Summary				
Average Delay	7.4			
Intersection Capacity Utilization	50.5%	ICU Level of Service	A	
Analysis Period (min)	15			

MOVEMENT SUMMARY

Site: 414_Mulino&13th

414_Mulino&13th_LowBuild

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB S. Mulino Rd.											
3	L	20	0.0	0.046	0.0	LOS A	0.0	0.0	0.00	1.03	31.5
8	T	60	0.0	0.046	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
Approach		80	0.0	0.046	0.0	NA	0.0	0.0	0.00	0.26	37.5
North: SB S Mulino Rd.											
4	T	143	6.0	0.115	7.5	LOS A	0.6	14.6	0.09	0.92	26.0
14	R	43	5.0	0.115	7.5	LOS A	0.6	14.6	0.09	0.93	25.8
Approach		187	5.8	0.115	7.5	LOS A	0.6	14.6	0.09	0.92	26.0
West: EB SE 13th Ave.											
5	L	24	5.0	0.080	9.7	LOS A	0.4	10.0	0.35	0.84	25.1
12	R	44	0.0	0.080	9.7	LOS A	0.4	10.0	0.35	0.85	25.1
Approach		67	1.8	0.080	9.7	LOS A	0.4	10.0	0.35	0.85	25.1
All Vehicles		334	3.6	0.115	6.1	NA	0.6	14.6	0.12	0.75	27.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
HCM Delay Model used.

MOVEMENT SUMMARY

Site: 415_99E&SouthEnd

99E&SouthEnd_LowBuild

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB 99E											
8	T	718	2.0	0.418	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
18	R	316	1.0	0.214	0.0	LOS A	0.0	0.0	0.00	0.69	31.7
Approach		1034	1.7	0.418	0.0	NA	0.0	0.0	0.00	0.21	37.0
East: WB South End Rd.											
1	L	249	0.0	1.068	123.2	LOS F	17.1	428.2	1.00	1.91	8.1
16	R	12	0.0	0.040	18.0	LOS C	0.2	3.8	0.74	0.97	22.0
Approach		261	0.0	1.068	118.5	LOS F	17.1	428.2	0.99	1.86	8.4
North: SB 99E											
7	L	15	10.0	0.027	6.6	LOS A	0.1	2.6	0.63	0.81	27.4
4	T	1282	3.0	0.755	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
Approach		1297	3.1	0.755	0.1	NA	0.1	2.6	0.01	0.01	39.8
All Vehicles		2592	2.2	1.068	12.0	NA	17.1	428.2	0.10	0.28	28.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

HCM Delay Model used.

SIDRA INTERSECTION

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	127	186	585	126	152	1362
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	134	196	616	133	160	1434
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	2369	616			616	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2369	616			616	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	0	60			84	
cM capacity (veh/h)	29	491			974	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	134	196	616	133	160	1434
Volume Left	134	0	0	0	160	0
Volume Right	0	196	0	133	0	0
cSH	29	491	1700	1700	974	1700
Volume to Capacity	4.54	0.40	0.36	0.08	0.16	0.84
Queue Length 95th (ft)	Err	47	0	0	15	0
Control Delay (s)	Err	17.1	0.0	0.0	9.4	0.0
Lane LOS	F	C			A	
Approach Delay (s)	4067.3		0.0		0.9	
Approach LOS	F					

Intersection Summary			
Average Delay	502.2		
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	83	44	35	131	201	66	306	21	343	607	91
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	6.0		4.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
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	0.85		1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1710	1488		1679	1417	1662	1686		1646	1696	
Flt Permitted		0.95	1.00		0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1641	1488		1547	1417	1662	1686		1646	1696	
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)	11	86	46	36	136	209	69	319	22	357	632	95
RTOR Reduction (vph)	0	0	31	0	0	103	0	3	0	0	5	0
Lane Group Flow (vph)	0	97	15	0	172	106	69	338	0	357	722	0
Confl. Bikes (#/hr)	1							1				1
Heavy Vehicles (%)	0%	2%	0%	0%	4%	5%	0%	3%	0%	1%	1%	0%
Turn Type	Perm		pt+ov	Perm		pt+ov	Prot			Prot		
Protected Phases		4	4 5		8	8 1	5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.4	25.2		13.4	39.1	6.8	28.0		20.7	41.9	
Effective Green, g (s)		13.4	25.2		13.4	39.1	6.8	28.0		20.7	41.9	
Actuated g/C Ratio		0.17	0.33		0.17	0.51	0.09	0.36		0.27	0.54	
Clearance Time (s)		5.0			5.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5		2.5	3.0		2.5	3.0	
Lane Grp Cap (vph)		285	486		269	719	147	612		442	922	
v/s Ratio Prot			0.01			0.07	0.04	0.20		c0.22	c0.43	
v/s Ratio Perm		0.06			c0.11							
v/c Ratio		0.34	0.03		0.64	0.15	0.47	0.55		0.81	0.78	
Uniform Delay, d1		28.0	17.6		29.6	10.1	33.4	19.6		26.3	14.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5	0.0		4.3	0.1	1.7	1.1		10.1	4.4	
Delay (s)		28.5	17.7		33.9	10.2	35.2	20.6		36.4	18.4	
Level of Service		C	B		C	B	D	C		D	B	
Approach Delay (s)		25.0			20.9			23.1			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	162	22	61	59	52	29	523	42	179	1093	139
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.2			5.2	5.2	4.5	6.0	6.0	4.5	6.0	6.0
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1690			1666	1488	1662	1683	1365	1662	1699	1488
Flt Permitted		0.75			0.62	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1284			1061	1488	1662	1683	1365	1662	1699	1488
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	110	178	24	67	65	57	31	551	44	188	1151	146
RTOR Reduction (vph)	0	2	0	0	0	31	0	0	10	0	0	16
Lane Group Flow (vph)	0	310	0	0	132	26	31	551	34	188	1151	130
Heavy Vehicles (%)	2%	0%	0%	0%	5%	0%	0%	4%	9%	0%	3%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			2
Actuated Green, G (s)		36.7			36.7	36.7	3.2	75.3	75.3	21.0	93.1	93.1
Effective Green, g (s)		36.7			36.7	36.7	3.2	75.3	75.3	21.0	93.1	93.1
Actuated g/C Ratio		0.25			0.25	0.25	0.02	0.51	0.51	0.14	0.63	0.63
Clearance Time (s)		5.2			5.2	5.2	4.5	6.0	6.0	4.5	6.0	6.0
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.8	4.8	2.3	4.8	4.8
Lane Grp Cap (vph)		317			262	367	36	852	691	235	1064	932
v/s Ratio Prot							0.02	0.33		c0.11	c0.68	
v/s Ratio Perm		c0.24			0.12	0.02			0.03			0.09
v/c Ratio		0.98			0.50	0.07	0.86	0.65	0.05	0.80	1.08	0.14
Uniform Delay, d1		55.6			48.2	42.9	72.5	26.9	18.6	61.8	27.8	11.4
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		43.9			1.1	0.1	94.1	2.2	0.1	16.8	52.5	0.1
Delay (s)		99.5			49.3	43.0	166.6	29.2	18.6	78.6	80.3	11.5
Level of Service		F			D	D	F	C	B	E	F	B
Approach Delay (s)		99.5			47.4			35.2			73.3	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM Average Control Delay	65.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	148.7	Sum of lost time (s)	15.7
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

MOVEMENT SUMMARY

Site: 419_Leland and Beavercreek Rd.

419_Beavercreek/Leland_LowBuild

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB S.Karmath Rd.											
3	L	44	8.0	0.550	27.1	LOS D	3.5	89.8	0.79	1.15	19.2
8	T	78	3.0	0.550	27.1	LOS D	3.5	89.8	0.79	1.15	19.2
18	R	71	0.0	0.550	27.1	LOS D	3.5	89.8	0.79	1.17	19.2
Approach		193	3.0	0.550	27.1	LOS D	3.5	89.8	0.79	1.16	19.2
East: WB S. Beavercreek Rd.											
1	L	21	12.0	0.189	8.7	LOS A	0.9	22.6	0.20	1.01	25.5
6	T	55	3.0	0.189	8.7	LOS A	0.9	22.6	0.20	0.98	25.6
16	R	154	4.0	0.189	8.7	LOS A	0.9	22.6	0.20	0.88	25.4
Approach		229	4.5	0.189	8.7	LOS A	0.9	22.6	0.20	0.91	25.4
North: SB S. Beavercreek Rd.											
7	L	304	2.0	0.307	0.0	LOS A	0.0	0.0	0.00	0.80	31.5
4	T	136	2.0	0.307	0.0	LOS A	0.0	0.0	0.00	0.00	40.0
14	R	61	2.0	0.307	0.0	LOS A	0.0	0.0	0.00	0.75	31.7
Approach		501	2.0	0.307	0.0	NA	0.0	0.0	0.00	0.58	33.5
West: EB S. Leland Rd.											
5	L	60	5.0	0.328	9.8	LOS A	1.7	43.6	0.45	0.95	25.2
2	T	228	3.0	0.328	9.8	LOS A	1.7	43.6	0.45	0.93	25.2
12	R	77	10.0	0.328	9.8	LOS A	1.7	43.6	0.45	0.80	25.1
Approach		365	4.8	0.328	9.8	LOS A	1.7	43.6	0.45	0.91	25.2
All Vehicles		1288	3.4	0.550	8.4	NA	3.5	89.8	0.28	0.82	26.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
HCM Delay Model used.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	59	0	30	50	14	19	494	12	25	933	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	63	0	32	53	15	20	520	13	26	982	13
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	1621	1595	982	1626	1595	520	982			520		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1621	1595	982	1626	1595	520	982			520		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	39	100	22	48	97	97			98		
cM capacity (veh/h)	40	102	305	41	102	560	711			1056		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	77	100	20	520	13	26	982	13
Volume Left	14	32	20	0	0	26	0	0
Volume Right	0	15	0	0	13	0	0	13
cSH	80	75	711	1700	1700	1056	1700	1700
Volume to Capacity	0.96	1.33	0.03	0.31	0.01	0.02	0.58	0.01
Queue Length 95th (ft)	129	197	2	0	0	2	0	0
Control Delay (s)	179.8	311.5	10.2	0.0	0.0	8.5	0.0	0.0
Lane LOS	F	F	B			A		
Approach Delay (s)	179.8	311.5	0.4			0.2		
Approach LOS	F	F						

