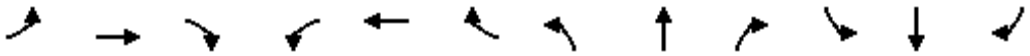


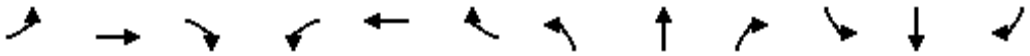
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	349	74	197	829	675	90	46	166	191	33	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		3.0	4.5	3.0		3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.97	
Satd. Flow (prot)	1752	3342		1752	3438	1532		1786	1530	1665	1645	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.97	
Satd. Flow (perm)	1752	3342		1752	3438	1532		1786	1530	1665	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)	14	384	81	216	911	742	99	51	182	210	36	31
RTOR Reduction (vph)	0	10	0	0	0	172	0	0	160	0	10	0
Lane Group Flow (vph)	14	455	0	216	911	570	0	150	22	139	128	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		pm+ov	Split		Perm	Split		
Protected Phases	1	6		5	2	7	8	8		7	7	
Permitted Phases						2			8			
Actuated Green, G (s)	2.5	54.5		18.6	70.6	86.6		13.4	13.4	16.0	16.0	
Effective Green, g (s)	3.5	55.5		19.6	71.6	88.6		14.4	14.4	17.0	17.0	
Actuated g/C Ratio	0.03	0.46		0.16	0.60	0.74		0.12	0.12	0.14	0.14	
Clearance Time (s)	4.0	5.5		4.0	5.5	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.5		1.5	2.5	1.5		1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	51	1546		286	2051	1131		214	184	236	233	
v/s Ratio Prot	0.01	0.14		c0.12	0.26	c0.07		c0.08		c0.08	0.08	
v/s Ratio Perm						0.30			0.01			
v/c Ratio	0.27	0.29		0.76	0.44	0.50		0.70	0.12	0.59	0.55	
Uniform Delay, d1	57.0	20.1		47.9	13.3	6.5		50.7	47.1	48.2	47.9	
Progression Factor	1.00	1.00		0.96	0.88	1.34		1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1		7.7	0.6	0.1		8.2	0.1	2.4	1.4	
Delay (s)	58.1	20.1		53.8	12.2	8.9		58.9	47.2	50.6	49.3	
Level of Service	E	C		D	B	A		E	D	D	D	
Approach Delay (s)		21.3			15.7			52.5			50.0	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



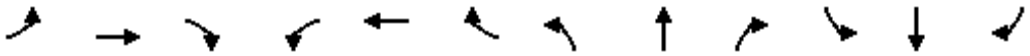
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	810	34	119	384	154	48	24	114	502	19	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		3.0	4.5	3.0		3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.96	
Satd. Flow (prot)	1752	3416		1752	3438	1540		1785	1521	1665	1655	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	0.96	
Satd. Flow (perm)	1752	3416		1752	3438	1540		1785	1521	1665	1655	
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)	26	890	37	131	422	169	53	26	125	552	21	30
RTOR Reduction (vph)	0	3	0	0	0	44	0	0	115	0	5	0
Lane Group Flow (vph)	26	924	0	131	422	125	0	79	10	304	294	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		pm+ov	Split		Perm	Split		
Protected Phases	1	6		5	2	7	8	8		7	7	
Permitted Phases						2			8			
Actuated Green, G (s)	1.6	37.1		9.1	44.6	64.4		6.5	6.5	19.8	19.8	
Effective Green, g (s)	2.6	38.1		10.1	45.6	66.4		7.5	7.5	20.8	20.8	
Actuated g/C Ratio	0.03	0.42		0.11	0.51	0.74		0.08	0.08	0.23	0.23	
Clearance Time (s)	4.0	5.5		4.0	5.5	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.5		1.5	2.5	1.5		1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	51	1446		197	1742	1136		149	127	385	382	
v/s Ratio Prot	0.01	c0.27		c0.07	0.12	0.03		c0.04		c0.18	0.18	
v/s Ratio Perm						0.06			0.01			
v/c Ratio	0.51	0.64		0.66	0.24	0.11		0.53	0.08	0.79	0.77	
Uniform Delay, d1	43.1	20.5		38.3	12.5	3.4		39.6	38.1	32.5	32.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.9	0.8		6.4	0.3	0.0		1.8	0.1	9.6	8.5	
Delay (s)	46.0	21.3		44.7	12.8	3.4		41.4	38.2	42.1	40.9	
Level of Service	D	C		D	B	A		D	D	D	D	
Approach Delay (s)		22.0			16.4			39.4			41.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



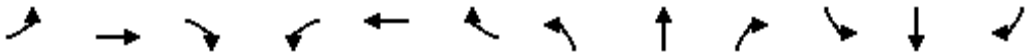
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	297	23	102	518	138	8	0	55	11	4	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		3.5	3.5		3.5	3.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.96		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	0.85		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)	1752	3400		1752	3327		1752	1511		3400	1589	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	3400		1752	3327		1752	1511		3400	1589	
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)	133	326	25	112	569	152	9	0	60	12	4	24
RTOR Reduction (vph)	0	9	0	0	47	0	0	56	0	0	23	0
Lane Group Flow (vph)	133	342	0	112	674	0	9	4	0	12	6	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	5.4	13.9		3.6	12.1		0.5	1.3		0.6	1.4	
Effective Green, g (s)	6.4	14.9		4.6	13.1		1.5	2.3		1.6	2.4	
Actuated g/C Ratio	0.17	0.39		0.12	0.34		0.04	0.06		0.04	0.06	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	292	1319		210	1135		68	91		142	99	
v/s Ratio Prot	c0.08	0.10		0.06	c0.20		c0.01	0.00		c0.00	0.00	
v/s Ratio Perm												
v/c Ratio	0.46	0.26		0.53	0.59		0.13	0.04		0.08	0.06	
Uniform Delay, d1	14.4	8.0		15.9	10.5		17.8	17.0		17.7	16.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.0		1.3	0.6		0.3	0.1		0.1	0.1	
Delay (s)	14.8	8.0		17.2	11.0		18.1	17.1		17.8	17.0	
Level of Service	B	A		B	B		B	B		B	B	
Approach Delay (s)		9.9			11.8			17.2			17.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	38.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.9%	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)	18	505	14	32	359	20	51	4	89	134	6	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		3.5	3.5	3.5	3.5	3.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	0.95	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97	0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.86	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3424		1752	3410		1752	1462	1475	3400	1571	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3424		1752	3410		1752	1462	1475	3400	1571	
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)	20	555	15	35	395	22	56	4	98	147	7	78
RTOR Reduction (vph)	0	3	0	0	7	0	0	44	43	0	71	0
Lane Group Flow (vph)	20	567	0	35	410	0	56	7	8	147	14	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	0.2	14.4		2.4	16.6		1.6	1.6	4.0	2.8	2.8	
Effective Green, g (s)	1.2	15.4		3.4	17.6		2.6	2.6	6.0	3.8	3.8	
Actuated g/C Ratio	0.03	0.38		0.08	0.44		0.06	0.06	0.15	0.09	0.09	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	52	1312		148	1493		113	95	220	321	149	
v/s Ratio Prot	0.01	c0.17		c0.02	0.12		c0.03	0.00	0.00	c0.04	0.01	
v/s Ratio Perm									0.00			
v/c Ratio	0.38	0.43		0.24	0.27		0.50	0.07	0.03	0.46	0.10	
Uniform Delay, d1	19.1	9.2		17.2	7.2		18.2	17.7	14.6	17.2	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.1		0.3	0.0		1.2	0.1	0.0	0.4	0.1	
Delay (s)	20.9	9.3		17.5	7.3		19.4	17.8	14.6	17.6	16.7	
Level of Service	C	A		B	A		B	B	B	B	B	
Approach Delay (s)		9.6			8.1			17.4			17.3	
Approach LOS		A			A			B			B	

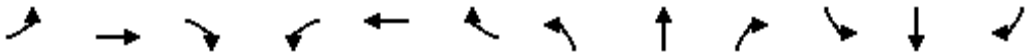
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	40.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	208	0	0	650	230	779	0	70	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5			4.5	4.5	3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	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)	1719	3438			3438	1538	1633	1633	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1719	3438			3438	1538	1633	1633	1568			
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)	112	229	0	0	714	253	856	0	77	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	161	0	0	50	0	0	0
Lane Group Flow (vph)	112	229	0	0	714	92	428	428	27	0	0	0
Heavy Vehicles (%)	5%	5%	2%	2%	5%	5%	5%	2%	3%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	5.2	29.9			20.7	20.7	20.1	20.1	20.1			
Effective Green, g (s)	6.2	30.9			21.7	21.7	21.1	21.1	21.1			
Actuated g/C Ratio	0.10	0.51			0.36	0.36	0.35	0.35	0.35			
Clearance Time (s)	4.0	5.5			5.5	5.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	178	1771			1243	556	574	574	551			
v/s Ratio Prot	c0.07	0.07			c0.21		c0.26	0.26				
v/s Ratio Perm						0.06			0.02			
v/c Ratio	0.63	0.13			0.57	0.16	0.75	0.75	0.05			
Uniform Delay, d1	25.8	7.6			15.4	13.0	17.1	17.1	12.8			
Progression Factor	0.99	0.47			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	6.8	0.2			1.9	0.6	5.2	5.2	0.0			
Delay (s)	32.2	3.7			17.4	13.6	22.3	22.3	12.9			
Level of Service	C	A			B	B	C	C	B			
Approach Delay (s)		13.0			16.4			21.6			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	487	0	0	229	362	267	0	70	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5			4.5	4.5	3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	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)	1719	3438			3438	1538	1633	1633	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1719	3438			3438	1538	1633	1633	1568			
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)	221	535	0	0	252	398	293	0	77	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	244	0	0	63	0	0	0
Lane Group Flow (vph)	221	535	0	0	252	154	146	147	14	0	0	0
Heavy Vehicles (%)	5%	5%	2%	2%	5%	5%	5%	2%	3%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	14.0	40.2			22.2	22.2	9.8	9.8	9.8			
Effective Green, g (s)	15.0	41.2			23.2	23.2	10.8	10.8	10.8			
Actuated g/C Ratio	0.25	0.69			0.39	0.39	0.18	0.18	0.18			
Clearance Time (s)	4.0	5.5			5.5	5.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	430	2361			1329	595	294	294	282			
v/s Ratio Prot	c0.13	0.16			0.07		0.09	c0.09				
v/s Ratio Perm						c0.10			0.01			
v/c Ratio	0.51	0.23			0.19	0.26	0.50	0.50	0.05			
Uniform Delay, d1	19.4	3.5			12.2	12.5	22.2	22.2	20.4			
Progression Factor	0.86	0.72			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.0	0.2			0.3	1.1	1.3	1.3	0.1			
Delay (s)	17.8	2.7			12.5	13.6	23.5	23.5	20.4			
Level of Service	B	A			B	B	C	C	C			
Approach Delay (s)		7.1			13.2			22.9			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Volume (vph)	0	220	486	0	1329	100	90	0	372	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.0		3.5	3.5	3.5		3.5		
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		0.88		
Frt		1.00	0.85		1.00	0.85	1.00		0.85		
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (prot)		3438	1568		3438	1583	3400		2760		
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (perm)		3438	1568		3438	1583	3400		2760		
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
Adj. Flow (vph)	0	242	534	0	1460	110	99	0	409	0	0
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	72	0	0
Lane Group Flow (vph)	0	242	534	0	1460	74	99	0	337	0	0
Heavy Vehicles (%)	3%	5%	3%	2%	5%	2%	3%	2%	3%	2%	2%
Turn Type			Free			Perm	Prot		custom		
Protected Phases		2			6		4				
Permitted Phases			Free			6			4		
Actuated Green, G (s)		39.4	60.0		39.4	39.4	11.6		11.6		
Effective Green, g (s)		40.4	60.0		40.4	40.4	12.6		12.6		
Actuated g/C Ratio		0.67	1.00		0.67	0.67	0.21		0.21		
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5		
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		2315	1568		2315	1066	714		580		
v/s Ratio Prot		0.07			c0.42		0.03				
v/s Ratio Perm			0.34			0.05			c0.12		
v/c Ratio		0.10	0.34		0.63	0.07	0.14		0.58		
Uniform Delay, d1		3.4	0.0		5.6	3.4	19.3		21.3		
Progression Factor		1.63	1.00		0.38	2.17	1.00		1.00		
Incremental Delay, d2		0.1	0.6		0.4	0.0	0.1		1.5		
Delay (s)		5.7	0.6		2.5	7.3	19.4		22.8		
Level of Service		A	A		A	A	B		C		
Approach Delay (s)		2.2			2.9			22.1		0.0	
Approach LOS		A			A			C		A	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

