Appendix D

Total Future Levels of Service

ZONING COMMISSION
District of Columbia
CASE NO.05-03
EXHIBIT NO.1E3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		1.00			1.00					1.00	0.95	
Frt		0.92			1.00					1.00	1.00	
Flt Protected		1.00			0.96					0.95	1.00	
Satd. Flow (prot)		1713			1786					1770	3527	
Flt Permitted		1.00			0.67					0.95	1.00	
Satd. Flow (perm)		1713			1248					1770	3527	
Volume (vph)	0	26	46	149	21	0	0	0	0	256	394	5
Peak-hour factor, PHF	0.25	0.56	0.68	0.82	0.71	0.25	0.25	0.25	0.25	0.88	0.94	0.50
Adj. Flow (vph)	0	46	68	182	30	0	0	0	0	291	419	10
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	60	0	0	212	0	0	0	0	291	427	0
Turn Type				Prot						Prot		
Protected Phases		8		7	4					1	1 2	
Permitted Phases					4							
Actuated Green, G (s)		16.0			26.0					19.0	43.0	
Effective Green, g (s)		17.0			27.0					21.0	45.0	
Actuated g/C Ratio		0.21			0.34					0.26	0.56	
Clearance Time (s)		5.0			5.0					6.0		
Lane Grp Cap (vph)		364			462					465	1984	
v/s Ratio Prot		0.04			c0.03					c0.16	c0.12	
v/s Ratio Perm					c0.12							
v/c Ratio		0.17			0.46					0.63	0.22	
Uniform Delay, d1		25.7			20.8					26.0	8.7	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		1.0			3.3					6.2	0.2	
Delay (s)		26.7			24.0					32.3	9.0	
Level of Service		C			C					C	A	
Approach Delay (s)		26.7			24.0			0.0			18.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00						0.95	0.95	1.00	0.95	
Frt		0.95						0.88	0.85	1.00	0.98	
Flt Protected		1.00						0.99	1.00	0.95	1.00	
Satd. Flow (prot)		1766						1536	1504	1770	3472	
Flt Permitted		1.00						0.84	1.00	0.95	1.00	
Satd. Flow (perm)		1766						1298	1504	1770	3472	
Volume (vph)	0	26	5	0	0	0	31	0	861	97	400	41
Peak-hour factor, PHF	0.25	0.82	0.25	0.25	0.25	0.25	0.52	0.25	0.92	0.94	0.90	0.64
Adj. Flow (vph)	0	32	20	0	0	0	60	0	936	103	444	64
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	36	0	0	0	0	0	352	644	103	494	0
Turn Type							Perm		Perm	Prot		
Protected Phases		4						2		1	1 5 2	
Permitted Phases							2		2			
Actuated Green, G (s)		13.0						20.0	20.0	17.0	57.0	
Effective Green, g (s)		14.0						21.0	21.0	18.0	58.0	
Actuated g/C Ratio		0.18						0.26	0.26	0.22	0.72	
Clearance Time (s)		5.0						5.0	5.0	5.0		
Lane Grp Cap (vph)		309						341	395	398	2517	
v/s Ratio Prot		c0.02								c0.06	c0.14	
v/s Ratio Perm								0.27	c0.43			
v/c Ratio		0.11						1.03	1.63	0.26	0.20	
Uniform Delay, d1		27.8						29.5	29.5	25.5	3.5	
Progression Factor		1.00						1.00	1.00	0.67	1.56	
Incremental Delay, d2		0.8						57.3	295.0	1.3	0.1	
Delay (s)		28.5						86.8	324.5	18.2	5.6	
Level of Service		C						F	F	B	A	
Approach Delay (s)		28.5			0.0			240.5			7.8	
Approach LOS		C			A			F			A	