Intersection Summary				
Average Delay	25.9			
Intersection Capacity Utilization	69.5%	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 (veh/h)	36	0	204	4	0	1	74	520	5	1	886	41
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	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	39	0	222	4	0	1	78	547	5	1	933	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1639	1643	933	1641	1684	550	976			553		
vC1, stage 1 conf vol	935	935		706	706							
vC2, stage 2 conf vol	704	708		935	978							
vCu, unblocked vol	1639	1643	933	1641	1684	550	976			553		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	100	31	81	100	100	89			100		
cM capacity (veh/h)	250	268	323	23	220	539	707			1028		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	261	5	78	553	934	43
Volume Left	39	4	78	0	1	0
Volume Right	222	1	0	5	0	43
cSH	309	29	707	1700	1028	1700
Volume to Capacity	0.84	0.19	0.11	0.33	0.00	0.03
Queue Length 95th (ft)	183	15	9	0	0	0
Control Delay (s)	56.6	157.8	10.7	0.0	0.0	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	56.6	157.8	1.3		0.0	
Approach LOS	F	F				

Intersection Summary				
Average Delay	8.8			
Intersection Capacity Utilization	88.6%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	73	109	483	185	198	867
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	77	115	508	195	208	913
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			TWLTL
Median storage veh)						2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1838	508			508	
vC1, stage 1 conf vol	508					
vC2, stage 2 conf vol	1329					
vCu, unblocked vol	1838	508			508	
tC, single (s)	6.5	6.3			4.2	
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4			2.3	
p0 queue free %	57	79			80	
cM capacity (veh/h)	179	553			1036	

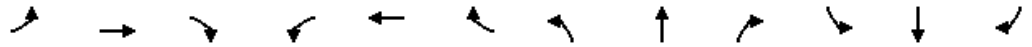
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	192	508	195	208	913
Volume Left	77	0	0	208	0
Volume Right	115	0	195	0	0
cSH	301	1700	1700	1036	1700
Volume to Capacity	0.64	0.30	0.11	0.20	0.54
Queue Length 95th (ft)	102	0	0	19	0
Control Delay (s)	35.8	0.0	0.0	9.3	0.0
Lane LOS	E			A	
Approach Delay (s)	35.8	0.0		1.7	
Approach LOS	E				

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	67.9%	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 (veh/h)	43	0	104	0	0	0	52	447	0	0	638	52
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	46	0	112	0	0	0	55	471	0	0	672	55
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1252	1252	672	1252	1252	471	672			471		
vC1, stage 1 conf vol	672	672		580	580							
vC2, stage 2 conf vol	580	580		672	672							
vCu, unblocked vol	1252	1252	672	1252	1252	471	672			471		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	76	100	100	100	94			100		
cM capacity (veh/h)	347	356	460	255	335	597	929			1102		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	158	0	55	471	672	55
Volume Left	46	0	55	0	0	0
Volume Right	112	0	0	0	0	55
cSH	420	1700	929	1700	1102	1700
Volume to Capacity	0.38	0.00	0.06	0.28	0.00	0.03
Queue Length 95th (ft)	43	0	5	0	0	0
Control Delay (s)	18.7	0.0	9.1	0.0	0.0	0.0
Lane LOS	C	A	A			
Approach Delay (s)	18.7	0.0	1.0		0.0	
Approach LOS	C	A				

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	309	22	36	340	30	45	93	60	118	170	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	11	340	24	40	374	33	49	102	66	130	187	44

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	375	446	218	360
Volume Left (vph)	11	40	49	130
Volume Right (vph)	24	33	66	44
Hadj (s)	0.03	0.12	-0.08	0.02
Departure Headway (s)	8.0	7.8	8.7	8.1
Degree Utilization, x	0.83	0.97	0.53	0.81
Capacity (veh/h)	439	446	384	437
Control Delay (s)	39.9	63.3	21.0	37.9
Approach Delay (s)	39.9	63.3	21.0	37.9
Approach LOS	E	F	C	E

Intersection Summary			
Delay	43.9		
HCM Level of Service	E		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	315	530	288	216	134	319
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	346	582	316	237	147	351
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			929		1508	638
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			929		1508	638
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			57		0	27
cM capacity (veh/h)			736		77	478

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	929	554	498
Volume Left	0	316	147
Volume Right	582	0	351
cSH	1700	736	187
Volume to Capacity	0.55	0.43	2.66
Queue Length 95th (ft)	0	54	1078
Control Delay (s)	0.0	10.6	798.9
Lane LOS		B	F
Approach Delay (s)	0.0	10.6	798.9
Approach LOS			F

Intersection Summary			
Average Delay	203.8		
Intersection Capacity Utilization	122.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	56	563	398	15	73	110
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	58	586	415	16	76	115
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	430				1126	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430				1126	422
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	95				64	82
cM capacity (veh/h)	1140				211	627

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	645	430	191
Volume Left	58	0	76
Volume Right	0	16	115
cSH	1140	1700	351
Volume to Capacity	0.05	0.25	0.54
Queue Length 95th (ft)	4	0	77
Control Delay (s)	1.3	0.0	26.8
Lane LOS	A		D
Approach Delay (s)	1.3	0.0	26.8
Approach LOS			D

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	615	808	815	74	67	741
Ideal Flow (vphpl)	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	1.00	1.00
Frpb, ped/bikes	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
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)	1630	1716	1716	1458	1662	1458
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1630	1716	1716	1458	1662	1458
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.90	0.90
Adj. Flow (vph)	647	851	858	78	74	823
RTOR Reduction (vph)	0	0	0	19	0	31
Lane Group Flow (vph)	647	851	858	59	74	792
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	Prot			Perm		pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	16.0	52.0	32.0	32.0	20.0	40.0
Effective Green, g (s)	16.0	52.0	32.0	32.0	20.0	40.0
Actuated g/C Ratio	0.20	0.65	0.40	0.40	0.25	0.50
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.3	6.0	4.2	4.2	2.3	
Lane Grp Cap (vph)	326	1115	686	583	416	729
v/s Ratio Prot	c0.40	0.50	c0.50		0.04	c0.54
v/s Ratio Perm				0.04		
v/c Ratio	1.98	0.76	1.25	0.10	0.18	1.09
Uniform Delay, d1	32.0	9.7	24.0	15.0	23.5	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	454.0	5.0	124.7	0.3	0.1	59.3
Delay (s)	486.0	14.7	148.7	15.4	23.7	79.3
Level of Service	F	B	F	B	C	E
Approach Delay (s)		218.2	137.6		74.7	
Approach LOS		F	F		E	

Intersection Summary			
HCM Average Control Delay	156.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	263	604	291	87	229	125
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	277	636	306	92	241	132
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	398				1496	306
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398				1496	306
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	76				0	82
cM capacity (veh/h)	1172				104	738

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	277	636	306	92	373
Volume Left	277	0	0	0	241
Volume Right	0	0	0	92	132
cSH	1172	1700	1700	1700	149
Volume to Capacity	0.24	0.37	0.18	0.05	2.50
Queue Length 95th (ft)	23	0	0	0	807
Control Delay (s)	9.0	0.0	0.0	0.0	742.6
Lane LOS	A				F
Approach Delay (s)	2.7		0.0		742.6
Approach LOS					F

Intersection Summary			
Average Delay	165.9		
Intersection Capacity Utilization	64.5%	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 (veh/h)	0	1	2	122	1	132	7	349	197	302	715	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1	2	128	1	139	7	367	207	318	753	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			1			1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1841	1771	753	1772	1771	367	753			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1841	1771	753	1772	1771	367	753			367		
tC, single (s)	7.1	6.5	6.7	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.8	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	98	99	0	98	79	99			73		
cM capacity (veh/h)	36	61	341	50	61	658	866			1180		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	3	268	7	367	207	318	753	1
Volume Left	0	128	7	0	0	318	0	0
Volume Right	2	139	0	0	207	0	0	1
cSH	183	97	866	1700	1700	1180	1700	1700
Volume to Capacity	0.02	2.78	0.01	0.22	0.12	0.27	0.44	0.00
Queue Length 95th (ft)	1	636	1	0	0	27	0	0
Control Delay (s)	32.1	895.8	9.2	0.0	0.0	9.2	0.0	0.0
Lane LOS	D	F	A			A		
Approach Delay (s)	32.1	895.8	0.1			2.7		
Approach LOS	D	F						

Intersection Summary				
Average Delay	126.5			
Intersection Capacity Utilization	68.3%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	472	29	13	712	16	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.94	0.94
Hourly flow rate (vph)	497	31	14	749	17	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			527		899	248
vC1, stage 1 conf vol					497	
vC2, stage 2 conf vol					402	
vCu, unblocked vol			527		899	248
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	97
cM capacity (veh/h)			1050		487	758

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	248	248	31	14	375	375	36
Volume Left	0	0	0	14	0	0	17
Volume Right	0	0	31	0	0	0	19
cSH	1700	1700	1700	1050	1700	1700	600
Volume to Capacity	0.15	0.15	0.02	0.01	0.22	0.22	0.06
Queue Length 95th (ft)	0	0	0	1	0	0	5
Control Delay (s)	0.0	0.0	0.0	8.5	0.0	0.0	11.4
Lane LOS				A			B
Approach Delay (s)	0.0			0.2			11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	31.4%	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 (veh/h)	30	270	0	0	524	13	0	0	0	2	0	89
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	284	0	0	552	14	0	0	0	2	0	97
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	565			284			996	913	142	764	906	558
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	565			284			996	913	142	764	906	558
tC, single (s)	4.3			4.1			7.5	6.5	6.9	7.5	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	99	100	79
cM capacity (veh/h)	962			1290			156	267	886	289	269	468

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	32	189	95	0	565	0	0	99
Volume Left	32	0	0	0	0	0	0	2
Volume Right	0	0	0	0	14	0	0	97
cSH	962	1700	1700	1700	1700	1700	1700	461
Volume to Capacity	0.03	0.11	0.06	0.00	0.33	0.00	0.00	0.21
Queue Length 95th (ft)	3	0	0	0	0	0	0	20
Control Delay (s)	8.9	0.0	0.0	0.0	0.0	0.0	0.0	14.9
Lane LOS	A					A	A	B
Approach Delay (s)	0.9			0.0		0.0		14.9
Approach LOS						A		B

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	16	253	495	94	27	41
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.87	0.87
Hourly flow rate (vph)	17	266	521	99	31	47
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	521				688	521
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	521				688	521
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	91
cM capacity (veh/h)	1056				370	498