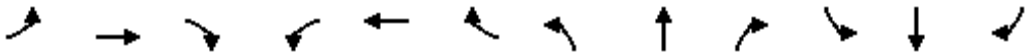
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Volume (vph)	0	568	858	0	445	60	120	0	221	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.0		3.5	3.5	3.5		3.5		
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		0.88		
Frt		1.00	0.85		1.00	0.85	1.00		0.85		
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (prot)		3438	1568		3438	1583	3400		2760		
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (perm)		3438	1568		3438	1583	3400		2760		
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
Adj. Flow (vph)	0	624	943	0	489	66	132	0	243	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	208	0	0
Lane Group Flow (vph)	0	624	943	0	489	49	132	0	35	0	0
Heavy Vehicles (%)	3%	5%	3%	2%	5%	2%	3%	2%	3%	2%	2%
Turn Type			Free			Perm	Prot		custom		
Protected Phases		2			6		4				
Permitted Phases			Free			6			4		
Actuated Green, G (s)		43.3	60.0		43.3	43.3	7.7		7.7		
Effective Green, g (s)		44.3	60.0		44.3	44.3	8.7		8.7		
Actuated g/C Ratio		0.74	1.00		0.74	0.74	0.14		0.14		
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5		
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		2538	1568		2538	1169	493		400		
v/s Ratio Prot		0.18			0.14		0.04				
v/s Ratio Perm			c0.60			0.03			0.01		
v/c Ratio		0.25	0.60		0.19	0.04	0.27		0.09		
Uniform Delay, d1		2.5	0.0		2.4	2.1	22.8		22.2		
Progression Factor		1.00	1.00		0.38	0.86	1.00		1.00		
Incremental Delay, d2		0.2	1.7		0.0	0.0	0.3		0.1		
Delay (s)		2.7	1.7		0.9	1.8	23.1		22.3		
Level of Service		A	A		A	A	C		C		
Approach Delay (s)		2.1			1.0			22.6		0.0	
Approach LOS		A			A			C		A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	26.7%	ICU Level of Service	A
Analysis Period (min)	15		

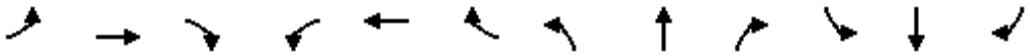
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	80	15	67	122	161	23	92	127	271	128	32
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)	26	88	16	74	134	177	25	101	140	298	141	35
Pedestrians		5			5			5			5	
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			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	316			109			537	609	98	622	448	144
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316			109			537	609	98	622	448	144
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			95			92	73	85	0	70	96
cM capacity (veh/h)	1233			1469			312	377	947	251	465	893

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	26	88	16	74	134	177	25	241	298	176
Volume Left	26	0	0	74	0	0	25	0	298	0
Volume Right	0	0	16	0	0	177	0	140	0	35
cSH	1233	1700	1700	1469	1700	1700	312	579	251	514
Volume to Capacity	0.02	0.05	0.01	0.05	0.08	0.10	0.08	0.42	1.18	0.34
Queue Length 95th (ft)	2	0	0	4	0	0	7	51	347	38
Control Delay (s)	8.0	0.0	0.0	7.6	0.0	0.0	17.6	15.6	157.7	15.6
Lane LOS	A			A			C	C	F	C
Approach Delay (s)	1.6			1.5			15.8		105.0	
Approach LOS							C		F	

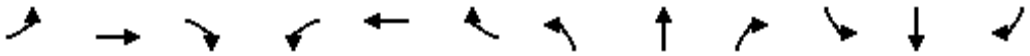
Intersection Summary				
Average Delay	43.6			
Intersection Capacity Utilization	52.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	151	34	109	115	236	13	88	53	171	174	28
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)	38	166	37	120	126	259	14	97	58	188	191	31
Pedestrians		5			5			5			5	
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			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	391			208			745	878	176	725	656	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	391			208			745	878	176	725	656	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			91			91	61	93	6	43	97
cM capacity (veh/h)	1158			1351			158	249	857	199	335	902

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	38	166	37	120	126	259	14	155	188	222
Volume Left	38	0	0	120	0	0	14	0	188	0
Volume Right	0	0	37	0	0	259	0	58	0	31
cSH	1158	1700	1700	1351	1700	1700	158	340	199	367
Volume to Capacity	0.03	0.10	0.02	0.09	0.07	0.15	0.09	0.46	0.94	0.60
Queue Length 95th (ft)	3	0	0	7	0	0	7	57	193	95
Control Delay (s)	8.2	0.0	0.0	7.9	0.0	0.0	30.1	24.1	99.1	28.7
Lane LOS	A			A			D	C	F	D
Approach Delay (s)	1.3			1.9			24.7		60.9	
Approach LOS							C		F	

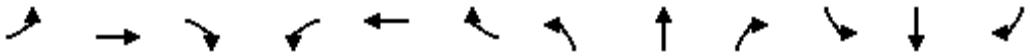
Intersection Summary				
Average Delay	22.9			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	355	75	200	850	690	93	47	168	200	34	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	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	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
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	3344		1752	3438	1525	1752	1845	1523	3400	1704	
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	3344		1752	3438	1525	1752	1845	1523	3400	1704	
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)	15	390	82	220	934	758	102	52	185	220	37	32
RTOR Reduction (vph)	0	16	0	0	0	291	0	0	169	0	30	0
Lane Group Flow (vph)	15	456	0	220	934	467	102	52	16	220	39	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	0.8	40.6		14.7	54.5	54.5	11.8	6.9	6.9	10.3	5.4	
Effective Green, g (s)	1.8	41.6		15.7	55.5	55.5	12.8	7.9	7.9	11.3	6.4	
Actuated g/C Ratio	0.02	0.46		0.17	0.62	0.62	0.14	0.09	0.09	0.13	0.07	
Clearance Time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.5		1.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	35	1546		306	2120	940	249	162	134	427	121	
v/s Ratio Prot	0.01	0.14		c0.13	0.27		0.06	c0.03		c0.06	0.02	
v/s Ratio Perm						c0.31			0.01			
v/c Ratio	0.43	0.29		0.72	0.44	0.50	0.41	0.32	0.12	0.52	0.32	
Uniform Delay, d1	43.6	15.1		35.1	9.1	9.5	35.2	38.5	37.8	36.8	39.7	
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	3.0	0.5		6.6	0.1	0.3	0.4	0.4	0.1	0.4	0.6	
Delay (s)	46.6	15.6		41.6	9.2	9.8	35.6	39.0	38.0	37.2	40.3	
Level of Service	D	B		D	A	A	D	D	D	D	D	
Approach Delay (s)		16.5			13.2			37.4			38.0	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

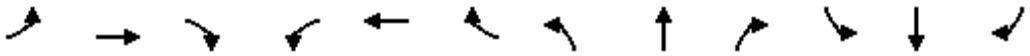
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	388	75	200	892	690	93	47	168	200	34	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	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	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
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	3351		1752	3438	1525	1752	1845	1523	3400	1704	
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	3351		1752	3438	1525	1752	1845	1523	3400	1704	
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)	15	426	82	220	980	758	102	52	185	220	37	32
RTOR Reduction (vph)	0	15	0	0	0	291	0	0	169	0	30	0
Lane Group Flow (vph)	15	493	0	220	980	467	102	52	16	220	39	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	0.8	40.6		14.7	54.5	54.5	11.8	6.9	6.9	10.3	5.4	
Effective Green, g (s)	1.8	41.6		15.7	55.5	55.5	12.8	7.9	7.9	11.3	6.4	
Actuated g/C Ratio	0.02	0.46		0.17	0.62	0.62	0.14	0.09	0.09	0.13	0.07	
Clearance Time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.5		1.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	35	1549		306	2120	940	249	162	134	427	121	
v/s Ratio Prot	0.01	0.15		c0.13	0.29		0.06	c0.03		c0.06	0.02	
v/s Ratio Perm						c0.31			0.01			
v/c Ratio	0.43	0.32		0.72	0.46	0.50	0.41	0.32	0.12	0.52	0.32	
Uniform Delay, d1	43.6	15.3		35.1	9.2	9.5	35.2	38.5	37.8	36.8	39.7	
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	3.0	0.5		6.6	0.1	0.3	0.4	0.4	0.1	0.4	0.6	
Delay (s)	46.6	15.8		41.6	9.4	9.8	35.6	39.0	38.0	37.2	40.3	
Level of Service	D	B		D	A	A	D	D	D	D	D	
Approach Delay (s)		16.7			13.2			37.4			38.0	
Approach LOS		B			B			D			D	

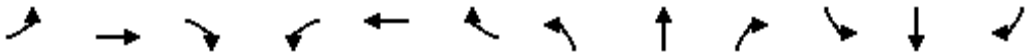
Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



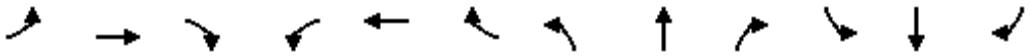
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	800	36	122	380	170	50	25	120	515	21	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
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	3415		1752	3438	1525	1752	1845	1525	3400	1668	
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	3415		1752	3438	1525	1752	1845	1525	3400	1668	
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	879	40	134	418	187	55	27	132	566	23	32
RTOR Reduction (vph)	0	4	0	0	0	93	0	0	120	0	28	0
Lane Group Flow (vph)	29	915	0	134	418	94	55	27	12	566	27	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	3.1	36.2		11.0	44.1	44.1	16.2	7.5	7.5	17.8	9.1	
Effective Green, g (s)	4.1	37.2		12.0	45.1	45.1	17.2	8.5	8.5	18.8	10.1	
Actuated g/C Ratio	0.05	0.41		0.13	0.50	0.50	0.19	0.09	0.09	0.21	0.11	
Clearance Time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.5		1.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	80	1412		234	1723	764	335	174	144	710	187	
v/s Ratio Prot	0.02	c0.27		c0.08	0.12		c0.03	0.01		c0.17	0.02	
v/s Ratio Perm						0.06			0.01			
v/c Ratio	0.36	0.65		0.57	0.24	0.12	0.16	0.16	0.09	0.80	0.14	
Uniform Delay, d1	41.7	21.2		36.6	12.8	11.9	30.4	37.5	37.2	33.8	36.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	2.3		2.1	0.1	0.1	0.1	0.2	0.1	5.8	0.1	
Delay (s)	42.7	23.5		38.7	12.8	12.0	30.5	37.6	37.3	39.6	36.2	
Level of Service	D	C		D	B	B	C	D	D	D	D	
Approach Delay (s)		24.1			17.3			35.6			39.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