Intersection Summary			
HCM Average Control Delay	148.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		1.00						0.95			0.95	
Frt		0.95						1.00			1.00	
Flt Protected		0.97						1.00			1.00	
Satd. Flow (prot)		1711						3533			3532	
Flt Permitted		0.89						0.94			1.00	
Satd. Flow (perm)		1572						3335			3532	
Volume (vph)	10	0	5	0	0	0	26	909	0	0	358	5
Peak-hour factor, PHF	0.67	0.25	0.50	0.25	0.25	0.25	0.67	0.86	0.25	0.25	0.78	0.88
Adj. Flow (vph)	15	0	10	0	0	0	39	1057	0	0	459	6
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	17	0	0	0	0	0	1096	0	0	464	0
Turn Type	Perm			Perm			custom					
Protected Phases		4			8		1 9	6 9			2	
Permitted Phases	4			8			6				2	
Actuated Green, G (s)		20.0						53.0			22.0	
Effective Green, g (s)		21.0						54.0			23.0	
Actuated g/C Ratio		0.24						0.62			0.26	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		379						2131			934	
v/s Ratio Prot								c0.16			0.13	
v/s Ratio Perm		c0.01						c0.16				
v/c Ratio		0.05						0.51			0.50	
Uniform Delay, d1		25.3						9.2			27.1	
Progression Factor		1.00						0.20			1.00	
Incremental Delay, d2		0.2						0.3			1.9	
Delay (s)		25.5						2.2			29.0	
Level of Service		C						A			C	
Approach Delay (s)		25.5			0.0			2.2			29.0	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		0.99			1.00						0.89	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3498			3522						1640	
Flt Permitted		1.00			0.92						0.94	
Satd. Flow (perm)		3498			3265						1560	
Volume (vph)	0	740	46	31	332	0	0	0	0	56	0	195
Peak-hour factor, PHF	0.25	0.88	0.66	0.75	0.90	0.25	0.25	0.25	0.25	0.86	0.25	0.61
Adj. Flow (vph)	0	841	70	41	369	0	0	0	0	65	0	320
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	204	0
Lane Group Flow (vph)	0	904	0	0	410	0	0	0	0	0	181	0
Turn Type				pm+pt			Perm			Perm		
Protected Phases		2		1 8	6 8			13			9	
Permitted Phases		2		6 8	8		13			9		
Actuated Green, G (s)		22.0			62.0						15.0	
Effective Green, g (s)		23.0			63.0						16.0	
Actuated g/C Ratio		0.26			0.72						0.18	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		925			2471						287	
v/s Ratio Prot		c0.26			c0.07							
v/s Ratio Perm					0.05						c0.12	
v/c Ratio		0.98			0.17						0.63	
Uniform Delay, d1		31.7			3.8						32.8	
Progression Factor		1.00			0.01						1.00	
Incremental Delay, d2		24.5			0.1						10.1	
Delay (s)		56.2			0.2						42.9	
Level of Service		E			A						D	
Approach Delay (s)		56.2			0.2			0.0			42.9	
Approach LOS		E			A			A			D	

Intersection Summary			
HCM Average Control Delay	39.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frt		0.94			0.97			1.00			0.99	
Flt Protected		0.98			0.98			0.99			1.00	
Satd. Flow (prot)		1718			1772			3506			3486	
Flt Permitted		0.86			0.87			0.84			0.86	
Satd. Flow (perm)		1518			1573			2969			2994	
Volume (vph)	21	10	26	31	15	10	72	753	21	10	359	21
Peak-hour factor, PHF	0.50	0.75	0.63	0.79	0.40	0.45	0.73	0.92	0.80	0.25	0.81	0.54
Adj. Flow (vph)	42	13	41	39	38	22	99	818	26	40	443	39
RTOR Reduction (vph)	0	33	0	0	16	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	63	0	0	83	0	0	941	0	0	516	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2	2		6	6	
Actuated Green, G (s)		9.4			9.4			37.2			37.2	
Effective Green, g (s)		10.4			10.4			38.2			38.2	
Actuated g/C Ratio		0.18			0.18			0.67			0.67	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		279			289			2004			2021	
v/s Ratio Prot												
v/s Ratio Perm		0.04			c0.05			c0.32			0.17	
v/c Ratio		0.22			0.29			0.47			0.26	
Uniform Delay, d1		19.7			19.9			4.4			3.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.6			0.2			0.1	
Delay (s)		20.1			20.5			4.6			3.7	
Level of Service		C			C			A			A	
Approach Delay (s)		20.1			20.5			4.6			3.7	
Approach LOS		C			C			A			A	

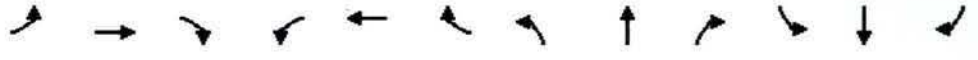
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	69	26	0	3	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	75	28	0	3	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			272			
pX, platoon unblocked						
vC, conflicting volume	28				103	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	28				103	28
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	97
cM capacity (veh/h)	1585				895	1047