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	17	133	133	521	99	31	47
Volume Left	17	0	0	0	0	31	0
Volume Right	0	0	0	0	99	0	47
cSH	1056	1700	1700	1700	1700	370	498
Volume to Capacity	0.02	0.08	0.08	0.31	0.06	0.08	0.09
Queue Length 95th (ft)	1	0	0	0	0	7	8
Control Delay (s)	8.5	0.0	0.0	0.0	0.0	15.6	13.0
Lane LOS	A					C	B
Approach Delay (s)	0.5			0.0		14.0	
Approach LOS						B	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	804	2	89	1005	149	26	139	5	110	65	100
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	59	865	2	96	1081	160	28	149	5	118	70	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									3			
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)					503							
pX, platoon unblocked	0.75						0.75	0.75		0.75	0.75	0.75
vC, conflicting volume	1241			867			1858	2416	433	1977	2337	620
vC1, stage 1 conf vol							984	984		1352	1352	
vC2, stage 2 conf vol							874	1432		625	985	
vCu, unblocked vol	662			867			1483	2224	433	1641	2119	0
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			87			85	0	99	0	56	87
cM capacity (veh/h)	704			748			182	146	571	91	158	821

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	59	576	290	96	720	520	183	188	108
Volume Left	59	0	0	96	0	0	28	118	0
Volume Right	0	0	2	0	0	160	5	0	108
cSH	704	1700	1700	748	1700	1700	155	108	821
Volume to Capacity	0.08	0.34	0.17	0.13	0.42	0.31	1.18	1.74	0.13
Queue Length 95th (ft)	7	0	0	11	0	0	255	370	11
Control Delay (s)	10.6	0.0	0.0	10.5	0.0	0.0	186.5	437.9	10.0
Lane LOS	B			B			F	F	B
Approach Delay (s)	0.7			0.8			186.5	282.3	
Approach LOS							F	F	

Intersection Summary				
Average Delay	43.5			
Intersection Capacity Utilization	67.5%	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)	177	896	188	325	766	178	381	766	408	407	898	163
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	5.0	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	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	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1577	3467	3409		1770	3505	1553	3433	3539	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1577	3467	3409		1770	3505	1553	3433	3539	1615
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)	188	953	200	346	815	189	405	815	434	433	955	173
RTOR Reduction (vph)	0	0	68	0	15	0	0	0	149	0	0	71
Lane Group Flow (vph)	188	953	132	346	989	0	405	815	285	433	955	102
Confl. Peds. (#/hr)	2		1	1		2			4	4		
Confl. Bikes (#/hr)					1			2				
Heavy Vehicles (%)	2%	2%	1%	1%	3%	1%	2%	3%	2%	2%	2%	0%
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Actuated Green, G (s)	13.7	36.7	36.7	13.3	36.3		28.5	43.0	43.0	18.5	33.5	33.5
Effective Green, g (s)	13.7	36.7	36.7	13.3	36.3		28.5	43.0	43.0	18.5	33.5	33.5
Actuated g/C Ratio	0.11	0.28	0.28	0.10	0.28		0.22	0.33	0.33	0.14	0.26	0.26
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	5.0	4.5	4.5
Vehicle Extension (s)	2.3	4.3	4.3	2.3	4.3		2.3	4.3	4.3	2.3	2.3	2.3
Lane Grp Cap (vph)	187	999	445	355	952		388	1159	514	489	912	416
v/s Ratio Prot	c0.11	0.27		0.10	c0.29		c0.23	0.23		0.13	c0.27	
v/s Ratio Perm			0.08						0.18			0.06
v/c Ratio	1.01	0.95	0.30	0.97	1.04		1.04	0.70	0.56	0.89	1.05	0.25
Uniform Delay, d1	58.1	45.8	36.5	58.2	46.9		50.8	37.9	35.7	54.7	48.2	38.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.12	0.39	0.25	1.00	1.00	1.00
Incremental Delay, d2	67.2	19.3	1.7	40.6	39.7		49.4	2.4	2.9	17.0	42.9	1.4
Delay (s)	125.4	65.1	38.2	98.8	86.5		106.3	17.4	11.9	71.7	91.1	39.7
Level of Service	F	E	D	F	F		F	B	B	E	F	D
Approach Delay (s)		69.6			89.7			37.7			80.1	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	68.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	363	376	13	10	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	403	418	14	11	39
Pedestrians		1	2		7	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			191			
pX, platoon unblocked						
vC, conflicting volume	439				647	433
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	439				647	433
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	93
cM capacity (veh/h)	1125				403	573

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	140	269	432	50
Volume Left	6	0	0	11
Volume Right	0	0	14	39
cSH	1125	1700	1700	524
Volume to Capacity	0.00	0.16	0.25	0.10
Queue Length 95th (ft)	0	0	0	8
Control Delay (s)	0.4	0.0	0.0	12.6
Lane LOS	A			B
Approach Delay (s)	0.1		0.0	12.6
Approach LOS				B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	30.9%	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)	243	634	432	293	592	259	267	981	207	356	1429	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8	4.0	4.8	4.8	4.0	5.4	5.4	4.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3610	1556	1787	3610	1575	1805	3539	1569	1805	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3610	1556	1787	3610	1575	1805	3539	1569	1805	3505	1568
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)	259	674	460	312	630	276	284	1044	220	379	1520	248
RTOR Reduction (vph)	0	0	187	0	0	184	0	0	48	0	0	40
Lane Group Flow (vph)	259	674	273	312	630	92	284	1044	172	379	1520	208
Confl. Peds. (#/hr)	2		12	12		2	3		4	4		3
Confl. Bikes (#/hr)		1			1			1				
Heavy Vehicles (%)	0%	0%	1%	1%	0%	1%	0%	2%	1%	0%	3%	0%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	22.0	32.0	32.0	21.0	31.0	31.0	22.0	45.8	45.8	33.0	56.8	56.8
Effective Green, g (s)	22.0	32.0	32.0	21.0	31.0	31.0	22.0	45.8	45.8	33.0	56.8	56.8
Actuated g/C Ratio	0.15	0.21	0.21	0.14	0.21	0.21	0.15	0.31	0.31	0.22	0.38	0.38
Clearance Time (s)	4.0	4.8	4.8	4.0	4.8	4.8	4.0	5.4	5.4	4.0	5.4	5.4
Vehicle Extension (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	4.9	4.9	2.3	4.9	4.9
Lane Grp Cap (vph)	265	770	332	250	746	326	265	1081	479	397	1327	594
v/s Ratio Prot	0.14	c0.19		c0.17	0.17		c0.16	0.29		0.21	c0.43	
v/s Ratio Perm			0.18			0.06			0.11			0.13
v/c Ratio	0.98	0.88	0.82	1.25	0.84	0.28	1.07	0.97	0.36	0.95	1.15	0.35
Uniform Delay, d1	63.8	57.1	56.3	64.5	57.2	50.1	64.0	51.3	40.7	57.8	46.6	33.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.16	0.61	0.48	1.00	1.00	1.00
Incremental Delay, d2	48.4	10.7	14.5	140.4	8.5	0.3	39.7	3.5	0.2	33.3	74.8	1.6
Delay (s)	112.2	67.8	70.8	204.9	65.6	50.4	113.7	34.9	19.8	91.0	121.4	35.0
Level of Service	F	E	E	F	E	D	F	C	B	F	F	C
Approach Delay (s)		77.0			97.9			47.2			106.1	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	83.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	214	789	789	129	199	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8	4.8		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1881	1839		1805	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1881	1839		1805	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	230	848	848	139	214	267
RTOR Reduction (vph)	0	0	6	0	0	225
Lane Group Flow (vph)	230	848	981	0	214	42
Confl. Peds. (#/hr)				6	3	
Confl. Bikes (#/hr)	1		2			
Heavy Vehicles (%)	2%	1%	1%	0%	0%	2%
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	14.2	67.1	48.9		14.1	14.1
Effective Green, g (s)	14.2	67.1	48.9		14.1	14.1
Actuated g/C Ratio	0.16	0.75	0.54		0.16	0.16
Clearance Time (s)	4.0	4.8	4.8		4.0	4.0
Vehicle Extension (s)	2.5	3.0	3.0		2.5	2.5
Lane Grp Cap (vph)	279	1402	999		283	248
v/s Ratio Prot	c0.13	0.45	c0.53		c0.12	
v/s Ratio Perm						0.03
v/c Ratio	0.82	0.60	0.98		0.76	0.17
Uniform Delay, d1	36.7	5.3	20.1		36.3	32.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	17.3	1.9	24.5		10.4	0.2
Delay (s)	54.0	7.3	44.6		46.8	33.1
Level of Service	D	A	D		D	C
Approach Delay (s)		17.2	44.6		39.2	
Approach LOS		B	D		D	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	370	95	333	268	89	80	377	500	74	331	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0		5.0	5.0			6.0	6.0	5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	0.88	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99			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	0.97		1.00	0.96			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1758		1770	1784			1843	2814	1752	1767	
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1758		1770	1784			1843	2814	1752	1767	
Peak-hour factor, PHF	0.88	0.88	0.88	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	93	420	108	351	282	94	84	397	526	82	368	41
RTOR Reduction (vph)	0	5	0	0	6	0	0	0	156	0	2	0
Lane Group Flow (vph)	93	523	0	351	370	0	0	481	370	82	407	0
Confl. Peds. (#/hr)	4		1	1		4	5		4	4		5
Confl. Bikes (#/hr)								3	1			
Heavy Vehicles (%)	4%	2%	14%	2%	2%	0%	3%	2%	1%	3%	6%	0%
Turn Type	Prot			Prot			Split		pt+ov	Split		
Protected Phases	5	2		1	6		8	8	8 1	4	4	
Permitted Phases												
Actuated Green, G (s)	14.8	53.0		35.0	73.7			46.0	87.0	40.0	40.0	
Effective Green, g (s)	14.8	53.0		35.0	73.7			46.0	87.0	40.0	40.0	
Actuated g/C Ratio	0.08	0.27		0.18	0.38			0.24	0.45	0.21	0.21	
Clearance Time (s)	4.5	5.0		5.0	5.0			6.0		5.0	5.0	
Vehicle Extension (s)	2.5	4.0		2.5	4.0			2.5		2.5	2.5	
Lane Grp Cap (vph)	132	478		318	674			435	1255	359	362	
v/s Ratio Prot	0.05	c0.30		c0.20	0.21			c0.26	0.13	0.05	c0.23	
v/s Ratio Perm												
v/c Ratio	0.70	1.09		1.10	0.55			1.11	0.29	0.23	1.12	
Uniform Delay, d1	88.0	71.0		80.0	47.6			74.5	34.4	64.6	77.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.6	69.1		81.3	1.1			75.0	0.1	0.2	85.0	
Delay (s)	102.6	140.1		161.3	48.7			149.5	34.5	64.9	162.5	
Level of Service	F	F		F	D			F	C	E	F	
Approach Delay (s)		134.5			103.1			89.5			146.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	112.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	195.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	105.2%	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												
Volume (vph)	59	874	43	354	775	117	46	42	270	404	174	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98			0.90		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1719	3494		1656	3467			1615		1787	1746	
Flt Permitted	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (perm)	1719	3494		1656	3467			1615		1787	1746	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.89	0.90	0.90	0.90
Adj. Flow (vph)	62	920	45	373	816	123	51	47	303	449	193	98
RTOR Reduction (vph)	0	3	0	0	9	0	0	89	0	0	15	0
Lane Group Flow (vph)	62	962	0	373	930	0	0	312	0	449	276	0
Confl. Peds. (#/hr)	2		3	3		2			1	1		
Confl. Bikes (#/hr)		1								1		
Heavy Vehicles (%)	5%	2%	12%	9%	2%	0%	8%	12%	1%	1%	5%	0%
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	7.5	33.8		26.0	52.3			20.0		27.0	27.0	
Effective Green, g (s)	7.5	33.8		26.0	52.3			20.0		27.0	27.0	
Actuated g/C Ratio	0.06	0.27		0.21	0.42			0.16		0.21	0.21	
Clearance Time (s)	4.0	5.0		4.0	5.0			5.0		5.0	5.0	
Vehicle Extension (s)	2.5	3.0		2.5	3.0			2.5		2.5	2.5	
Lane Grp Cap (vph)	102	939		342	1441			257		384	375	
v/s Ratio Prot	0.04	c0.28		c0.23	0.27			c0.19		c0.25	0.16	
v/s Ratio Perm												
v/c Ratio	0.61	1.02		1.09	0.65			1.21		1.17	0.74	
Uniform Delay, d1	57.7	46.0		49.9	29.3			52.9		49.4	46.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	8.4	35.8		75.2	1.0			126.3		100.7	6.9	
Delay (s)	66.1	81.8		125.1	30.3			179.2		150.1	53.0	
Level of Service	E	F		F	C			F		F	D	
Approach Delay (s)		80.8			57.3			179.2			111.9	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	89.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	125.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	104.8%	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												
Volume (vph)	11	2430	154	162	1427	12	116	43	102	39	109	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5		5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	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		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.99	1.00
Satd. Flow (prot)	1703	3539	1599	1805	3539	1380		1819	1495		1875	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.53	1.00		0.72	1.00
Satd. Flow (perm)	1703	3539	1599	1805	3539	1380		996	1495		1374	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	2558	162	171	1502	13	126	47	111	42	118	41
RTOR Reduction (vph)	0	0	16	0	0	2	0	0	38	0	0	23
Lane Group Flow (vph)	12	2558	146	171	1502	11	0	173	73	0	160	18
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)											1	
Heavy Vehicles (%)	6%	2%	1%	0%	2%	17%	1%	0%	8%	0%	0%	3%
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	4.4	69.3	69.3	15.7	80.6	80.6		20.5	20.5		20.5	20.5
Effective Green, g (s)	4.4	69.3	69.3	15.7	80.6	80.6		20.5	20.5		20.5	20.5
Actuated g/C Ratio	0.04	0.58	0.58	0.13	0.67	0.67		0.17	0.17		0.17	0.17
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5		5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.5	5.0	5.0	2.5	5.0	5.0		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)	62	2044	923	236	2377	927		170	255		235	264
v/s Ratio Prot	0.01	c0.72		c0.09	0.42							
v/s Ratio Perm			0.09			0.01		c0.17	0.05		0.12	0.01
v/c Ratio	0.19	1.25	0.16	0.72	0.63	0.01		1.02	0.29		0.68	0.07
Uniform Delay, d1	56.1	25.4	11.8	50.1	11.2	6.5		49.8	43.4		46.7	41.7
Progression Factor	1.00	1.00	1.00	1.16	0.27	0.08		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	117.4	0.4	6.3	0.8	0.0		73.7	0.8		8.5	0.1
Delay (s)	57.2	142.7	12.1	64.4	3.9	0.5		123.5	44.2		55.2	41.9
Level of Service	E	F	B	E	A	A		F	D		E	D
Approach Delay (s)		134.6			10.0			92.5			52.5	
Approach LOS		F			A			F			D	