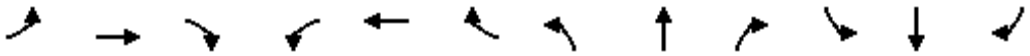
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	837	36	122	418	170	50	25	120	515	21	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	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	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
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	3416		1752	3438	1525	1752	1845	1524	3400	1668	
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	3416		1752	3438	1525	1752	1845	1524	3400	1668	
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	920	40	134	459	187	55	27	132	566	23	32
RTOR Reduction (vph)	0	4	0	0	0	93	0	0	120	0	28	0
Lane Group Flow (vph)	29	956	0	134	459	94	55	27	12	566	27	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			8			
Actuated Green, G (s)	3.0	36.3		11.1	44.4	44.4	16.0	7.3	7.3	17.8	9.1	
Effective Green, g (s)	4.0	37.3		12.1	45.4	45.4	17.0	8.3	8.3	18.8	10.1	
Actuated g/C Ratio	0.04	0.41		0.13	0.50	0.50	0.19	0.09	0.09	0.21	0.11	
Clearance Time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	2.5		1.5	2.5	2.5	1.5	1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	78	1416		236	1734	769	331	170	141	710	187	
v/s Ratio Prot	0.02	c0.28		c0.08	0.13		c0.03	0.01		c0.17	0.02	
v/s Ratio Perm						0.06			0.01			
v/c Ratio	0.37	0.68		0.57	0.26	0.12	0.17	0.16	0.09	0.80	0.14	
Uniform Delay, d1	41.8	21.4		36.5	12.8	11.8	30.6	37.6	37.4	33.8	36.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	2.6		1.9	0.1	0.1	0.1	0.2	0.1	5.8	0.1	
Delay (s)	42.9	24.0		38.4	12.8	11.8	30.7	37.8	37.5	39.6	36.2	
Level of Service	D	C		D	B	B	C	D	D	D	D	
Approach Delay (s)		24.6			17.0			35.8			39.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



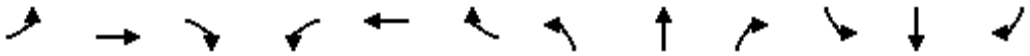
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	305	40	105	555	140	35	50	75	12	15	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		3.5	3.5	3.5	3.5	3.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	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	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3377		1752	3332		1752	1845	1557	3400	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3377		1752	3332		1752	1845	1557	3400	1710	
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)	77	335	44	115	610	154	38	55	82	13	16	13
RTOR Reduction (vph)	0	18	0	0	41	0	0	0	66	0	12	0
Lane Group Flow (vph)	77	361	0	115	723	0	38	55	16	13	17	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	2.6	12.0		3.5	12.9		1.4	1.7	5.2	0.3	0.6	
Effective Green, g (s)	3.6	13.0		4.5	13.9		2.4	2.7	7.2	1.3	1.6	
Actuated g/C Ratio	0.10	0.36		0.12	0.38		0.07	0.07	0.20	0.04	0.04	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	173	1203		216	1269		115	136	307	121	75	
v/s Ratio Prot	c0.04	0.11		0.07	c0.22		0.02	c0.03	0.01	0.00	c0.01	
v/s Ratio Perm									0.00			
v/c Ratio	0.45	0.30		0.53	0.57		0.33	0.40	0.05	0.11	0.22	
Uniform Delay, d1	15.5	8.5		15.0	8.9		16.3	16.1	11.9	17.0	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.1		1.3	0.4		0.6	0.7	0.0	0.1	0.5	
Delay (s)	16.2	8.5		16.3	9.3		16.9	16.8	11.9	17.2	17.4	
Level of Service	B	A		B	A		B	B	B	B	B	
Approach Delay (s)		9.8			10.2			14.5			17.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	11.5
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



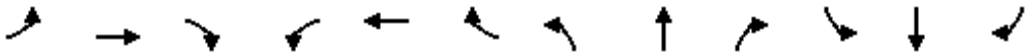
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	338	44	105	597	140	41	50	75	12	15	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		3.5	3.5	3.5	3.5	3.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	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	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3378		1752	3338		1752	1845	1556	3400	1710	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3378		1752	3338		1752	1845	1556	3400	1710	
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)	77	371	48	115	656	154	45	55	82	13	16	13
RTOR Reduction (vph)	0	17	0	0	37	0	0	0	66	0	12	0
Lane Group Flow (vph)	77	402	0	115	773	0	45	55	16	13	17	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	2.6	12.6		3.5	13.5		1.4	1.7	5.2	0.3	0.6	
Effective Green, g (s)	3.6	13.6		4.5	14.5		2.4	2.7	7.2	1.3	1.6	
Actuated g/C Ratio	0.10	0.37		0.12	0.39		0.06	0.07	0.19	0.04	0.04	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	170	1238		213	1305		113	134	302	119	74	
v/s Ratio Prot	0.04	c0.12		0.07	c0.23		0.03	c0.03	0.01	0.00	c0.01	
v/s Ratio Perm									0.00			
v/c Ratio	0.45	0.32		0.54	0.59		0.40	0.41	0.05	0.11	0.22	
Uniform Delay, d1	15.8	8.4		15.3	9.0		16.7	16.4	12.2	17.3	17.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.1		1.3	0.5		0.8	0.7	0.0	0.1	0.6	
Delay (s)	16.5	8.5		16.6	9.4		17.5	17.2	12.2	17.5	17.7	
Level of Service	B	A		B	A		B	B	B	B	B	
Approach Delay (s)		9.7			10.3			15.0			17.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



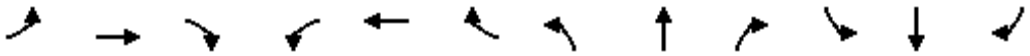
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	500	50	70	330	21	75	20	100	120	60	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		3.5	3.5	3.5	3.5	3.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3390		1752	3406		1752	1845	1559	3400	1744	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3390		1752	3406		1752	1845	1559	3400	1744	
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)	11	549	55	77	363	23	82	22	110	132	66	33
RTOR Reduction (vph)	0	12	0	0	7	0	0	0	94	0	28	0
Lane Group Flow (vph)	11	592	0	77	379	0	82	22	16	132	71	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	0.2	15.6		4.1	19.5		3.3	0.9	5.0	8.3	5.9	
Effective Green, g (s)	1.2	16.6		5.1	20.5		4.3	1.9	7.0	9.3	6.9	
Actuated g/C Ratio	0.03	0.35		0.11	0.43		0.09	0.04	0.15	0.19	0.14	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	44	1175		187	1458		157	73	228	660	251	
v/s Ratio Prot	0.01	c0.17		c0.04	0.11		c0.05	0.01	0.01	0.04	c0.04	
v/s Ratio Perm									0.00			
v/c Ratio	0.25	0.50		0.41	0.26		0.52	0.30	0.07	0.20	0.28	
Uniform Delay, d1	22.9	12.4		20.0	8.8		20.8	22.4	17.6	16.2	18.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1		0.5	0.0		1.4	0.8	0.0	0.1	0.2	
Delay (s)	24.0	12.5		20.5	8.9		22.3	23.2	17.7	16.2	18.5	
Level of Service	C	B		C	A		C	C	B	B	B	
Approach Delay (s)		12.7			10.8			20.0			17.2	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



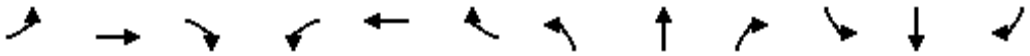
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	537	54	70	368	21	80	20	100	120	60	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		3.5	4.5		3.5	3.5	3.5	3.5	3.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3390		1752	3409		1752	1845	1558	3400	1744	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3390		1752	3409		1752	1845	1558	3400	1744	
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)	11	590	59	77	404	23	88	22	110	132	66	33
RTOR Reduction (vph)	0	13	0	0	7	0	0	0	94	0	28	0
Lane Group Flow (vph)	11	636	0	77	420	0	88	22	16	132	71	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases									8			
Actuated Green, G (s)	0.2	16.4		4.1	20.3		3.0	1.0	5.1	7.7	5.7	
Effective Green, g (s)	1.2	17.4		5.1	21.3		4.0	2.0	7.1	8.7	6.7	
Actuated g/C Ratio	0.02	0.36		0.11	0.44		0.08	0.04	0.15	0.18	0.14	
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	44	1224		185	1506		145	77	229	614	242	
v/s Ratio Prot	0.01	c0.19		c0.04	0.12		c0.05	0.01	0.01	0.04	c0.04	
v/s Ratio Perm									0.00			
v/c Ratio	0.25	0.52		0.42	0.28		0.61	0.29	0.07	0.21	0.29	
Uniform Delay, d1	23.1	12.1		20.2	8.6		21.3	22.4	17.7	16.8	18.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.2		0.6	0.0		4.8	0.7	0.0	0.1	0.2	
Delay (s)	24.1	12.3		20.7	8.6		26.2	23.2	17.8	16.9	18.9	
Level of Service	C	B		C	A		C	C	B	B	B	
Approach Delay (s)		12.5			10.4			21.7			17.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



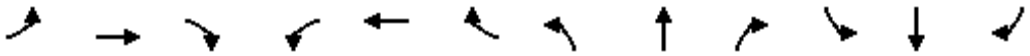
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	79	16	50	119	235	24	65	60	305	100	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	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	
Frt	1.00	0.97		1.00	0.90		1.00	0.93		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)	1752	3344		1752	3075		1752	1697		1752	1767	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	3344		1752	3075		1752	1697		1752	1767	
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)	26	87	18	55	131	258	26	71	66	335	110	37
RTOR Reduction (vph)	0	16	0	0	221	0	0	43	0	0	16	0
Lane Group Flow (vph)	26	89	0	55	168	0	26	94	0	335	131	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.4	6.7		2.2	7.5		1.4	19.9		14.1	32.6	
Effective Green, g (s)	2.4	7.7		3.2	8.5		2.4	20.9		15.1	33.6	
Actuated g/C Ratio	0.04	0.13		0.05	0.14		0.04	0.35		0.26	0.57	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	71	437		95	444		71	602		449	1008	
v/s Ratio Prot	0.01	0.03		c0.03	c0.05		0.01	c0.06		c0.19	0.07	
v/s Ratio Perm												
v/c Ratio	0.37	0.20		0.58	0.38		0.37	0.16		0.75	0.13	
Uniform Delay, d1	27.5	22.9		27.2	22.8		27.5	13.0		20.1	5.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	0.2		8.3	0.5		3.2	0.6		6.6	0.3	
Delay (s)	30.7	23.1		35.5	23.4		30.7	13.5		26.8	6.1	
Level of Service	C	C		D	C		C	B		C	A	
Approach Delay (s)		24.6			24.9			16.3			20.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



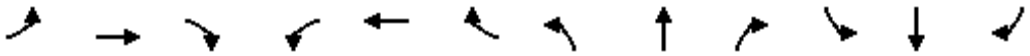
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	116	20	50	161	235	28	65	60	305	100	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.91		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)	1752	3357		1752	3113		1752	1697		1752	1751	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	3357		1752	3113		1752	1697		1752	1751	
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)	43	127	22	55	177	258	31	71	66	335	110	48
RTOR Reduction (vph)	0	19	0	0	221	0	0	43	0	0	21	0
Lane Group Flow (vph)	43	130	0	55	214	0	31	94	0	335	137	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.4	6.7		2.2	7.5		1.4	19.9		14.1	32.6	
Effective Green, g (s)	2.4	7.7		3.2	8.5		2.4	20.9		15.1	33.6	
Actuated g/C Ratio	0.04	0.13		0.05	0.14		0.04	0.35		0.26	0.57	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	71	439		95	449		71	602		449	999	
v/s Ratio Prot	0.02	0.04		c0.03	c0.07		0.02	c0.06		c0.19	0.08	
v/s Ratio Perm												
v/c Ratio	0.61	0.30		0.58	0.48		0.44	0.16		0.75	0.14	
Uniform Delay, d1	27.8	23.1		27.2	23.2		27.6	13.0		20.1	5.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.7	0.4		8.3	0.8		4.3	0.6		6.6	0.3	
Delay (s)	41.5	23.5		35.5	24.0		31.8	13.5		26.8	6.2	
Level of Service	D	C		D	C		C	B		C	A	
Approach Delay (s)		27.6			25.3			16.9			20.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