Intersection Summary			
HCM Average Control Delay	85.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	103.6%	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												
Volume (vph)	4	2138	416	470	1444	119	133	142	288	350	337	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		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)	1805	3505	1583	1736	3505	1464	1787	1683		1735	1769	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.35	1.00		0.24	1.00	
Satd. Flow (perm)	1805	3505	1583	1736	3505	1464	659	1683		444	1769	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	2251	438	495	1520	125	141	151	306	372	359	7
RTOR Reduction (vph)	0	0	78	0	0	31	0	61	0	0	1	0
Lane Group Flow (vph)	4	2251	360	495	1520	94	141	396	0	372	365	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)						1		1			2	
Heavy Vehicles (%)	0%	3%	2%	4%	3%	8%	1%	2%	0%	4%	7%	12%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	0.8	52.5	52.5	11.0	62.7	62.7	42.0	42.0		42.0	42.0	
Effective Green, g (s)	0.8	52.5	52.5	11.0	62.7	62.7	42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.01	0.44	0.44	0.09	0.52	0.52	0.35	0.35		0.35	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.3	5.0	5.0	2.3	5.0	5.0	3.0	3.0		3.5	3.5	
Lane Grp Cap (vph)	12	1533	693	159	1831	765	231	589		155	619	
v/s Ratio Prot	0.00	c0.64		c0.29	0.43			0.24			0.21	
v/s Ratio Perm			0.23			0.06	0.21			c0.84		
v/c Ratio	0.33	1.47	0.52	3.11	0.83	0.12	0.61	0.67		2.40	0.59	
Uniform Delay, d1	59.3	33.8	24.6	54.5	24.2	14.6	32.2	33.1		39.0	32.0	
Progression Factor	1.10	0.76	0.76	0.77	2.10	3.31	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	211.1	0.3	952.4	0.4	0.0	4.7	3.0		649.3	1.6	
Delay (s)	66.0	236.6	18.9	994.5	51.2	48.4	36.9	36.2		688.3	33.6	
Level of Service	E	F	B	F	D	D	D	D		F	C	
Approach Delay (s)		200.9			269.3			36.4			363.6	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	228.1	HCM Level of Service	F
HCM Volume to Capacity ratio	2.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	146.1%	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												
Volume (vph)	242	2773	51	184	2150	0	54	276	221	13	366	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	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	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1687	3505	1615	1626	3471		1805	1696	1583	3335	1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1687	3505	1615	1626	3471		1805	1696	1583	3335	1776	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	255	2919	54	194	2263	0	57	294	235	14	389	171
RTOR Reduction (vph)	0	0	7	0	0	0	0	0	88	0	0	150
Lane Group Flow (vph)	255	2919	47	194	2263	0	57	294	147	14	389	21
Confl. Peds. (#/hr)	4					4	6					6
Heavy Vehicles (%)	7%	3%	0%	11%	4%	10%	0%	12%	2%	5%	7%	2%
Turn Type	Prot		Perm	Prot		Perm	Split		Prot	Split		Prot
Protected Phases	5	2		1	6		8	8	8	4	4	4
Permitted Phases			2			6						
Actuated Green, G (s)	17.4	44.4	44.4	20.5	47.5		25.1	25.1	25.1	11.5	11.5	11.5
Effective Green, g (s)	17.4	44.4	44.4	20.5	47.5		25.1	25.1	25.1	11.5	11.5	11.5
Actuated g/C Ratio	0.14	0.37	0.37	0.17	0.40		0.21	0.21	0.21	0.10	0.10	0.10
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	245	1297	598	278	1374		378	355	331	320	170	152
v/s Ratio Prot	0.15	c0.83		0.12	c0.65		0.03	c0.17	0.09	0.00	c0.22	0.01
v/s Ratio Perm			0.03									
v/c Ratio	1.04	2.25	0.08	0.70	1.65		0.15	0.83	0.44	0.04	2.29	0.14
Uniform Delay, d1	51.3	37.8	24.5	46.8	36.2		38.7	45.4	41.4	49.3	54.2	49.7
Progression Factor	0.91	0.71	0.57	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.0	563.0	0.0	6.9	294.5		0.1	14.3	0.7	0.0	597.9	0.3
Delay (s)	75.9	589.7	14.0	53.7	330.7		38.9	59.7	42.1	49.3	652.2	50.0
Level of Service	E	F	B	D	F		D	E	D	D	F	D
Approach Delay (s)		539.4			308.8			50.6			458.1	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	408.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	128.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	375	323	514	370	254	169	1310	778	405	1826	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.0	4.0			5.4	5.4	4.0	5.4	
Lane Util. Factor	1.00	0.95		0.97	0.95			0.95	1.00	1.00	0.95	
Frt	1.00	0.93		1.00	0.94			1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3294		3467	3354			3519	1615	1787	3505	
Flt Permitted	0.11	1.00		0.95	1.00			0.48	1.00	0.95	1.00	
Satd. Flow (perm)	212	3294		3467	3354			1713	1615	1787	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.95	0.95	0.95	0.95	0.92
Adj. Flow (vph)	2	408	351	541	402	267	184	1379	819	426	1922	0
RTOR Reduction (vph)	0	20	0	0	76	0	0	0	33	0	0	0
Lane Group Flow (vph)	2	739	0	541	593	0	0	1563	786	426	1922	0
Heavy Vehicles (%)	2%	2%	2%	1%	2%	0%	2%	2%	0%	1%	3%	2%
Turn Type	Perm			Prot			Perm		Perm	Prot		
Protected Phases		4!		7!	8			6		5	2	
Permitted Phases	4						6		6			
Actuated Green, G (s)	35.2	35.2		14.0	18.0			81.6	81.6	19.0	104.6	
Effective Green, g (s)	35.2	35.2		14.0	18.0			81.6	81.6	19.0	104.6	
Actuated g/C Ratio	0.23	0.23		0.09	0.12			0.54	0.54	0.13	0.70	
Clearance Time (s)	4.8	4.8		4.0	4.0			5.4	5.4	4.0	5.4	
Vehicle Extension (s)	2.3	2.3		2.3	3.0			4.8	4.8	2.3	4.8	
Lane Grp Cap (vph)	50	773		324	402			932	879	226	2444	
v/s Ratio Prot		0.22		c0.16	c0.18					c0.24	0.55	
v/s Ratio Perm	0.01							c0.91	0.49			
v/c Ratio	0.04	0.96		1.67	1.48			2.56dl	0.89	1.88	0.79	
Uniform Delay, d1	44.3	56.6		68.0	66.0			34.2	30.4	65.5	15.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	0.74	2.14	
Incremental Delay, d2	0.2	22.0		314.7	227.3			309.4	13.5	399.8	0.2	
Delay (s)	44.5	78.6		382.7	293.3			343.6	43.9	448.5	32.8	
Level of Service	D	E		F	F			F	D	F	C	
Approach Delay (s)		78.5			333.2			240.5			108.2	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	192.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.4
Intersection Capacity Utilization	143.3%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑					↰	↰↑↑	↱
Volume (vph)	0	1370	500	451	930	0	0	0	0	435	259	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5	5.5					5.5	5.5	5.5
Lane Util. Factor		0.91	1.00	1.00	0.95					0.91	0.91	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	0.98	1.00
Satd. Flow (prot)		5136	1554	1770	3610					1626	3368	1615
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		5136	1554	1770	3610					1626	3368	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1442	526	475	979	0	0	0	0	458	273	289
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	0	133
Lane Group Flow (vph)	0	1442	427	475	979	0	0	0	0	238	493	156
Confl. Peds. (#/hr)	7		16	16		7	12					12
Confl. Bikes (#/hr)								7			1	
Heavy Vehicles (%)	0%	1%	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%
Turn Type			Perm	Prot						Split		Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			2									
Actuated Green, G (s)		40.3	40.3	32.1	77.9					21.1	21.1	21.1
Effective Green, g (s)		40.3	40.3	32.1	77.9					21.1	21.1	21.1
Actuated g/C Ratio		0.37	0.37	0.29	0.71					0.19	0.19	0.19
Clearance Time (s)		5.5	5.5	5.5	5.5					5.5	5.5	5.5
Vehicle Extension (s)		4.8	4.8	2.3	4.0					2.3	2.3	2.3
Lane Grp Cap (vph)		1882	569	517	2557					312	646	310
v/s Ratio Prot		c0.28		c0.27	0.27					0.15	c0.15	0.10
v/s Ratio Perm			0.27									
v/c Ratio		0.77	0.75	0.92	0.38					0.76	0.76	0.50
Uniform Delay, d1		30.7	30.4	37.7	6.4					42.1	42.1	39.8
Progression Factor		0.69	0.61	0.62	0.12					1.00	1.00	1.00
Incremental Delay, d2		2.7	8.0	17.0	0.3					9.9	5.0	0.7
Delay (s)		24.0	26.5	40.5	1.1					52.0	47.1	40.5
Level of Service		C	C	D	A					D	D	D
Approach Delay (s)		24.7			14.0			0.0			46.4	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	498	1393	0	0	1207	510	209	5	308	0	0	0
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	4.5	4.5	4.5			
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	0.98	0.98	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)	3502	3574			3574	1555	1676	1685	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3502	3574			3574	1555	1676	1685	1568			
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)	524	1466	0	0	1271	537	220	5	324	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	262	0	0	44	0	0	0