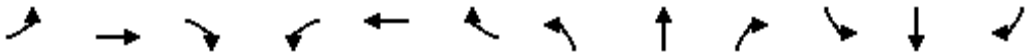
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	149	36	40	110	285	15	60	30	201	134	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.97		1.00	0.89		1.00	0.95		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)	1752	3331		1752	3044		1752	1742		1752	1787	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	3331		1752	3044		1752	1742		1752	1787	
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)	38	164	40	44	121	313	16	66	33	221	147	34
RTOR Reduction (vph)	0	34	0	0	268	0	0	20	0	0	11	0
Lane Group Flow (vph)	38	170	0	44	166	0	16	79	0	221	170	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.4	7.3		1.4	7.3		0.7	21.7		11.3	32.3	
Effective Green, g (s)	2.4	8.3		2.4	8.3		1.7	22.7		12.3	33.3	
Actuated g/C Ratio	0.04	0.14		0.04	0.14		0.03	0.39		0.21	0.58	
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)	73	479		73	438		52	685		373	1031	
v/s Ratio Prot	0.02	0.05		c0.03	c0.05		0.01	0.05		c0.13	c0.09	
v/s Ratio Perm												
v/c Ratio	0.52	0.35		0.60	0.38		0.31	0.12		0.59	0.16	
Uniform Delay, d1	27.1	22.3		27.2	22.4		27.4	11.1		20.4	5.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.5	0.5		13.2	0.6		3.3	0.3		2.5	0.3	
Delay (s)	33.6	22.7		40.4	22.9		30.8	11.5		23.0	6.0	
Level of Service	C	C		D	C		C	B		C	A	
Approach Delay (s)		24.4			24.5			14.1			15.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	43.9%	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)	45	190	41	40	153	285	19	60	30	201	134	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.97		1.00	0.90		1.00	0.95		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)	1752	3341		1752	3082		1752	1742		1752	1774	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1752	3341		1752	3082		1752	1742		1752	1774	
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)	49	209	45	44	168	313	21	66	33	221	147	44
RTOR Reduction (vph)	0	30	0	0	264	0	0	20	0	0	15	0
Lane Group Flow (vph)	49	224	0	44	217	0	21	79	0	221	176	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	2.2	9.1		1.4	8.3		0.7	21.6		11.3	32.2	
Effective Green, g (s)	3.2	10.1		2.4	9.3		1.7	22.6		12.3	33.2	
Actuated g/C Ratio	0.05	0.17		0.04	0.16		0.03	0.38		0.21	0.56	
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)	94	568		71	483		50	663		363	992	
v/s Ratio Prot	c0.03	0.07		0.03	c0.07		0.01	0.05		c0.13	c0.10	
v/s Ratio Perm												
v/c Ratio	0.52	0.39		0.62	0.45		0.42	0.12		0.61	0.18	
Uniform Delay, d1	27.4	21.9		28.1	22.7		28.4	11.9		21.4	6.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.1	0.5		15.0	0.7		5.6	0.4		2.9	0.4	
Delay (s)	32.5	22.4		43.1	23.4		34.0	12.3		24.3	6.8	
Level of Service	C	C		D	C		C	B		C	A	
Approach Delay (s)		24.0			25.0			16.1			16.2	
Approach LOS		C			C			B			B	

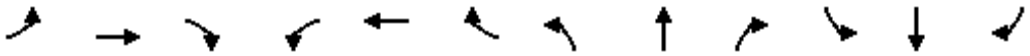
Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	220	0	0	660	255	820	0	55	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5			4.5	4.5	3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	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)	1719	3438			3438	1538	1633	1633	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1719	3438			3438	1538	1633	1633	1568			
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)	115	242	0	0	725	280	901	0	60	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	181	0	0	38	0	0	0
Lane Group Flow (vph)	115	242	0	0	725	99	450	451	22	0	0	0
Heavy Vehicles (%)	5%	5%	2%	2%	5%	5%	5%	2%	3%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	5.2	29.4			20.2	20.2	20.6	20.6	20.6			
Effective Green, g (s)	6.2	30.4			21.2	21.2	21.6	21.6	21.6			
Actuated g/C Ratio	0.10	0.51			0.35	0.35	0.36	0.36	0.36			
Clearance Time (s)	4.0	5.5			5.5	5.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	178	1742			1215	543	588	588	564			
v/s Ratio Prot	c0.07	0.07			c0.21		0.28	c0.28				
v/s Ratio Perm						0.06			0.01			
v/c Ratio	0.65	0.14			0.60	0.18	0.77	0.77	0.04			
Uniform Delay, d1	25.8	7.9			15.9	13.4	17.0	17.0	12.5			
Progression Factor	1.15	0.62			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	7.8	0.2			2.2	0.7	5.9	6.0	0.0			
Delay (s)	37.5	5.0			18.1	14.1	22.9	22.9	12.5			
Level of Service	D	A			B	B	C	C	B			
Approach Delay (s)		15.5			17.0			22.2			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

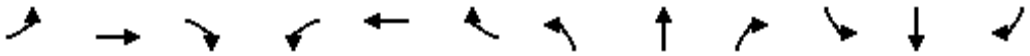
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	231	0	0	663	255	856	0	55	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5			4.5	4.5	3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	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)	1719	3438			3438	1538	1633	1633	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1719	3438			3438	1538	1633	1633	1568			
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)	118	254	0	0	729	280	941	0	60	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	182	0	0	38	0	0	0
Lane Group Flow (vph)	118	254	0	0	729	98	470	471	22	0	0	0
Heavy Vehicles (%)	5%	5%	2%	2%	5%	5%	5%	2%	3%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	5.0	29.0			20.0	20.0	21.0	21.0	21.0			
Effective Green, g (s)	6.0	30.0			21.0	21.0	22.0	22.0	22.0			
Actuated g/C Ratio	0.10	0.50			0.35	0.35	0.37	0.37	0.37			
Clearance Time (s)	4.0	5.5			5.5	5.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	172	1719			1203	538	599	599	575			
v/s Ratio Prot	c0.07	0.07			c0.21		0.29	c0.29				
v/s Ratio Perm						0.06			0.01			
v/c Ratio	0.69	0.15			0.61	0.18	0.78	0.79	0.04			
Uniform Delay, d1	26.1	8.1			16.1	13.5	16.9	16.9	12.2			
Progression Factor	1.00	0.60			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	10.8	0.2			2.3	0.7	6.7	6.7	0.0			
Delay (s)	36.9	5.0			18.4	14.3	23.6	23.6	12.2			
Level of Service	D	A			B	B	C	C	B			
Approach Delay (s)		15.1			17.2			22.9			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

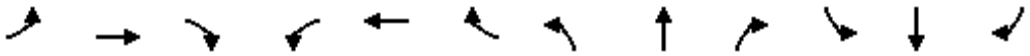
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	500	0	0	255	395	275	0	95	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5			4.5	4.5	3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	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)	1719	3438			3438	1538	1633	1633	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1719	3438			3438	1538	1633	1633	1568			
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)	231	549	0	0	280	434	302	0	104	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	266	0	0	85	0	0	0
Lane Group Flow (vph)	231	549	0	0	280	168	151	151	19	0	0	0
Heavy Vehicles (%)	5%	5%	2%	2%	5%	5%	5%	2%	3%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	14.0	40.2			22.2	22.2	9.8	9.8	9.8			
Effective Green, g (s)	15.0	41.2			23.2	23.2	10.8	10.8	10.8			
Actuated g/C Ratio	0.25	0.69			0.39	0.39	0.18	0.18	0.18			
Clearance Time (s)	4.0	5.5			5.5	5.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	430	2361			1329	595	294	294	282			
v/s Ratio Prot	c0.13	0.16			0.08		c0.09	0.09				
v/s Ratio Perm						c0.11			0.01			
v/c Ratio	0.54	0.23			0.21	0.28	0.51	0.51	0.07			
Uniform Delay, d1	19.5	3.5			12.3	12.7	22.2	22.2	20.4			
Progression Factor	0.86	0.72			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.2			0.4	1.2	1.5	1.5	0.1			
Delay (s)	18.1	2.7			12.6	13.9	23.7	23.7	20.5			
Level of Service	B	A			B	B	C	C	C			
Approach Delay (s)		7.3			13.4			22.9			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.1%	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)	211	505	0	0	260	395	302	0	95	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5			4.5	4.5	3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	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)	1719	3438			3438	1538	1633	1633	1568			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1719	3438			3438	1538	1633	1633	1568			
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)	232	555	0	0	286	434	332	0	104	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	271	0	0	84	0	0	0
Lane Group Flow (vph)	232	555	0	0	286	163	166	166	20	0	0	0
Heavy Vehicles (%)	5%	5%	2%	2%	5%	5%	5%	2%	3%	2%	2%	2%
Turn Type	Prot					Perm	Split		Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	14.0	39.5			21.5	21.5	10.5	10.5	10.5			
Effective Green, g (s)	15.0	40.5			22.5	22.5	11.5	11.5	11.5			
Actuated g/C Ratio	0.25	0.68			0.38	0.38	0.19	0.19	0.19			
Clearance Time (s)	4.0	5.5			5.5	5.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	430	2321			1289	577	313	313	301			
v/s Ratio Prot	c0.13	0.16			0.08		c0.10	0.10				
v/s Ratio Perm						c0.11			0.01			
v/c Ratio	0.54	0.24			0.22	0.28	0.53	0.53	0.07			
Uniform Delay, d1	19.5	3.8			12.8	13.1	21.8	21.8	19.9			
Progression Factor	0.86	0.72			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.2			0.4	1.2	1.7	1.7	0.1			
Delay (s)	18.1	3.0			13.2	14.3	23.5	23.5	19.9			
Level of Service	B	A			B	B	C	C	B			
Approach Delay (s)		7.4			13.9			22.7			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Volume (vph)	0	230	493	0	1360	125	95	0	380	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.0		3.5	3.5	3.5		3.5		
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		0.88		
Frt		1.00	0.85		1.00	0.85	1.00		0.85		
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (prot)		3438	1568		3438	1583	3400		2760		
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (perm)		3438	1568		3438	1583	3400		2760		
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
Adj. Flow (vph)	0	253	542	0	1495	137	104	0	418	0	0
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	66	0	0
Lane Group Flow (vph)	0	253	542	0	1495	92	104	0	352	0	0
Heavy Vehicles (%)	3%	5%	3%	2%	5%	2%	3%	2%	3%	2%	2%
Turn Type			Free			Perm	Prot		custom		
Protected Phases		2			6		4				
Permitted Phases			Free			6			4		
Actuated Green, G (s)		39.3	60.0		39.3	39.3	11.7		11.7		
Effective Green, g (s)		40.3	60.0		40.3	40.3	12.7		12.7		
Actuated g/C Ratio		0.67	1.00		0.67	0.67	0.21		0.21		
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5		
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		2309	1568		2309	1063	720		584		
v/s Ratio Prot		0.07			c0.43		0.03				
v/s Ratio Perm			0.35			0.06			c0.13		
v/c Ratio		0.11	0.35		0.65	0.09	0.14		0.60		
Uniform Delay, d1		3.5	0.0		5.7	3.4	19.2		21.4		
Progression Factor		1.00	1.00		0.33	1.53	1.00		1.00		
Incremental Delay, d2		0.1	0.6		0.5	0.0	0.1		1.8		
Delay (s)		3.6	0.6		2.3	5.3	19.3		23.1		
Level of Service		A	A		A	A	B		C		
Approach Delay (s)		1.6			2.6			22.4		0.0	
Approach LOS		A			A			C		A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Volume (vph)	0	241	514	0	1399	125	95	0	383	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.0		3.5	3.5	3.5		3.5		
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		0.88		
Frt		1.00	0.85		1.00	0.85	1.00		0.85		
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (prot)		3438	1568		3438	1583	3400		2760		
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (perm)		3438	1568		3438	1583	3400		2760		
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
Adj. Flow (vph)	0	265	565	0	1537	137	104	0	421	0	0
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	61	0	0
Lane Group Flow (vph)	0	265	565	0	1537	92	104	0	360	0	0
Heavy Vehicles (%)	3%	5%	3%	2%	5%	2%	3%	2%	3%	2%	2%
Turn Type			Free			Perm	Prot		custom		
Protected Phases		2			6		4				
Permitted Phases			Free			6			4		
Actuated Green, G (s)		39.2	60.0		39.2	39.2	11.8		11.8		
Effective Green, g (s)		40.2	60.0		40.2	40.2	12.8		12.8		
Actuated g/C Ratio		0.67	1.00		0.67	0.67	0.21		0.21		
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5		
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		2303	1568		2303	1061	725		589		
v/s Ratio Prot		0.08			c0.45		0.03				
v/s Ratio Perm			0.36			0.06			c0.13		
v/c Ratio		0.12	0.36		0.67	0.09	0.14		0.61		
Uniform Delay, d1		3.5	0.0		5.9	3.5	19.2		21.4		
Progression Factor		1.00	1.00		0.34	2.58	1.00		1.00		
Incremental Delay, d2		0.1	0.6		0.5	0.0	0.1		1.9		
Delay (s)		3.6	0.6		2.6	9.0	19.2		23.2		
Level of Service		A	A		A	A	B		C		
Approach Delay (s)		1.6			3.1			22.4		0.0	
Approach LOS		A			A			C		A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	7.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Volume (vph)	0	585	850	0	445	85	125	0	227	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.0		3.5	3.5	3.5		3.5		
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		0.88		
Frt		1.00	0.85		1.00	0.85	1.00		0.85		
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (prot)		3438	1568		3438	1583	3400		2760		
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (perm)		3438	1568		3438	1583	3400		2760		
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
Adj. Flow (vph)	0	643	934	0	489	93	137	0	249	0	0
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	212	0	0
Lane Group Flow (vph)	0	643	934	0	489	69	137	0	37	0	0
Heavy Vehicles (%)	3%	5%	3%	2%	5%	2%	3%	2%	3%	2%	2%
Turn Type			Free			Perm	Prot		custom		
Protected Phases		2			6		4				
Permitted Phases			Free			6			4		
Actuated Green, G (s)		43.2	60.0		43.2	43.2	7.8		7.8		
Effective Green, g (s)		44.2	60.0		44.2	44.2	8.8		8.8		
Actuated g/C Ratio		0.74	1.00		0.74	0.74	0.15		0.15		
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5		
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		2533	1568		2533	1166	499		405		
v/s Ratio Prot		0.19			0.14		0.04				
v/s Ratio Perm			c0.60			0.04			0.01		
v/c Ratio		0.25	0.60		0.19	0.06	0.27		0.09		
Uniform Delay, d1		2.6	0.0		2.4	2.2	22.8		22.1		
Progression Factor		1.00	1.00		0.56	2.98	1.00		1.00		
Incremental Delay, d2		0.2	1.7		0.0	0.0	0.3		0.1		
Delay (s)		2.8	1.7		1.4	6.5	23.1		22.2		
Level of Service		A	A		A	A	C		C		
Approach Delay (s)		2.1			2.2			22.5		0.0	
Approach LOS		A			A			C		A	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

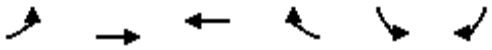
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Volume (vph)	0	591	881	0	477	85	125	0	233	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.0		3.5	3.5	3.5		3.5		
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		0.88		
Frt		1.00	0.85		1.00	0.85	1.00		0.85		
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (prot)		3438	1568		3438	1583	3400		2760		
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00		
Satd. Flow (perm)		3438	1568		3438	1583	3400		2760		
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
Adj. Flow (vph)	0	649	968	0	524	93	137	0	256	0	0
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	218	0	0
Lane Group Flow (vph)	0	649	968	0	524	69	137	0	38	0	0
Heavy Vehicles (%)	3%	5%	3%	2%	5%	2%	3%	2%	3%	2%	2%
Turn Type			Free			Perm	Prot		custom		
Protected Phases		2			6		4				
Permitted Phases			Free			6			4		
Actuated Green, G (s)		43.2	60.0		43.2	43.2	7.8		7.8		
Effective Green, g (s)		44.2	60.0		44.2	44.2	8.8		8.8		
Actuated g/C Ratio		0.74	1.00		0.74	0.74	0.15		0.15		
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5		
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		2533	1568		2533	1166	499		405		
v/s Ratio Prot		0.19			0.15		0.04				
v/s Ratio Perm			c0.62			0.04			0.01		
v/c Ratio		0.26	0.62		0.21	0.06	0.27		0.09		
Uniform Delay, d1		2.6	0.0		2.5	2.2	22.8		22.1		
Progression Factor		1.00	1.00		0.55	3.04	1.00		1.00		
Incremental Delay, d2		0.2	1.8		0.0	0.0	0.3		0.1		
Delay (s)		2.8	1.8		1.4	6.6	23.1		22.2		
Level of Service		A	A		A	A	C		C		
Approach Delay (s)		2.2			2.2			22.5		0.0	
Approach LOS		A			A			C		A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

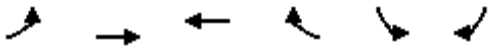
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	129	341	216	66	71	30
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)	142	375	237	73	78	33
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	310				932	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310				932	274
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	89				70	96
cM capacity (veh/h)	1234				259	758

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	142	375	310	111
Volume Left	142	0	0	78
Volume Right	0	0	73	33
cSH	1234	1700	1700	322
Volume to Capacity	0.11	0.22	0.18	0.35
Queue Length 95th (ft)	10	0	0	37
Control Delay (s)	8.3	0.0	0.0	22.0
Lane LOS	A			C
Approach Delay (s)	2.3		0.0	22.0
Approach LOS				C

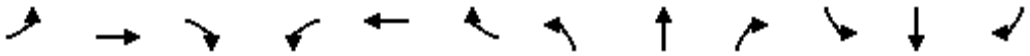
Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	45	330	343	58	143	111
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)	49	363	377	64	157	122
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	441				870	409
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	441				870	409
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				48	81
cM capacity (veh/h)	1104				304	636

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	49	363	441	279
Volume Left	49	0	0	157
Volume Right	0	0	64	122
cSH	1104	1700	1700	394
Volume to Capacity	0.04	0.21	0.26	0.71
Queue Length 95th (ft)	4	0	0	133
Control Delay (s)	8.4	0.0	0.0	33.6
Lane LOS	A			D
Approach Delay (s)	1.0		0.0	33.6
Approach LOS				D

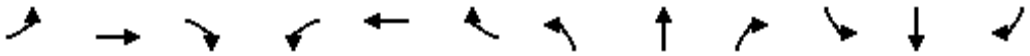
Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	124	339	1	18	277	203	1	10	35	45	5	21
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)	136	373	1	20	304	223	1	11	38	49	5	23
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	527			374			1015	1213	373	1145	1102	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	527			374			1015	1213	373	1145	1102	416
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			98			99	93	94	64	97	96
cM capacity (veh/h)	1024			1169			178	153	666	138	178	630

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	136	374	20	527	51	78
Volume Left	136	0	20	0	1	49
Volume Right	0	1	0	223	38	23
cSH	1024	1700	1169	1700	372	183
Volume to Capacity	0.13	0.22	0.02	0.31	0.14	0.43
Queue Length 95th (ft)	11	0	1	0	12	49
Control Delay (s)	9.1	0.0	8.1	0.0	16.2	38.5
Lane LOS	A		A		C	E
Approach Delay (s)	2.4		0.3		16.2	38.5
Approach LOS					C	E

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	54.5%	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)	26	477	0	23	468	32	0	4	10	252	13	93
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)	29	524	0	25	514	35	0	4	11	277	14	102
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	549			524			1255	1181	524	1177	1164	532
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	549			524			1255	1181	524	1177	1164	532
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			100	98	98	0	92	81
cM capacity (veh/h)	1005			1027			107	178	547	153	182	542

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	29	524	25	549	15	393
Volume Left	29	0	25	0	0	277
Volume Right	0	0	0	35	11	102
cSH	1005	1700	1027	1700	343	189
Volume to Capacity	0.03	0.31	0.02	0.32	0.04	2.08
Queue Length 95th (ft)	2	0	2	0	4	759
Control Delay (s)	8.7	0.0	8.6	0.0	16.0	543.5
Lane LOS	A		A		C	F
Approach Delay (s)	0.4		0.4		16.0	543.5
Approach LOS					C	F

Intersection Summary				
Average Delay	139.6			
Intersection Capacity Utilization	60.2%	ICU Level of Service		B
Analysis Period (min)	15			

2015 Base Case CEQA

Level Of Service Computation Report
FHWA Roundabout Method (Base Volume Alternative)

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Intersection #1 River Rd/Brickway

****

Average Delay (sec/veh): 4.0 Level Of Service: A

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign		
Lanes:	1			1			1			2		
Volume Module:												
Base Vol:	1	10	36	48	5	25	132	342	1	20	280	222
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	10	36	48	5	25	132	342	1	20	280	222
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1	11	40	53	6	28	147	380	1	22	311	247
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	11	40	53	6	28	147	380	1	22	311	247
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	11	40	53	6	28	147	380	1	22	311	247
PCE Module:												
AutoPCE:	1	10	37	50	5	26	136	353	1	21	289	229
TruckPCE:	0	1	3	4	0	2	11	29	0	2	23	19
ComboPCE:	0	0	2	2	0	1	6	15	0	1	12	10
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	1	12	42	56	6	29	153	397	1	23	325	258

Delay Module: >> Time Period: 0.25 hours <<

CircVolume:	606	349	85	166
MaxVolume:	873	1011	1154	2304
PedVolume:	0	0	0	0
AdjMaxVol:	873	1011	1154	2304
ApproachVol:	55	91	552	606
ApproachV/C:	0.06	0.09	0.48	0.26
ApproachDel:	4.4	3.9	5.9	2.1
ApproachLOS:	A	A	A	A
Queue:	0.2	0.3	2.7	1.1

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2015 Base Case + Project CEQA

Level Of Service Computation Report
FHWA Roundabout Method (Base Volume Alternative)

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Intersection #1 River Rd/Brickway

****

Average Delay (sec/veh): 4.0 Level Of Service: A

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign		
Lanes:	1			1			1			2		
Volume Module:												
Base Vol:	1	10	36	52	5	29	136	342	1	20	280	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	10	36	52	5	29	136	342	1	20	280	228
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1	11	40	58	6	32	151	380	1	22	311	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	11	40	58	6	32	151	380	1	22	311	253
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	11	40	58	6	32	151	380	1	22	311	253
PCE Module:												
AutoPCE:	1	10	37	54	5	30	141	353	1	21	289	236
TruckPCE:	0	1	3	4	0	2	11	29	0	2	23	19
ComboPCE:	0	0	2	2	0	1	6	15	0	1	12	10
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	1	12	42	60	6	34	158	397	1	23	325	265

Delay Module: >> Time Period: 0.25 hours <<

CircVolume:	615	349	89	171
MaxVolume:	868	1011	1152	2301
PedVolume:	0	0	0	0
AdjMaxVol:	868	1011	1152	2301
ApproachVol:	55	100	556	613
ApproachV/C:	0.06	0.10	0.48	0.27
ApproachDel:	4.4	3.9	6.0	2.1
ApproachLOS:	A	A	A	A
Queue:	0.2	0.3	2.7	1.1

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2015 Base Case CEQA

Level Of Service Computation Report
FHWA Roundabout Method (Base Volume Alternative)

****

Intersection #1 River Rd/Brickway

****

Average Delay (sec/veh): 6.0 Level Of Service: A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign		
Lanes:	1			1			1			2		
Volume Module:												
Base Vol:	0	4	10	265	13	107	30	480	1	24	475	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4	10	265	13	107	30	480	1	24	475	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	4	11	294	14	119	33	533	1	27	528	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	4	11	294	14	119	33	533	1	27	528	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	4	11	294	14	119	33	533	1	27	528	46
PCE Module:												
AutoPCE:	0	4	10	274	13	111	31	496	1	25	491	42
TruckPCE:	0	0	1	22	1	9	2	40	0	2	40	3
ComboPCE:	0	0	0	12	1	5	1	21	0	1	21	2
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	0	5	12	308	15	124	35	557	1	28	552	48