Lane Group Flow (vph)	524	1466	0	0	1271	275	112	113	281	0	0	0
Confl. Peds. (#/hr)	3		6	6		3	11					11
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	0%	1%	0%	0%	1%	2%	0%	0%	3%	0%	0%	0%
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	19.6	77.5			53.9	53.9	23.0	23.0	23.0			
Effective Green, g (s)	19.6	77.5			53.9	53.9	23.0	23.0	23.0			
Actuated g/C Ratio	0.18	0.70			0.49	0.49	0.21	0.21	0.21			
Clearance Time (s)	4.0	5.0			5.0	5.0	4.5	4.5	4.5			
Vehicle Extension (s)	2.3	4.0			4.8	4.8	2.3	2.3	2.3			
Lane Grp Cap (vph)	624	2518			1751	762	350	352	328			
v/s Ratio Prot	c0.15	0.41			c0.36							
v/s Ratio Perm						0.18	0.07	0.07	c0.18			
v/c Ratio	0.84	0.58			0.73	0.36	0.32	0.32	0.86			
Uniform Delay, d1	43.7	8.1			22.2	17.4	36.9	36.9	41.9			
Progression Factor	0.71	1.35			0.61	0.23	1.00	1.00	1.00			
Incremental Delay, d2	6.7	0.7			1.3	0.7	0.3	0.3	18.7			
Delay (s)	37.5	11.7			14.9	4.7	37.2	37.2	60.6			
Level of Service	D	B			B	A	D	D	E			
Approach Delay (s)		18.5			11.9			51.0			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	567	1676	199	164	884	178	189	234	91	185	276	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		5.5	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91		1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	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	1.00
Frt	1.00	0.98		1.00	0.97		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)	3502	5082		1787	3456		3467	1900	1615	1805	1881	1599
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)	3502	5082		1787	3456		3467	1900	1615	1805	1881	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	597	1764	209	173	931	187	203	252	98	199	297	182
RTOR Reduction (vph)	0	13	0	0	14	0	0	0	82	0	0	148
Lane Group Flow (vph)	597	1960	0	173	1104	0	203	252	16	199	297	34
Confl. Peds. (#/hr)			1	1			2		1	1		2
Heavy Vehicles (%)	0%	0%	2%	1%	2%	1%	1%	0%	0%	0%	1%	1%
Turn Type	Prot			Prot			Prot		Prot	Prot		Prot
Protected Phases	5	2		1	6		3	8	8	7	4	4
Permitted Phases												
Actuated Green, G (s)	21.0	44.6		15.1	38.7		9.1	18.3	18.3	12.0	20.7	20.7
Effective Green, g (s)	21.0	44.6		15.1	38.7		9.1	18.3	18.3	12.0	20.7	20.7
Actuated g/C Ratio	0.19	0.41		0.14	0.35		0.08	0.17	0.17	0.11	0.19	0.19
Clearance Time (s)	4.5	5.5		4.5	5.5		5.5	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	0.5	2.9		0.5	2.9		0.5	0.5	0.5	0.5	0.5	0.5
Lane Grp Cap (vph)	669	2061		245	1216		287	316	269	197	354	301
v/s Ratio Prot	c0.17	c0.39		0.10	0.32		0.06	0.13	0.01	c0.11	c0.16	0.02
v/s Ratio Perm												
v/c Ratio	0.89	0.95		0.71	0.91		0.71	0.80	0.06	1.01	0.84	0.11
Uniform Delay, d1	43.4	31.6		45.3	34.0		49.2	44.1	38.6	49.0	43.0	37.0
Progression Factor	1.27	1.07		1.18	0.69		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	6.2		6.6	10.4		6.4	12.3	0.0	66.8	15.2	0.1
Delay (s)	62.6	39.9		60.0	33.9		55.5	56.3	38.6	115.8	58.2	37.1
Level of Service	E	D		E	C		E	E	D	F	E	D
Approach Delay (s)		45.2			37.4			52.9			69.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	47.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1490	111	142	1192	18	159	2	127	12	6	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.8		4.8	5.1		4.8	4.8		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.85		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3532		1805	3565		1780	1530		1535	1677	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.57	1.00	
Satd. Flow (perm)	1770	3532		1805	3565		1394	1530		913	1677	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	1568	117	149	1255	19	171	2	137	13	6	15
RTOR Reduction (vph)	0	4	0	0	1	0	0	107	0	0	12	0
Lane Group Flow (vph)	29	1681	0	149	1273	0	171	32	0	13	9	0
Confl. Peds. (#/hr)	3		4	4		3	4		5	5		4
Confl. Bikes (#/hr)		2										
Heavy Vehicles (%)	2%	1%	0%	0%	1%	0%	1%	0%	4%	17%	0%	0%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	3.5	64.3		13.3	74.6		18.0	18.0		18.8	18.8	
Effective Green, g (s)	3.5	64.3		13.3	74.6		18.0	18.0		18.8	18.8	
Actuated g/C Ratio	0.03	0.58		0.12	0.68		0.16	0.16		0.17	0.17	
Clearance Time (s)	4.0	4.8		4.8	5.1		4.8	4.8		4.0	4.0	
Vehicle Extension (s)	0.5	2.9		0.5	2.9		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	56	2065		218	2418		228	250		156	287	
v/s Ratio Prot	0.02	c0.48		c0.08	0.36			0.02			0.01	
v/s Ratio Perm							c0.12			0.01		
v/c Ratio	0.52	0.81		0.68	0.53		0.75	0.13		0.08	0.03	
Uniform Delay, d1	52.4	18.1		46.3	8.9		43.9	39.3		38.4	38.0	
Progression Factor	0.87	0.72		1.50	0.25		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.3		6.0	0.7		11.6	0.1		0.1	0.0	
Delay (s)	45.9	13.4		75.7	2.9		55.4	39.4		38.4	38.0	
Level of Service	D	B		E	A		E	D		D	D	
Approach Delay (s)		14.0			10.5			48.2			38.2	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	613	0	0	926	237	253	429	579	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5			4.5	4.5	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.91	0.91	1.00			
Frpb, ped/bikes	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			
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	1.00	1.00			
Satd. Flow (prot)	3467	3610			5036	1599	1609	3378	1583			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3467	3610			5036	1599	1609	3378	1583			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	269	659	0	0	996	255	272	461	623	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	171	0	0	80	0	0	0
Lane Group Flow (vph)	269	659	0	0	996	84	237	496	543	0	0	0
Confl. Peds. (#/hr)			6	6			1					1
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	1%	0%	0%	0%	3%	1%	2%	2%	2%	0%	0%	0%
Turn Type	Prot					Prot	Perm		Prot			
Protected Phases	5	2			6	6		8	8			
Permitted Phases							8					
Actuated Green, G (s)	8.7	38.9			26.2	26.2	31.6	31.6	31.6			
Effective Green, g (s)	8.7	38.9			26.2	26.2	31.6	31.6	31.6			
Actuated g/C Ratio	0.11	0.49			0.33	0.33	0.40	0.40	0.40			
Clearance Time (s)	4.0	4.5			4.5	4.5	5.0	5.0	5.0			
Vehicle Extension (s)	2.3	4.2			4.2	4.2	2.3	2.3	2.3			
Lane Grp Cap (vph)	377	1755			1649	524	636	1334	625			
v/s Ratio Prot	c0.08	0.18			c0.20	0.05			c0.34			
v/s Ratio Perm							0.15	0.15				
v/c Ratio	0.71	0.38			0.60	0.16	0.37	0.37	0.87			
Uniform Delay, d1	34.4	12.9			22.6	19.1	17.2	17.2	22.3			
Progression Factor	0.89	1.64			1.22	2.56	1.00	1.00	1.00			
Incremental Delay, d2	5.4	0.6			1.3	0.5	0.2	0.1	12.1			
Delay (s)	35.9	21.7			28.9	49.4	17.4	17.3	34.4			
Level of Service	D	C			C	D	B	B	C			
Approach Delay (s)		25.8			33.1			25.1			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	6	68	2	5	3	54	474	1	4	541	189
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	
Frpb, ped/bikes	1.00	0.98		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	0.86		1.00	0.95		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1563		1802	1805		1769	1881		1804	1803	
Flt Permitted	0.75	1.00		0.70	1.00		0.20	1.00		0.39	1.00	
Satd. Flow (perm)	1360	1563		1332	1805		378	1881		741	1803	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	233	7	77	2	6	3	60	527	1	4	601	210
RTOR Reduction (vph)	0	56	0	0	2	0	0	0	0	0	15	0
Lane Group Flow (vph)	233	28	0	2	7	0	60	528	0	4	796	0
Confl. Peds. (#/hr)			1	1			1		1	1		1
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	5%	0%	3%	0%	0%	0%	2%	1%	0%	0%	1%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.2	16.2		16.2	16.2		36.4	36.4		36.4	36.4	
Effective Green, g (s)	16.2	16.2		16.2	16.2		36.4	36.4		36.4	36.4	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.60	0.60		0.60	0.60	
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)	364	418		356	483		227	1130		445	1083	
v/s Ratio Prot		0.02			0.00			0.28			c0.44	
v/s Ratio Perm	c0.17			0.00			0.16			0.01		
v/c Ratio	0.64	0.07		0.01	0.01		0.26	0.47		0.01	0.74	
Uniform Delay, d1	19.6	16.6		16.3	16.3		5.7	6.7		4.9	8.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.1		0.0	0.0		0.6	0.3		0.0	2.6	
Delay (s)	23.4	16.6		16.3	16.3		6.4	7.0		4.9	11.3	
Level of Service	C	B		B	B		A	A		A	B	
Approach Delay (s)		21.6			16.3			7.0			11.2	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	17	487	568	204	195	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	18	518	604	217	207	14