Delay Module: >> Time Period: 0.25 hours <<

CircVolume:	900	579	351	39
MaxVolume:	714	887	1011	2396
PedVolume:	0	0	0	0
AdjMaxVol:	714	887	1011	2396
ApproachVol:	16	447	593	627
ApproachV/C:	0.02	0.50	0.59	0.26
ApproachDel:	5.2	8.1	8.5	2.0
ApproachLOS:	A	A	A	A
Queue:	0.1	2.9	4.0	1.1

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2015 Base Case + Project CEQA

Level Of Service Computation Report
FHWA Roundabout Method (Base Volume Alternative)

****

Intersection #1 River Rd/Brickway

****

Average Delay (sec/veh): 6.1 Level Of Service: A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign		
Lanes:	1			1			1			2		
Volume Module:												
Base Vol:	0	4	10	270	13	111	33	480	1	24	475	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4	10	270	13	111	33	480	1	24	475	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	4	11	300	14	123	37	533	1	27	528	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	4	11	300	14	123	37	533	1	27	528	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	4	11	300	14	123	37	533	1	27	528	52
PCE Module:												
AutoPCE:	0	4	10	279	13	115	34	496	1	25	491	49
TruckPCE:	0	0	1	23	1	9	3	40	0	2	40	4
ComboPCE:	0	0	0	12	1	5	1	21	0	1	21	2
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	0	5	12	314	15	129	38	557	1	28	552	55
Delay Module: >> Time Period: 0.25 hours <<												
CircVolume:	909			579			356			43		
MaxVolume:	709			887			1008			2393		
PedVolume:	0			0			0			0		
AdjMaxVol:	709			887			1008			2393		
ApproachVol:	16			457			597			634		
ApproachV/C:	0.02			0.52			0.59			0.26		
ApproachDel:	5.2			8.3			8.6			2.0		
ApproachLOS:	A			A			A			A		
Queue:	0.1			3.0			4.0			1.1		

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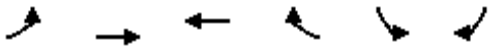
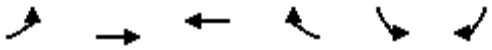


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	130	351	220	68	76	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	143	386	242	75	84	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	316				951	279
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316				951	279
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				67	95
cM capacity (veh/h)	1227				252	753

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	143	386	316	118
Volume Left	143	0	0	84
Volume Right	0	0	75	34
cSH	1227	1700	1700	312
Volume to Capacity	0.12	0.23	0.19	0.38
Queue Length 95th (ft)	10	0	0	42
Control Delay (s)	8.3	0.0	0.0	23.4
Lane LOS	A			C
Approach Delay (s)	2.2		0.0	23.4
Approach LOS				C

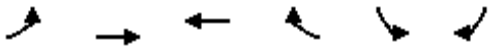
Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	130	353	222	68	76	31
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)	143	388	244	75	84	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	319				955	281
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	319				955	281
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				67	95
cM capacity (veh/h)	1225				250	750

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	143	388	319	118
Volume Left	143	0	0	84
Volume Right	0	0	75	34
cSH	1225	1700	1700	310
Volume to Capacity	0.12	0.23	0.19	0.38
Queue Length 95th (ft)	10	0	0	43
Control Delay (s)	8.3	0.0	0.0	23.5
Lane LOS	A			C
Approach Delay (s)	2.2		0.0	23.5
Approach LOS				C

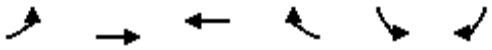
Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	46	340	350	60	145	112
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)	51	374	385	66	159	123
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	451				892	418
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	451				892	418
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				46	80
cM capacity (veh/h)	1094				294	629

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	51	374	451	282
Volume Left	51	0	0	159
Volume Right	0	0	66	123
cSH	1094	1700	1700	383
Volume to Capacity	0.05	0.22	0.27	0.74
Queue Length 95th (ft)	4	0	0	144
Control Delay (s)	8.4	0.0	0.0	36.6
Lane LOS	A			E
Approach Delay (s)	1.0		0.0	36.6
Approach LOS				E

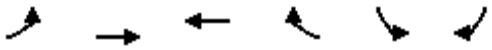
Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	46	342	352	60	145	112
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)	51	376	387	66	159	123
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	453				897	420
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	453				897	420
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				46	80
cM capacity (veh/h)	1092				292	627

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	51	376	453	282
Volume Left	51	0	0	159
Volume Right	0	0	66	123
cSH	1092	1700	1700	381
Volume to Capacity	0.05	0.22	0.27	0.74
Queue Length 95th (ft)	4	0	0	146
Control Delay (s)	8.5	0.0	0.0	37.1
Lane LOS	A			E
Approach Delay (s)	1.0		0.0	37.1
Approach LOS				E

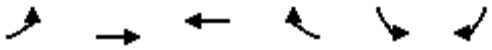
Intersection Summary			
Average Delay	9.4		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	31	626	687	165	97	32
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)	34	696	763	183	108	36
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)		658				
pX, platoon unblocked					0.75	
vC, conflicting volume	947				1619	855
vC1, stage 1 conf vol					855	
vC2, stage 2 conf vol					764	
vCu, unblocked vol	947				1659	855
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	95				64	90
cM capacity (veh/h)	721				298	356

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	34	696	947	143
Volume Left	34	0	0	108
Volume Right	0	0	183	36
cSH	721	1700	1700	311
Volume to Capacity	0.05	0.41	0.56	0.46
Queue Length 95th (ft)	4	0	0	58
Control Delay (s)	10.2	0.0	0.0	26.1
Lane LOS	B			D
Approach Delay (s)	0.5		0.0	26.1
Approach LOS				D

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	747	604	160	48	21
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)	17	830	671	178	53	23
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)		658				
pX, platoon unblocked					0.91	
vC, conflicting volume	849				1623	760
vC1, stage 1 conf vol					760	
vC2, stage 2 conf vol					863	
vCu, unblocked vol	849				1635	760
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				83	94
cM capacity (veh/h)	785				306	404

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	17	830	849	77
Volume Left	17	0	0	53
Volume Right	0	0	178	23
cSH	785	1700	1700	331
Volume to Capacity	0.02	0.49	0.50	0.23
Queue Length 95th (ft)	2	0	0	22
Control Delay (s)	9.7	0.0	0.0	19.1
Lane LOS	A			C
Approach Delay (s)	0.2		0.0	19.1
Approach LOS				C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	369	0	0	556	465	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0	3.0	3.0
Lane Util. Factor	0.95			1.00	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			1810	1752	2760
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			1810	1752	2760
Peak-hour factor, PHF	0.90	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	410	0	0	618	517	286
RTOR Reduction (vph)	0	0	0	0	0	151
Lane Group Flow (vph)	410	0	0	618	517	135
Heavy Vehicles (%)	5%	2%	2%	5%	3%	3%
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	24.6			24.6	27.4	27.4
Effective Green, g (s)	25.6			25.6	28.4	28.4
Actuated g/C Ratio	0.43			0.43	0.47	0.47
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)	1467			772	829	1306
v/s Ratio Prot	0.12			c0.34	c0.30	
v/s Ratio Perm						0.05
v/c Ratio	0.28			0.80	0.62	0.10
Uniform Delay, d1	11.2			15.0	11.8	8.8
Progression Factor	0.80			1.00	1.00	1.00
Incremental Delay, d2	0.1			6.0	3.5	0.2
Delay (s)	9.0			20.9	15.3	8.9
Level of Service	A			C	B	A
Approach Delay (s)	9.0			20.9	13.0	
Approach LOS	A			C	B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

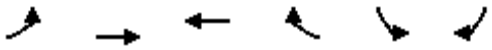
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	485	0	0	460	450	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0	3.0	3.0
Lane Util. Factor	0.95			1.00	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			1810	1752	2760
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			1810	1752	2760
Peak-hour factor, PHF	0.90	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	539	0	0	511	500	589
RTOR Reduction (vph)	0	0	0	0	0	259
Lane Group Flow (vph)	539	0	0	511	500	331
Heavy Vehicles (%)	5%	2%	2%	5%	3%	3%
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	23.0			23.0	29.0	29.0
Effective Green, g (s)	24.0			24.0	30.0	30.0
Actuated g/C Ratio	0.40			0.40	0.50	0.50
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)	1375			724	876	1380
v/s Ratio Prot	0.16			c0.28	c0.29	
v/s Ratio Perm						0.12
v/c Ratio	0.39			0.71	0.57	0.24
Uniform Delay, d1	12.8			15.0	10.5	8.5
Progression Factor	1.32			1.00	1.00	1.00
Incremental Delay, d2	0.2			3.1	2.7	0.4
Delay (s)	17.1			18.2	13.2	8.9
Level of Service	B			B	B	A
Approach Delay (s)	17.1			18.2	10.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

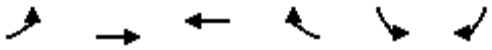
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	336	706	0	110	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1810	1810		1752	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1810	1810		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	0	373	784	0	122	268
RTOR Reduction (vph)	0	0	0	0	0	151
Lane Group Flow (vph)	0	373	784	0	122	117
Heavy Vehicles (%)	2%	5%	5%	2%	3%	3%
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		33.2	33.2		18.8	18.8
Effective Green, g (s)		34.2	34.2		19.8	19.8
Actuated g/C Ratio		0.57	0.57		0.33	0.33
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)		1032	1032		578	517
v/s Ratio Prot		0.21	c0.43		0.07	
v/s Ratio Perm						c0.07
v/c Ratio		0.36	0.76		0.21	0.23
Uniform Delay, d1		7.0	9.8		14.5	14.5
Progression Factor		1.00	1.31		1.00	1.00
Incremental Delay, d2		0.2	2.5		0.8	1.0
Delay (s)		7.2	15.3		15.3	15.6
Level of Service		A	B		B	B
Approach Delay (s)		7.2	15.3		15.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

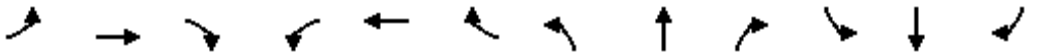
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	567	732	0	166	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1810	1810		1752	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1810	1810		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	0	630	813	0	184	134
RTOR Reduction (vph)	0	0	0	0	0	93
Lane Group Flow (vph)	0	630	813	0	184	41
Heavy Vehicles (%)	2%	5%	5%	2%	3%	3%
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		34.5	34.5		17.5	17.5
Effective Green, g (s)		35.5	35.5		18.5	18.5
Actuated g/C Ratio		0.59	0.59		0.31	0.31
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)		1071	1071		540	483
v/s Ratio Prot		0.35	c0.45		c0.10	
v/s Ratio Perm						0.03
v/c Ratio		0.59	0.76		0.34	0.09
Uniform Delay, d1		7.7	9.1		16.0	14.7
Progression Factor		1.00	0.83		1.00	1.00
Incremental Delay, d2		0.8	2.9		1.7	0.3
Delay (s)		8.5	10.4		17.7	15.1
Level of Service		A	B		B	B
Approach Delay (s)		8.5	10.4		16.6	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	109.2%	ICU Level of Service	H
Analysis Period (min)	15		

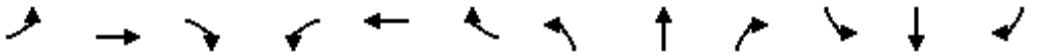
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	363	128	479	170	57	25	7	72	217	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
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	1747		1752	1810	1568	1752	1845	1568	1752	1769	
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	1747		1752	1810	1568	1752	1845	1568	1752	1769	
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)	2	403	142	532	189	63	28	8	80	241	8	3
RTOR Reduction (vph)	0	11	0	0	0	22	0	0	50	0	2	0
Lane Group Flow (vph)	2	534	0	532	189	41	28	8	30	241	9	0
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	1.2	41.3		35.9	76.0	76.0	4.8	6.0	41.9	17.9	19.1	
Effective Green, g (s)	2.2	42.3		36.9	77.0	77.0	5.8	7.0	43.9	18.9	20.1	
Actuated g/C Ratio	0.02	0.36		0.32	0.66	0.66	0.05	0.06	0.37	0.16	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	33	631		552	1190	1031	87	110	588	283	304	
v/s Ratio Prot	0.00	c0.31		c0.30	0.10		c0.02	0.00	0.02	c0.14	0.00	
v/s Ratio Perm						0.03						
v/c Ratio	0.06	0.85		0.96	0.16	0.04	0.32	0.07	0.05	0.85	0.03	
Uniform Delay, d1	56.4	34.4		39.4	7.7	7.1	53.8	52.0	23.3	47.7	40.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	10.2		29.1	0.1	0.0	2.1	1.3	0.0	21.1	0.2	
Delay (s)	57.2	44.6		68.6	7.7	7.1	55.9	53.3	23.4	68.8	40.5	
Level of Service	E	D		E	A	A	E	D	C	E	D	
Approach Delay (s)		44.7			49.0			33.3			67.6	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

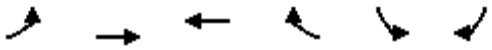
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	210	41	135	338	140	117	54	428	105	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
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	1770		1752	1810	1568	1752	1845	1568	1752	1785	
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	1770		1752	1810	1568	1752	1845	1568	1752	1785	
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)	2	233	46	150	376	156	130	60	476	117	22	6
RTOR Reduction (vph)	0	11	0	0	0	96	0	0	152	0	4	0
Lane Group Flow (vph)	2	268	0	150	376	60	130	60	324	117	24	0
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	1.1	14.5		8.9	22.3	22.3	4.5	16.3	25.2	4.5	16.3	
Effective Green, g (s)	2.1	15.5		9.9	23.3	23.3	5.5	17.3	27.2	5.5	17.3	
Actuated g/C Ratio	0.03	0.26		0.16	0.39	0.39	0.09	0.29	0.45	0.09	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	61	456		288	701	607	160	530	708	160	513	
v/s Ratio Prot	0.00	0.15		c0.09	c0.21		c0.07	0.03	c0.21	0.07	0.01	
v/s Ratio Perm						0.04						
v/c Ratio	0.03	0.59		0.52	0.54	0.10	0.81	0.11	0.46	0.73	0.05	
Uniform Delay, d1	28.1	19.6		23.0	14.3	11.8	26.8	15.8	11.4	26.6	15.5	
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	0.2	1.9		1.7	0.8	0.1	25.9	0.4	0.5	15.8	0.2	
Delay (s)	28.3	21.5		24.7	15.1	11.8	52.8	16.2	11.9	42.4	15.7	
Level of Service	C	C		C	B	B	D	B	B	D	B	
Approach Delay (s)		21.5			16.4			20.3			37.2	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

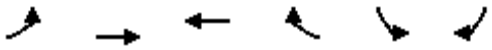
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	30	790	635	175	65	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1810	1764		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1810	1764		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	878	706	194	72	33
RTOR Reduction (vph)	0	0	17	0	0	30
Lane Group Flow (vph)	33	878	883	0	72	3
Heavy Vehicles (%)	3%	5%	5%	3%	3%	3%
Turn Type	Prot					Perm
Protected Phases	7	4	8		1	
Permitted Phases						1
Actuated Green, G (s)	0.5	32.2	27.7		3.2	3.2
Effective Green, g (s)	1.5	33.2	28.7		4.2	4.2
Actuated g/C Ratio	0.03	0.76	0.66		0.10	0.10
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)	61	1385	1167		170	152
v/s Ratio Prot	0.02	c0.49	c0.50		c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.54	0.63	0.76		0.42	0.02
Uniform Delay, d1	20.6	2.3	5.0		18.5	17.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.4	1.0	2.9		1.7	0.1
Delay (s)	30.1	3.3	7.8		20.2	17.8
Level of Service	C	A	A		C	B
Approach Delay (s)		4.3	7.8		19.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

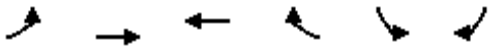
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	55	645	690	175	105	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1810	1767		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1810	1767		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	717	767	194	117	44
RTOR Reduction (vph)	0	0	15	0	0	39
Lane Group Flow (vph)	61	717	946	0	117	5
Heavy Vehicles (%)	3%	5%	5%	3%	3%	3%
Turn Type	Prot					Perm
Protected Phases	7	4	8		1	
Permitted Phases						1
Actuated Green, G (s)	1.9	36.4	30.5		4.3	4.3
Effective Green, g (s)	2.9	37.4	31.5		5.3	5.3
Actuated g/C Ratio	0.06	0.77	0.65		0.11	0.11
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)	104	1390	1143		191	171
v/s Ratio Prot	0.03	c0.40	c0.54		c0.07	
v/s Ratio Perm						0.00
v/c Ratio	0.59	0.52	0.83		0.61	0.03
Uniform Delay, d1	22.3	2.2	6.5		20.7	19.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.2	0.3	5.0		5.7	0.1
Delay (s)	30.5	2.5	11.6		26.4	19.5
Level of Service	C	A	B		C	B
Approach Delay (s)		4.7	11.6		24.5	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

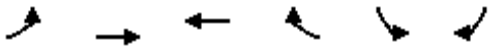
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	58	654	697	175	105	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1810	1767		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1810	1767		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	64	727	774	194	117	47
RTOR Reduction (vph)	0	0	15	0	0	41
Lane Group Flow (vph)	64	727	953	0	117	6
Heavy Vehicles (%)	3%	5%	5%	3%	3%	3%
Turn Type	Prot					Perm
Protected Phases	7	4	8		1	
Permitted Phases						1
Actuated Green, G (s)	1.4	36.2	30.8		5.0	5.0
Effective Green, g (s)	2.4	37.2	31.8		6.0	6.0
Actuated g/C Ratio	0.05	0.76	0.65		0.12	0.12
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)	85	1369	1142		214	191
v/s Ratio Prot	c0.04	0.40	c0.54		c0.07	
v/s Ratio Perm						0.00
v/c Ratio	0.75	0.53	0.83		0.55	0.03
Uniform Delay, d1	23.1	2.4	6.7		20.3	19.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	30.8	0.4	5.4		2.8	0.1
Delay (s)	53.9	2.8	12.1		23.2	19.1
Level of Service	D	A	B		C	B
Approach Delay (s)		7.0	12.1		22.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	31	797	639	175	65	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0		3.0	3.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	1810	1764		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1752	1810	1764		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	886	710	194	72	34
RTOR Reduction (vph)	0	0	17	0	0	31
Lane Group Flow (vph)	34	886	887	0	72	3
Heavy Vehicles (%)	3%	5%	5%	3%	3%	3%
Turn Type	Prot					Perm
Protected Phases	7	4	8		1	
Permitted Phases						1
Actuated Green, G (s)	0.5	32.4	27.9		3.2	3.2
Effective Green, g (s)	1.5	33.4	28.9		4.2	4.2
Actuated g/C Ratio	0.03	0.77	0.66		0.10	0.10
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)	60	1387	1169		169	151
v/s Ratio Prot	0.02	c0.49	c0.50		c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.57	0.64	0.76		0.43	0.02
Uniform Delay, d1	20.7	2.3	5.0		18.6	17.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	11.7	1.0	2.9		1.7	0.1
Delay (s)	32.4	3.3	7.9		20.3	17.9
Level of Service	C	A	A		C	B
Approach Delay (s)		4.4	7.9		19.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	420	0	0	610	475	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0	3.0	3.0
Lane Util. Factor	0.95			1.00	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			1810	1752	2760
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			1810	1752	2760
Peak-hour factor, PHF	0.90	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	467	0	0	678	528	289
RTOR Reduction (vph)	0	0	0	0	0	158
Lane Group Flow (vph)	467	0	0	678	528	131
Heavy Vehicles (%)	5%	2%	2%	5%	3%	3%
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	25.9			25.9	26.1	26.1
Effective Green, g (s)	26.9			26.9	27.1	27.1
Actuated g/C Ratio	0.45			0.45	0.45	0.45
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)	1541			811	791	1247
v/s Ratio Prot	0.14			c0.37	c0.30	
v/s Ratio Perm						0.05
v/c Ratio	0.30			0.84	0.67	0.10
Uniform Delay, d1	10.6			14.6	12.9	9.5
Progression Factor	0.92			1.00	1.00	1.00
Incremental Delay, d2	0.1			7.5	4.4	0.2
Delay (s)	9.9			22.1	17.4	9.6
Level of Service	A			C	B	A
Approach Delay (s)	9.9			22.1	14.6	
Approach LOS	A			C	B	

Intersection Summary			
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	422	0	0	611	475	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0	3.0	3.0
Lane Util. Factor	0.95			1.00	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			1810	1752	2760
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			1810	1752	2760
Peak-hour factor, PHF	0.90	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	469	0	0	679	528	289
RTOR Reduction (vph)	0	0	0	0	0	158
Lane Group Flow (vph)	469	0	0	679	528	131
Heavy Vehicles (%)	5%	2%	2%	5%	3%	3%
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	25.9			25.9	26.1	26.1
Effective Green, g (s)	26.9			26.9	27.1	27.1
Actuated g/C Ratio	0.45			0.45	0.45	0.45
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)	1541			811	791	1247
v/s Ratio Prot	0.14			c0.38	c0.30	
v/s Ratio Perm						0.05
v/c Ratio	0.30			0.84	0.67	0.10
Uniform Delay, d1	10.6			14.6	12.9	9.5
Progression Factor	0.88			1.00	1.00	1.00
Incremental Delay, d2	0.1			7.5	4.4	0.2
Delay (s)	9.4			22.2	17.4	9.6
Level of Service	A			C	B	A
Approach Delay (s)	9.4			22.2	14.6	
Approach LOS	A			C	B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	520	0	0	485	475	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0	3.0	3.0
Lane Util. Factor	0.95			1.00	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			1810	1752	2760
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			1810	1752	2760
Peak-hour factor, PHF	0.90	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	578	0	0	539	528	611
RTOR Reduction (vph)	0	0	0	0	0	241
Lane Group Flow (vph)	578	0	0	539	528	370
Heavy Vehicles (%)	5%	2%	2%	5%	3%	3%
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	23.9			23.9	28.1	28.1
Effective Green, g (s)	24.9			24.9	29.1	29.1
Actuated g/C Ratio	0.41			0.41	0.49	0.49
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)	1427			751	850	1339
v/s Ratio Prot	0.17			c0.30	c0.30	
v/s Ratio Perm						0.13
v/c Ratio	0.41			0.72	0.62	0.28
Uniform Delay, d1	12.3			14.6	11.4	9.2
Progression Factor	0.80			1.00	1.00	1.00
Incremental Delay, d2	0.2			3.3	3.4	0.5
Delay (s)	10.0			17.9	14.8	9.7
Level of Service	A			B	B	A
Approach Delay (s)	10.0			17.9	12.1	
Approach LOS	A			B	B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

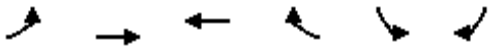
c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	521	0	0	486	475	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0	3.0	3.0
Lane Util. Factor	0.95			1.00	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			1810	1752	2760
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			1810	1752	2760
Peak-hour factor, PHF	0.90	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	579	0	0	540	528	611
RTOR Reduction (vph)	0	0	0	0	0	242
Lane Group Flow (vph)	579	0	0	540	528	369
Heavy Vehicles (%)	5%	2%	2%	5%	3%	3%
Turn Type						Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	24.0			24.0	28.0	28.0
Effective Green, g (s)	25.0			25.0	29.0	29.0
Actuated g/C Ratio	0.42			0.42	0.48	0.48
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)	1433			754	847	1334
v/s Ratio Prot	0.17			c0.30	c0.30	
v/s Ratio Perm						0.13
v/c Ratio	0.40			0.72	0.62	0.28
Uniform Delay, d1	12.3			14.6	11.5	9.2
Progression Factor	0.79			1.00	1.00	1.00
Incremental Delay, d2	0.2			3.3	3.4	0.5
Delay (s)	9.9			17.8	14.9	9.8
Level of Service	A			B	B	A
Approach Delay (s)	9.9			17.8	12.1	
Approach LOS	A			B	B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