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	18	518	821	221
Volume Left (vph)	18	0	0	207
Volume Right (vph)	0	0	217	14
Hadj (s)	0.50	0.05	-0.13	0.20
Departure Headway (s)	6.6	6.2	5.6	7.0
Degree Utilization, x	0.03	0.89	1.28	0.43
Capacity (veh/h)	530	578	650	498
Control Delay (s)	8.6	38.4	157.4	15.3
Approach Delay (s)	37.4		157.4	15.3
Approach LOS	E		F	C

Intersection Summary			
Delay	96.7		
HCM Level of Service	F		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	88	580	624	60	106	206
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	92	604	650	62	110	215

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total (vph)	696	713	110	215
Volume Left (vph)	92	0	110	0
Volume Right (vph)	0	63	0	215
Hadj (s)	0.08	-0.03	0.50	-0.68
Departure Headway (s)	6.0	5.9	8.1	6.9
Degree Utilization, x	1.17	1.17	0.25	0.41
Capacity (veh/h)	587	612	440	517
Control Delay (s)	114.8	116.4	12.5	13.4
Approach Delay (s)	114.8	116.4	13.1	
Approach LOS	F	F	B	

Intersection Summary			
Delay	96.4		
HCM Level of Service	F		
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	376	2	334	425	5	585
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
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	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	1583	1863	1568	1719	1881
Flt Permitted	0.95	1.00	1.00	1.00	0.49	1.00
Satd. Flow (perm)	1787	1583	1863	1568	894	1881
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	418	2	371	472	6	650
RTOR Reduction (vph)	0	1	0	186	0	0
Lane Group Flow (vph)	418	1	371	286	6	650
Heavy Vehicles (%)	1%	2%	2%	3%	5%	1%
Turn Type		Perm		Perm	Perm	
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	23.5	23.5	48.4	48.4	48.4	48.4
Effective Green, g (s)	23.5	23.5	48.4	48.4	48.4	48.4
Actuated g/C Ratio	0.29	0.29	0.61	0.61	0.61	0.61
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)	526	466	1129	950	542	1139
v/s Ratio Prot	c0.23		0.20			c0.35
v/s Ratio Perm		0.00		0.18	0.01	
v/c Ratio	0.79	0.00	0.33	0.30	0.01	0.57
Uniform Delay, d1	26.0	19.9	7.8	7.6	6.3	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.0	0.8	0.8	0.0	2.1
Delay (s)	34.1	19.9	8.5	8.4	6.3	11.6
Level of Service	C	B	A	A	A	B
Approach Delay (s)	34.0		8.5			11.5
Approach LOS	C		A			B

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	480	40	125	291	363	589
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	533	44	139	323	403	654

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	533	44	139	323	403	654
Volume Left (vph)	533	0	139	0	0	0
Volume Right (vph)	0	44	0	0	0	654
Hadj (s)	0.53	-0.70	0.50	0.03	0.03	-0.67
Departure Headway (s)	8.3	7.1	8.3	7.8	7.4	6.7
Degree Utilization, x	1.23	0.09	0.32	0.70	0.83	1.22
Capacity (veh/h)	440	493	429	451	478	544
Control Delay (s)	147.1	9.6	13.9	26.0	35.9	136.2
Approach Delay (s)	136.5		22.4		97.9	
Approach LOS	F		C		F	

Intersection Summary			
Delay	91.9		
HCM Level of Service	F		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	806	164	382	536	0	0	0	903	0	0	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	4.5				4.0			5.5
Lane Util. Factor		1.00		1.00	1.00				0.88			1.00
Frpb, ped/bikes		1.00		1.00	1.00				1.00			1.00
Flpb, ped/bikes		1.00		1.00	1.00				1.00			1.00
Frt		0.98		1.00	1.00				0.85			0.86
Flt Protected		1.00		0.95	1.00				1.00			1.00
Satd. Flow (prot)		1829		1719	1810				2538			1611
Flt Permitted		1.00		0.95	1.00				1.00			1.00
Satd. Flow (perm)		1829		1719	1810				2538			1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	848	173	402	564	0	0	0	951	0	0	397
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	294
Lane Group Flow (vph)	0	1013	0	402	564	0	0	0	951	0	0	103
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)		1	1	1	2							
Heavy Vehicles (%)	0%	1%	1%	5%	5%	0%	0%	0%	12%	0%	0%	2%
Turn Type				Prot					Free			custom
Protected Phases		2		1	6							5
Permitted Phases									Free			
Actuated Green, G (s)		44.6		21.3	57.1				76.9			9.8
Effective Green, g (s)		44.6		21.3	57.1				76.9			9.8
Actuated g/C Ratio		0.58		0.28	0.74				1.00			0.13
Clearance Time (s)		5.5		5.5	4.5							5.5
Vehicle Extension (s)		2.3		2.3	4.2							2.3
Lane Grp Cap (vph)		1061		476	1344				2538			205
v/s Ratio Prot		c0.55		c0.23	0.31							0.06
v/s Ratio Perm									0.37			
v/c Ratio		0.95		0.84	0.42				0.37			0.50
Uniform Delay, d1		15.2		26.2	3.7				0.0			31.3
Progression Factor		1.00		1.00	1.00				1.00			1.00
Incremental Delay, d2		17.5		12.6	0.3				0.4			1.1
Delay (s)		32.7		38.8	4.0				0.4			32.4
Level of Service		C		D	A				A			C
Approach Delay (s)		32.7			18.5			0.4			32.4	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	286	1861	31	115	723	138	26	177	390	241	90	124
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	4.0	5.0		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
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	0.90		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1400	1703	3340		1671	1658		1770	1680	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.56	1.00		0.21	1.00	
Satd. Flow (perm)	1770	3539	1400	1703	3340		988	1658		398	1680	
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)	301	1959	33	121	761	145	27	186	411	254	95	131
RTOR Reduction (vph)	0	0	3	0	13	0	0	66	0	0	41	0
Lane Group Flow (vph)	301	1959	30	121	893	0	27	531	0	254	185	0
Confl. Peds. (#/hr)	3		3	3		3			2	2		
Heavy Vehicles (%)	2%	2%	12%	6%	5%	5%	8%	1%	2%	2%	5%	2%
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	9.0	46.0	46.0	6.0	43.0		54.5	54.5		54.5	54.5	
Effective Green, g (s)	9.0	46.0	46.0	6.0	43.0		54.5	54.5		54.5	54.5	
Actuated g/C Ratio	0.08	0.38	0.38	0.05	0.36		0.45	0.45		0.45	0.45	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		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)	133	1357	537	85	1197		449	753		181	763	
v/s Ratio Prot	c0.17	c0.55		0.07	0.27			0.32			0.11	
v/s Ratio Perm			0.02				0.03			c0.64		
v/c Ratio	2.26	1.44	0.06	1.42	0.75		0.06	0.71		1.40	0.24	
Uniform Delay, d1	55.5	37.0	23.3	57.0	33.7		18.4	26.3		32.8	20.1	
Progression Factor	1.00	1.00	1.00	0.95	0.86		1.00	1.00		1.00	1.00	
Incremental Delay, d2	591.7	203.9	0.2	243.7	4.1		0.1	3.0		211.2	0.2	
Delay (s)	647.2	240.9	23.5	298.0	33.1		18.4	29.3		244.0	20.2	
Level of Service	F	F	C	F	C		B	C		F	C	
Approach Delay (s)		291.1			64.3			28.8			138.6	
Approach LOS		F			E			C			F	