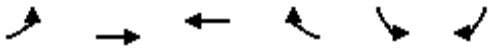
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	350	715	0	160	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1810	1810		1752	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1810	1810		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	0	389	794	0	178	283
RTOR Reduction (vph)	0	0	0	0	0	149
Lane Group Flow (vph)	0	389	794	0	178	134
Heavy Vehicles (%)	2%	5%	5%	2%	3%	3%
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		33.4	33.4		18.6	18.6
Effective Green, g (s)		34.4	34.4		19.6	19.6
Actuated g/C Ratio		0.57	0.57		0.33	0.33
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)		1038	1038		572	512
v/s Ratio Prot		0.21	c0.44		c0.10	
v/s Ratio Perm						0.09
v/c Ratio		0.37	0.76		0.31	0.26
Uniform Delay, d1		7.0	9.7		15.1	14.9
Progression Factor		1.00	1.04		1.00	1.00
Incremental Delay, d2		0.2	2.4		1.4	1.2
Delay (s)		7.2	12.5		16.6	16.1
Level of Service		A	B		B	B
Approach Delay (s)		7.2	12.5		16.3	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

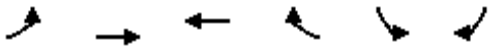
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	359	716	0	160	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1810	1810		1752	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1810	1810		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	0	399	796	0	178	290
RTOR Reduction (vph)	0	0	0	0	0	149
Lane Group Flow (vph)	0	399	796	0	178	142
Heavy Vehicles (%)	2%	5%	5%	2%	3%	3%
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		33.5	33.5		18.5	18.5
Effective Green, g (s)		34.5	34.5		19.5	19.5
Actuated g/C Ratio		0.58	0.58		0.32	0.32
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)		1041	1041		569	510
v/s Ratio Prot		0.22	c0.44		c0.10	
v/s Ratio Perm						0.09
v/c Ratio		0.38	0.76		0.31	0.28
Uniform Delay, d1		7.0	9.7		15.2	15.0
Progression Factor		1.00	1.08		1.00	1.00
Incremental Delay, d2		0.2	2.4		1.4	1.3
Delay (s)		7.2	12.9		16.6	16.4
Level of Service		A	B		B	B
Approach Delay (s)		7.2	12.9		16.5	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

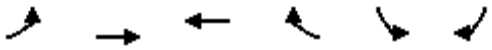
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	595	770	0	190	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1810	1810		1752	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1810	1810		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	0	661	856	0	211	150
RTOR Reduction (vph)	0	0	0	0	0	106
Lane Group Flow (vph)	0	661	856	0	211	44
Heavy Vehicles (%)	2%	5%	5%	2%	3%	3%
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		35.5	35.5		16.5	16.5
Effective Green, g (s)		36.5	36.5		17.5	17.5
Actuated g/C Ratio		0.61	0.61		0.29	0.29
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)		1101	1101		511	457
v/s Ratio Prot		0.37	c0.47		c0.12	
v/s Ratio Perm						0.03
v/c Ratio		0.60	0.78		0.41	0.10
Uniform Delay, d1		7.2	8.7		17.1	15.5
Progression Factor		1.00	1.11		1.00	1.00
Incremental Delay, d2		0.9	3.1		2.5	0.4
Delay (s)		8.2	12.8		19.6	15.9
Level of Service		A	B		B	B
Approach Delay (s)		8.2	12.8		18.0	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

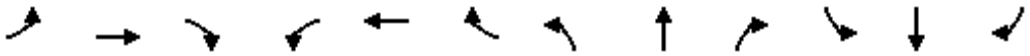
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (vph)	0	602	771	0	190	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1810	1810		1752	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1810	1810		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.90	0.90
Adj. Flow (vph)	0	669	857	0	211	153
RTOR Reduction (vph)	0	0	0	0	0	108
Lane Group Flow (vph)	0	669	857	0	211	45
Heavy Vehicles (%)	2%	5%	5%	2%	3%	3%
Turn Type						Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		35.4	35.4		16.6	16.6
Effective Green, g (s)		36.4	36.4		17.6	17.6
Actuated g/C Ratio		0.61	0.61		0.29	0.29
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)		1098	1098		514	460
v/s Ratio Prot		0.37	c0.47		c0.12	
v/s Ratio Perm						0.03
v/c Ratio		0.61	0.78		0.41	0.10
Uniform Delay, d1		7.4	8.8		17.0	15.4
Progression Factor		1.00	1.11		1.00	1.00
Incremental Delay, d2		1.0	3.3		2.4	0.4
Delay (s)		8.3	13.1		19.4	15.8
Level of Service		A	B		B	B
Approach Delay (s)		8.3	13.1		17.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	112.4%	ICU Level of Service	H
Analysis Period (min)	15		

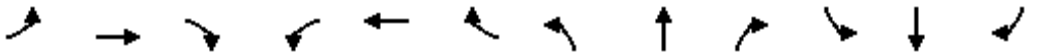
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	365	131	480	175	75	46	25	100	235	11	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
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	1747		1752	1810	1568	1752	1845	1568	1752	1775	
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	1747		1752	1810	1568	1752	1845	1568	1752	1775	
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)	4	406	146	533	194	83	51	28	111	261	12	4
RTOR Reduction (vph)	0	11	0	0	0	28	0	0	69	0	3	0
Lane Group Flow (vph)	4	541	0	533	194	55	51	28	42	261	13	0
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	1.3	41.8		36.0	76.5	76.5	7.0	6.0	42.0	17.1	16.1	
Effective Green, g (s)	2.3	42.8		37.0	77.5	77.5	8.0	7.0	44.0	18.1	17.1	
Actuated g/C Ratio	0.02	0.37		0.32	0.66	0.66	0.07	0.06	0.38	0.15	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	34	640		555	1200	1040	120	110	590	271	260	
v/s Ratio Prot	0.00	c0.31		c0.30	0.11		c0.03	0.02	0.03	c0.15	0.01	
v/s Ratio Perm						0.04						
v/c Ratio	0.12	0.84		0.96	0.16	0.05	0.42	0.25	0.07	0.96	0.05	
Uniform Delay, d1	56.3	34.0		39.2	7.4	6.9	52.2	52.5	23.4	49.1	42.9	
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	1.5	10.0		28.4	0.1	0.0	2.4	5.5	0.1	44.3	0.4	
Delay (s)	57.8	44.0		67.6	7.5	6.9	54.7	58.0	23.4	93.3	43.3	
Level of Service	E	D		E	A	A	D	E	C	F	D	
Approach Delay (s)		44.1			47.0			36.9			90.4	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM Average Control Delay	51.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	116.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

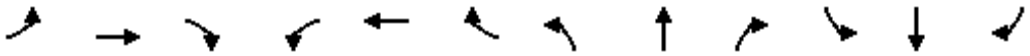
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	365	132	489	175	75	49	25	112	235	11	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
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	1746		1752	1810	1568	1752	1845	1568	1752	1775	
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	1746		1752	1810	1568	1752	1845	1568	1752	1775	
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)	4	406	147	543	194	83	54	28	124	261	12	4
RTOR Reduction (vph)	0	11	0	0	0	28	0	0	77	0	3	0
Lane Group Flow (vph)	4	542	0	543	194	55	54	28	47	261	13	0
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	1.3	41.8		36.2	76.7	76.7	7.0	6.0	42.2	16.9	15.9	
Effective Green, g (s)	2.3	42.8		37.2	77.7	77.7	8.0	7.0	44.2	17.9	16.9	
Actuated g/C Ratio	0.02	0.37		0.32	0.66	0.66	0.07	0.06	0.38	0.15	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	34	639		558	1203	1042	120	110	593	268	257	
v/s Ratio Prot	0.00	c0.31		c0.31	0.11		c0.03	0.02	0.03	c0.15	0.01	
v/s Ratio Perm						0.04						
v/c Ratio	0.12	0.85		0.97	0.16	0.05	0.45	0.25	0.08	0.97	0.05	
Uniform Delay, d1	56.3	34.1		39.4	7.4	6.8	52.3	52.5	23.3	49.3	43.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	10.2		31.1	0.1	0.0	2.7	5.5	0.1	47.4	0.4	
Delay (s)	57.8	44.2		70.5	7.4	6.8	55.0	58.0	23.4	96.7	43.4	
Level of Service	E	D		E	A	A	E	E	C	F	D	
Approach Delay (s)		44.3			49.1			36.4			93.6	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM Average Control Delay	52.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	116.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

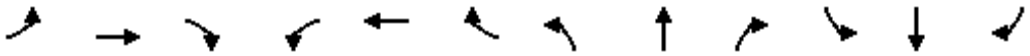
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	215	40	145	345	165	125	64	450	145	23	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
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	1773		1752	1810	1568	1752	1845	1568	1752	1786	
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	1773		1752	1810	1568	1752	1845	1568	1752	1786	
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)	4	239	44	161	383	183	139	71	500	161	26	7
RTOR Reduction (vph)	0	10	0	0	0	112	0	0	164	0	5	0
Lane Group Flow (vph)	4	273	0	161	383	71	139	71	336	161	28	0
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	0.4	15.1		7.7	22.4	22.4	6.8	15.3	23.0	6.1	14.6	
Effective Green, g (s)	1.4	16.1		8.7	23.4	23.4	7.8	16.3	25.0	7.1	15.6	
Actuated g/C Ratio	0.02	0.27		0.14	0.39	0.39	0.13	0.27	0.42	0.12	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	41	474		253	704	609	227	500	651	207	463	
v/s Ratio Prot	0.00	0.15		c0.09	c0.21		0.08	0.04	c0.21	c0.09	0.02	
v/s Ratio Perm						0.05						
v/c Ratio	0.10	0.58		0.64	0.54	0.12	0.61	0.14	0.52	0.78	0.06	
Uniform Delay, d1	28.8	19.1		24.3	14.3	11.8	24.8	16.6	13.1	25.8	16.8	
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	1.0	1.7		5.2	0.9	0.1	4.8	0.6	0.7	16.6	0.2	
Delay (s)	29.8	20.8		29.4	15.1	11.9	29.6	17.2	13.8	42.4	17.0	
Level of Service	C	C		C	B	B	C	B	B	D	B	
Approach Delay (s)		20.9			17.5			17.2			38.1	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	215	43	150	345	165	127	64	458	145	24	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
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	1770		1752	1810	1568	1752	1845	1568	1752	1788	
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	1770		1752	1810	1568	1752	1845	1568	1752	1788	
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)	4	239	48	167	383	183	141	71	509	161	27	7
RTOR Reduction (vph)	0	11	0	0	0	121	0	0	128	0	5	0
Lane Group Flow (vph)	4	276	0	167	383	62	141	71	381	161	29	0
Heavy Vehicles (%)	3%	5%	3%	3%	5%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot		Perm	Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases						8						
Actuated Green, G (s)	0.4	13.9		7.0	20.5	20.5	7.2	19.0	26.0	7.8	19.6	
Effective Green, g (s)	1.4	14.9		8.0	21.5	21.5	8.2	20.0	28.0	8.8	20.6	
Actuated g/C Ratio	0.02	0.23		0.13	0.34	0.34	0.13	0.31	0.44	0.14	0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	39	414		220	611	529	226	579	689	242	578	
v/s Ratio Prot	0.00	0.16		c0.10	c0.21		0.08	0.04	c0.24	c0.09	0.02	
v/s Ratio Perm						0.04						
v/c Ratio	0.10	0.67		0.76	0.63	0.12	0.62	0.12	0.55	0.67	0.05	
Uniform Delay, d1	30.5	22.1		26.9	17.7	14.6	26.3	15.6	13.2	26.1	14.8	
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	1.2	4.0		13.9	2.0	0.1	5.3	0.4	1.0	6.7	0.2	
Delay (s)	31.7	26.1		40.9	19.7	14.7	31.6	16.0	14.2	32.8	15.0	
Level of Service	C	C		D	B	B	C	B	B	C	B	
Approach Delay (s)		26.2			23.3			17.8			29.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group