Intersection Summary			
HCM Average Control Delay	184.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	119.6%	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												
Volume (vph)	151	2340	43	0	776	1	30	1	0	4	2	179
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		4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00		0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00		1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85		1.00		1.00	0.85	
Flt Protected	0.95	1.00	1.00		1.00	1.00		0.95		0.95	1.00	
Satd. Flow (prot)	1805	3539	1538		3438	1568		1806		1803	1517	
Flt Permitted	0.95	1.00	1.00		1.00	1.00		0.46		0.74	1.00	
Satd. Flow (perm)	1805	3539	1538		3438	1568		867		1397	1517	
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)	157	2438	45	0	808	1	31	1	0	4	2	186
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	0	0	173	0
Lane Group Flow (vph)	157	2438	43	0	808	1	0	32	0	4	15	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	0%	2%	5%	14%	5%	3%	0%	9%	0%	0%	0%	5%
Turn Type	Prot		Prot	Prot		Prot	Perm		Perm	Perm		
Protected Phases	5	2	2	1	6	6		8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	15.0	102.4	102.4		83.4	83.4		8.6		8.6	8.6	
Effective Green, g (s)	15.0	102.4	102.4		83.4	83.4		8.6		8.6	8.6	
Actuated g/C Ratio	0.12	0.85	0.85		0.70	0.70		0.07		0.07	0.07	
Clearance Time (s)	4.0	5.0	5.0		5.0	5.0		4.0		4.0	4.0	
Vehicle Extension (s)	2.3	5.4	5.4		5.4	5.4		2.5		2.5	2.5	
Lane Grp Cap (vph)	226	3020	1312		2389	1090		62		100	109	
v/s Ratio Prot	0.09	c0.69	0.03		0.24	0.00					0.01	
v/s Ratio Perm								c0.04		0.00		
v/c Ratio	0.69	0.81	0.03		0.34	0.00		0.52		0.04	0.14	
Uniform Delay, d1	50.3	4.1	1.3		7.3	5.6		53.7		51.9	52.2	
Progression Factor	1.26	1.64	0.09		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.2	0.0		0.4	0.0		5.3		0.1	0.4	
Delay (s)	63.9	7.0	0.1		7.7	5.6		59.0		52.0	52.7	
Level of Service	E	A	A		A	A		E		D	D	
Approach Delay (s)		10.3			7.7			59.0			52.7	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	527	1221	158	203	851	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	4.0	6.0	5.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (prot)	3471	1558	1736	3505	3394	
Flt Permitted	1.00	1.00	0.95	1.00	0.95	
Satd. Flow (perm)	3471	1558	1736	3505	3394	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	549	1272	165	211	886	32
RTOR Reduction (vph)	0	29	0	0	2	0
Lane Group Flow (vph)	549	1243	165	211	916	0
Confl. Peds. (#/hr)		1	1		2	1
Heavy Vehicles (%)	4%	3%	4%	3%	3%	2%
Turn Type		pm+ov	Prot			
Protected Phases	2	8	1	6	8	
Permitted Phases		2				
Actuated Green, G (s)	26.5	118.5	15.6	46.1	92.0	
Effective Green, g (s)	26.5	118.5	15.6	46.1	92.0	
Actuated g/C Ratio	0.18	0.79	0.10	0.31	0.62	
Clearance Time (s)	6.0	5.0	4.0	6.0	5.0	
Vehicle Extension (s)	4.8	2.3	2.3	5.5	2.3	
Lane Grp Cap (vph)	617	1238	182	1084	2094	
v/s Ratio Prot	0.16	c0.62	c0.10	0.06	0.27	
v/s Ratio Perm		0.18				
v/c Ratio	0.89	1.00	0.91	0.19	0.44	
Uniform Delay, d1	59.9	15.3	66.0	37.9	15.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.6	26.5	40.6	0.2	0.1	
Delay (s)	75.4	41.8	106.6	38.1	15.1	
Level of Service	E	D	F	D	B	
Approach Delay (s)	52.0			68.2	15.1	
Approach LOS	D			E	B	

Intersection Summary			
HCM Average Control Delay	43.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	149.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.0%	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)	637	2147	0	3	1388	48	0	161	12	148	171	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.4		4.0	5.4	5.4		4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00		1.00	1.00	1.00
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		1.00	1.00	0.85		0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539		1805	1810	1568		1879		1768	1792	1442
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00		0.49	1.00	1.00
Satd. Flow (perm)	1770	3539		1805	1810	1568		1879		903	1792	1442
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)	664	2236	0	3	1446	50	0	168	12	154	178	382
RTOR Reduction (vph)	0	0	0	0	0	17	0	2	0	0	0	258
Lane Group Flow (vph)	664	2236	0	3	1446	33	0	178	0	154	178	124
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	0%	0%	5%	3%	11%	0%	0%	2%	6%	12%
Turn Type	Prot			Prot		Prot	Perm			Perm		Prot
Protected Phases	5	2		1	6	6		8			4	4
Permitted Phases							8			4		
Actuated Green, G (s)	23.1	72.4		0.7	50.0	50.0		21.0		21.0	21.0	21.0
Effective Green, g (s)	23.1	72.4		0.7	50.0	50.0		21.0		21.0	21.0	21.0
Actuated g/C Ratio	0.21	0.67		0.01	0.46	0.46		0.19		0.19	0.19	0.19
Clearance Time (s)	4.0	5.4		4.0	5.4	5.4		4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.3	5.4		2.3	5.4	5.4		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	379	2372		12	838	726		365		176	348	280
v/s Ratio Prot	c0.38	0.63		0.00	c0.80	0.02		0.09			0.10	0.09
v/s Ratio Perm										c0.17		
v/c Ratio	1.75	0.94		0.25	1.73	0.05		0.49		0.88	0.51	0.44
Uniform Delay, d1	42.5	15.9		53.4	29.0	15.9		38.7		42.2	38.9	38.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	349.1	8.8		6.3	331.5	0.1		0.7		34.8	0.9	0.8
Delay (s)	391.6	24.8		59.7	360.5	16.0		39.4		77.0	39.9	39.2
Level of Service	F	C		E	F	B		D		E	D	D
Approach Delay (s)		108.8			348.4			39.4			47.5	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM Average Control Delay	166.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.54		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	141.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	52	914	719	44	457	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.87			1.00	1.00	0.85
Flt Protected	1.00			0.95	0.95	1.00
Satd. Flow (prot)	1655			1814	1805	1615
Flt Permitted	1.00			0.12	0.95	1.00
Satd. Flow (perm)	1655			234	1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	962	757	46	481	371
RTOR Reduction (vph)	310	0	0	0	0	284
Lane Group Flow (vph)	707	0	0	803	481	87
Heavy Vehicles (%)	3%	0%	0%	0%	0%	0%
Turn Type			Perm			Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Actuated Green, G (s)	61.0			61.0	21.0	21.0
Effective Green, g (s)	61.0			61.0	21.0	21.0
Actuated g/C Ratio	0.68			0.68	0.23	0.23
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1122			159	421	377
v/s Ratio Prot	0.43				c0.27	
v/s Ratio Perm				c3.43		0.05
v/c Ratio	0.63			5.05	1.14	0.23
Uniform Delay, d1	8.2			14.5	34.5	27.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.2			1836.6	88.9	0.3
Delay (s)	9.3			1851.1	123.4	28.3
Level of Service	A			F	F	C
Approach Delay (s)	9.3			1851.1	82.0	
Approach LOS	A			F	F	

Intersection Summary			
HCM Average Control Delay	586.0	HCM Level of Service	F
HCM Volume to Capacity ratio	4.06		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	136.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	249	0	1	680	1284	362
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	271	0	1	739	1396	393
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					919	
pX, platoon unblocked						
vC, conflicting volume	3531	2791	2791	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3531	2791	2791	0	0	
tC, single (s)	7.1	6.5	6.6	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.1	3.3	2.2	
p0 queue free %	0	100	56	31	14	
cM capacity (veh/h)	0	2	2	1076	1617	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	271	0	1	739	1396	393
Volume Left	271	0	0	0	1396	0
Volume Right	0	0	0	739	0	393
cSH	0	1700	2	1076	1617	1700
Volume to Capacity	1354.66	0.00	0.44	0.69	0.86	0.23
Queue Length 95th (ft)	Err	0	14	145	323	0
Control Delay (s)	Err	0.0	1893.8	15.3	19.0	0.0
Lane LOS	F	A	F	C	C	
Approach Delay (s)	Err		18.1		14.8	
Approach LOS	F		C			

Intersection Summary			
Average Delay	980.8		
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	884	424	13	357	174	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	982	471	14	397	193	19
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			1453		1445	727
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1453		1445	727
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		0	95
cM capacity (veh/h)			472		120	360

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	655	799	147	264	212
Volume Left	0	0	14	0	193
Volume Right	0	471	0	0	19
cSH	1700	1700	472	1700	128
Volume to Capacity	0.39	0.47	0.03	0.16	1.66
Queue Length 95th (ft)	0	0	2	0	392
Control Delay (s)	0.0	0.0	1.7	0.0	390.8
Lane LOS			A		F
Approach Delay (s)	0.0		0.6		390.8
Approach LOS					F

Intersection Summary			
Average Delay	40.1		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	574	1263	258	44	814	117	495	141	85	128	143	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.5		4.2	4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
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	0.97		1.00	0.98		1.00	0.94		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)	1787	3506		1805	3511		1787	1781		1805	1863	1599
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3506		1805	3511		1787	1781		1805	1863	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	592	1302	266	45	839	121	510	145	88	132	147	410
RTOR Reduction (vph)	0	10	0	0	7	0	0	13	0	0	0	344
Lane Group Flow (vph)	592	1558	0	45	953	0	510	220	0	132	147	66
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	1%	0%	2%	0%	1%	0%	1%	1%	0%	0%	2%	1%
Turn Type	Prot			Prot			Split			Split		Prot
Protected Phases	5	2		1	6		4	4		8	8	8
Permitted Phases												
Actuated Green, G (s)	41.8	75.5		4.9	38.6		39.5	39.5		16.6	16.6	16.6
Effective Green, g (s)	41.8	75.5		4.9	38.6		39.5	39.5		16.6	16.6	16.6
Actuated g/C Ratio	0.27	0.49		0.03	0.25		0.26	0.26		0.11	0.11	0.11
Clearance Time (s)	4.2	4.5		4.2	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	5.2		2.5	5.2		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	484	1717		57	879		458	456		194	201	172
v/s Ratio Prot	c0.33	0.44		0.02	c0.27		c0.29	0.12		0.07	c0.08	0.04
v/s Ratio Perm												
v/c Ratio	1.22	0.91		0.79	1.08		1.11	0.48		0.68	0.73	0.39
Uniform Delay, d1	56.2	36.1		74.1	57.8		57.3	48.7		66.2	66.6	64.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	117.8	7.8		49.0	55.9		76.8	0.6		8.6	12.1	1.1
Delay (s)	174.0	44.0		123.1	113.7		134.1	49.2		74.9	78.8	65.1
Level of Service	F	D		F	F		F	D		E	E	E
Approach Delay (s)		79.6			114.1			107.5			69.9	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	90.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	154.2	Sum of lost time (s)	17.7
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	302	724	86	192	297	51
Ideal Flow (vphpl)	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	1.00	1.00
Frpb, ped/bikes	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
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)	1716	1442	1599	1716	1646	1458
Flt Permitted	1.00	1.00	0.53	1.00	0.95	1.00
Satd. Flow (perm)	1716	1442	899	1716	1646	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	787	93	209	323	55
RTOR Reduction (vph)	0	415	0	0	0	36
Lane Group Flow (vph)	328	372	93	209	323	19
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	1%	4%	2%	1%	2%
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	20.2	20.2	20.2	20.2	14.5	14.5
Effective Green, g (s)	20.2	20.2	20.2	20.2	14.5	14.5
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.34	0.34
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)	812	682	425	812	559	495
v/s Ratio Prot	0.19			0.12	c0.20	
v/s Ratio Perm		c0.26	0.10			0.01
v/c Ratio	0.40	0.55	0.22	0.26	0.58	0.04
Uniform Delay, d1	7.3	8.0	6.6	6.7	11.6	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.9	0.3	0.2	1.5	0.0
Delay (s)	7.7	8.9	6.9	6.9	13.0	9.5
Level of Service	A	A	A	A	B	A
Approach Delay (s)	8.5			6.9	12.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	794	5	104	707	247	2	28	39	717	217	54
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		6.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
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	1.00	0.85	1.00	1.00	0.85		0.92			0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.96	
Satd. Flow (prot)	1662	3260	1488	1646	3292	1458		1550			1657	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.74	
Satd. Flow (perm)	1662	3260	1488	1646	3292	1458		1526			1270	
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)	10	827	5	108	736	257	2	29	41	747	226	56
RTOR Reduction (vph)	0	0	2	0	0	162	0	17	0	0	2	0
Lane Group Flow (vph)	10	827	3	108	736	95	0	55	0	0	1027	0
Confl. Bikes (#/hr)				1								
Heavy Vehicles (%)	0%	2%	0%	1%	1%	2%	0%	3%	5%	1%	2%	0%
Turn Type	Prot		Prot	Prot		Prot	Perm			Perm		
Protected Phases	1	6	6	5	2	2		4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.6	38.0	38.0	7.0	43.4	43.4		91.0			92.0	
Effective Green, g (s)	1.6	38.0	38.0	7.0	43.4	43.4		91.0			92.0	
Actuated g/C Ratio	0.01	0.25	0.25	0.05	0.28	0.28		0.59			0.60	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		6.0			5.0	
Vehicle Extension (s)	2.3	4.8	4.8	2.3	4.8	4.8		2.5			2.5	
Lane Grp Cap (vph)	17	810	370	75	934	414		908			764	
v/s Ratio Prot	0.01	c0.25	0.00	c0.07	0.22	0.07						
v/s Ratio Perm								0.04			c0.81	
v/c Ratio	0.59	1.02	0.01	1.44	0.79	0.23		0.06			1.34	
Uniform Delay, d1	75.4	57.5	43.3	73.0	50.6	42.0		13.0			30.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	33.6	37.0	0.0	258.2	5.1	0.6		0.0			163.8	
Delay (s)	109.0	94.5	43.3	331.2	55.6	42.5		13.1			194.3	
Level of Service	F	F	D	F	E	D		B			F	
Approach Delay (s)		94.4			79.6			13.1			194.3	
Approach LOS		F			E			B			F	

Intersection Summary			
HCM Average Control Delay	120.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	153.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	102	216	748	158	284	1795
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	107	227	787	166	299	1889
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	3275	787			787	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3275	787			787	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	0	42			64	
cM capacity (veh/h)	6	391			841	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	107	227	787	166	299	1889
Volume Left	107	0	0	0	299	0
Volume Right	0	227	0	166	0	0
cSH	6	391	1700	1700	841	1700
Volume to Capacity	18.78	0.58	0.46	0.10	0.36	1.11
Queue Length 95th (ft)	Err	89	0	0	40	0
Control Delay (s)	Err	26.2	0.0	0.0	11.6	0.0
Lane LOS	F	D			B	
Approach Delay (s)	3225.0		0.0		1.6	
Approach LOS	F					

Intersection Summary			
Average Delay	311.5		
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	33	4	34	28	91	11	736	23	272	1404	153
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.2			5.2	5.2	4.5	6.0	6.0	4.5	6.0	6.0
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.99			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1671			1666	1488	1662	1683	1365	1662	1699	1488
Flt Permitted		0.78			0.77	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1340			1314	1488	1662	1683	1365	1662	1699	1488
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	36	4	37	31	100	12	775	24	286	1478	161
RTOR Reduction (vph)	0	1	0	0	0	89	0	0	3	0	0	9
Lane Group Flow (vph)	0	97	0	0	68	11	12	775	21	286	1478	152
Heavy Vehicles (%)	2%	0%	0%	0%	5%	0%	0%	4%	9%	0%	3%	0%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4			6			2
Actuated Green, G (s)		14.1			14.1	14.1	1.5	74.8	74.8	26.1	99.4	99.4
Effective Green, g (s)		14.1			14.1	14.1	1.5	74.8	74.8	26.1	99.4	99.4
Actuated g/C Ratio		0.11			0.11	0.11	0.01	0.57	0.57	0.20	0.76	0.76
Clearance Time (s)		5.2			5.2	5.2	4.5	6.0	6.0	4.5	6.0	6.0
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.8	4.8	2.3	4.8	4.8
Lane Grp Cap (vph)		145			142	161	19	963	781	332	1292	1132
v/s Ratio Prot							0.01	0.46		c0.17	c0.87	
v/s Ratio Perm		c0.07			0.05	0.01			0.02			0.10
v/c Ratio		0.67			0.48	0.07	0.63	0.80	0.03	0.86	1.14	0.13
Uniform Delay, d1		56.1			54.8	52.4	64.3	22.2	12.1	50.6	15.6	4.2
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		10.1			1.8	0.1	44.8	5.6	0.0	19.5	74.4	0.1
Delay (s)		66.1			56.7	52.5	109.1	27.8	12.2	70.1	90.1	4.3
Level of Service		E			E	D	F	C	B	E	F	A
Approach Delay (s)		66.1			54.2			28.5			79.9	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM Average Control Delay	64.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.7	Sum of lost time (s)	15.7
Intersection Capacity Utilization	108.6%	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												
Volume (veh/h)	46	90	0	29	42	15	18	621	7	15	1111	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	49	96	0	31	45	16	19	654	7	16	1169	13
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	1915	1893	1169	1941	1893	654	1169			654		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1915	1893	1169	1941	1893	654	1169			654		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	100	0	34	97	97			98		
cM capacity (veh/h)	19	67	237	0	67	470	605			943		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	96	31	61	19	654	7	16	1169	13
Volume Left	49	0	31	0	19	0	0	16	0	0
Volume Right	0	0	0	16	0	0	7	0	0	13
cSH	19	67	0	87	605	1700	1700	943	1700	1700
Volume to Capacity	2.52	1.42	Err	0.70	0.03	0.38	0.00	0.02	0.69	0.01
Queue Length 95th (ft)	163	201	Err	85	2	0	0	1	0	0
Control Delay (s)	1103.9	361.1	Err	111.1	11.1	0.0	0.0	8.9	0.0	0.0
Lane LOS	F	F	F	F	B			A		
Approach Delay (s)	612.4		Err		0.3			0.1		
Approach LOS	F		F							

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	79.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	251	543	333	183	134	340
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	276	597	366	201	147	374
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			873		1108	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			873		1108	139
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			52		0	58
cM capacity (veh/h)			769		109	886

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	138	138	597	366	101	101	521
Volume Left	0	0	0	366	0	0	147
Volume Right	0	0	597	0	0	0	374
cSH	1700	1700	1700	769	1700	1700	293
Volume to Capacity	0.08	0.08	0.35	0.48	0.06	0.06	1.78
Queue Length 95th (ft)	0	0	0	65	0	0	855
Control Delay (s)	0.0	0.0	0.0	13.9	0.0	0.0	393.6
Lane LOS				B			F
Approach Delay (s)	0.0			8.9			393.6
Approach LOS							F

Intersection Summary			
Average Delay	107.2		
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	68	509	379	12	57	142
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	71	530	395	12	59	148
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	407				802	197
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	407				802	197
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	94				80	82
cM capacity (veh/h)	1162				295	804

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	71	265	265	197	197	12	59	148
Volume Left	71	0	0	0	0	0	59	0
Volume Right	0	0	0	0	0	12	0	148
cSH	1162	1700	1700	1700	1700	1700	295	804
Volume to Capacity	0.06	0.16	0.16	0.12	0.12	0.01	0.20	0.18
Queue Length 95th (ft)	5	0	0	0	0	0	18	17
Control Delay (s)	8.3	0.0	0.0	0.0	0.0	0.0	20.3	10.5
Lane LOS	A						C	B
Approach Delay (s)	1.0			0.0			13.3	
Approach LOS							B	

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	632	930	869	77	71	712
Ideal Flow (vphpl)	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	1.00	1.00
Frpb, ped/bikes	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
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)	1630	1716	1716	1458	1662	1458
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1630	1716	1716	1458	1662	1458
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.90	0.90
Adj. Flow (vph)	665	979	915	81	79	791
RTOR Reduction (vph)	0	0	0	18	0	22
Lane Group Flow (vph)	665	979	915	63	79	769
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	Prot			Perm		pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases				6		
Actuated Green, G (s)	17.0	52.0	31.0	31.0	20.0	41.0
Effective Green, g (s)	17.0	52.0	31.0	31.0	20.0	41.0
Actuated g/C Ratio	0.21	0.65	0.39	0.39	0.25	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.3	6.0	4.2	4.2	2.3	
Lane Grp Cap (vph)	346	1115	665	565	416	747
v/s Ratio Prot	c0.41	0.57	c0.53		0.05	c0.53
v/s Ratio Perm				0.04		
v/c Ratio	1.92	0.88	1.38	0.11	0.19	1.03
Uniform Delay, d1	31.5	11.4	24.5	15.7	23.6	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	425.5	9.9	178.6	0.4	0.1	40.5
Delay (s)	457.0	21.3	203.1	16.1	23.8	60.0
Level of Service	F	C	F	B	C	E
Approach Delay (s)		197.5	187.9		56.7	
Approach LOS		F	F		E	

Intersection Summary			
HCM Average Control Delay	159.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.5%	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												
Volume (veh/h)	0	1	2	134	1	143	7	447	226	326	878	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1	2	141	1	151	7	471	238	343	924	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			1			1						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2172	2096	924	2097	2096	471	924			471		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2172	2096	924	2097	2096	471	924			471		
tC, single (s)	7.1	6.5	6.7	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.8	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	97	99	0	97	74	99			68		
cM capacity (veh/h)	18	36	268	28	36	575	748			1081		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	3	293	7	471	238	343	924	1
Volume Left	0	141	7	0	0	343	0	0
Volume Right	2	151	0	0	238	0	0	1
cSH	107	55	748	1700	1700	1081	1700	1700
Volume to Capacity	0.03	5.36	0.01	0.28	0.14	0.32	0.54	0.00
Queue Length 95th (ft)	2	Err	1	0	0	34	0	0
Control Delay (s)	48.7	Err	9.9	0.0	0.0	9.9	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	48.7	Err	0.1			2.7		
Approach LOS	E	F						

Intersection Summary				
Average Delay	1284.9			
Intersection Capacity Utilization	78.3%	ICU Level of Service	D	
Analysis Period (min)	15			