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	75	28	33
Volume Left	0	0	3
Volume Right	0	0	29
cSH	1700	1700	1029
Volume to Capacity	0.04	0.02	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			0.95	0.95		0.95	1.00			
Frt	1.00	1.00			0.88	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1561	1504		3533	1583			
Flt Permitted	0.06	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	120	1863			1561	1504		3533	1583			
Volume (vph)	36	265	0	0	176	1348	40	1221	62	0	0	0
Peak-hour factor, PHF	0.75	0.65	0.25	0.25	0.87	0.88	0.75	0.91	0.73	0.25	0.25	0.25
Adj. Flow (vph)	48	408	0	0	202	1532	53	1342	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	39	0	0	0
Lane Group Flow (vph)	48	408	0	0	938	796	0	1395	47	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	60.0	60.0			60.0	60.0		47.0	47.0			
Effective Green, g (s)	62.0	62.0			62.0	62.0		50.0	50.0			
Actuated g/C Ratio	0.52	0.52			0.52	0.52		0.42	0.42			
Clearance Time (s)	6.0	6.0			6.0	6.0		7.0	7.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	62	963			807	777		1472	660			
v/s Ratio Prot		0.22			c0.60							
v/s Ratio Perm	0.40					0.53		0.39	0.03			
v/c Ratio	0.77	0.42			1.16	1.02		0.95	0.07			
Uniform Delay, d1	23.4	17.9			29.0	29.0		33.7	21.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	44.2	0.3			86.5	38.6		13.9	0.2			
Delay (s)	67.6	18.2			115.5	67.6		47.7	21.2			
Level of Service	E	B			F	E		D	C			
Approach Delay (s)		23.4			93.5			46.1			0.0	
Approach LOS		C			F			D			A	

Intersection Summary			
HCM Average Control Delay	65.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	282	169	46	19	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	307	184	50	21	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		231	206			
pX, platoon unblocked						
vC, conflicting volume	234				515	209
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	234				515	209
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1334				520	832

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	307	234	21
Volume Left	0	0	21
Volume Right	0	50	0
cSH	1334	1700	520
Volume to Capacity	0.00	0.14	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	12.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.2
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	26	0	134	2471	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	0	146	2686	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				300		
pX, platoon unblocked	0.62					
vC, conflicting volume	1634	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1407	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	100	91			
cM capacity (veh/h)	73	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	28	1041	1791
Volume Left	28	146	0
Volume Right	0	0	0
cSH	73	1622	1700
Volume to Capacity	0.39	0.09	1.05
Queue Length 95th (ft)	37	7	0
Control Delay (s)	82.6	2.3	0.0
Lane LOS	F	A	
Approach Delay (s)	82.6	0.8	
Approach LOS	F		

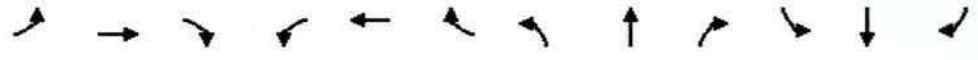
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	0	0	0	153	625
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	0	166	679
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			281			
pX, platoon unblocked						
vC, conflicting volume	672	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	672	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			90	
cM capacity (veh/h)	349	1084			1622	

Direction, Lane #	WB 1	SB 1	SB 2
Volume Total	11	393	453
Volume Left	11	166	0
Volume Right	0	0	0
cSH	349	1622	1700
Volume to Capacity	0.03	0.10	0.27
Queue Length 95th (ft)	2	9	0
Control Delay (s)	15.6	3.7	0.0
Lane LOS	C	A	
Approach Delay (s)	15.6	1.7	
Approach LOS	C		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		1.00			1.00					1.00	0.95	
Frt		0.96			1.00					1.00	1.00	
Flt Protected		1.00			0.97					0.95	1.00	
Satd. Flow (prot)		1783			1800					1770	3535	
Flt Permitted		1.00			0.56					0.95	1.00	
Satd. Flow (perm)		1783			1052					1770	3535	
Volume (vph)	0	67	41	200	103	0	0	0	0	923	1244	5
Peak-hour factor, PHF	0.25	0.57	0.75	0.84	0.99	0.25	0.25	0.25	0.25	0.88	0.94	0.50
Adj. Flow (vph)	0	118	55	238	104	0	0	0	0	1049	1323	10
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	154	0	0	342	0	0	0	0	1049	1333	0
Turn Type				Prot						Prot		
Protected Phases		8		7	4					1	1 2	
Permitted Phases					4							
Actuated Green, G (s)		16.0			26.0					31.0	53.0	
Effective Green, g (s)		17.0			27.0					33.0	55.0	
Actuated g/C Ratio		0.19			0.30					0.37	0.61	
Clearance Time (s)		5.0			5.0					6.0		
Lane Grp Cap (vph)		337			365					649	2160	
v/s Ratio Prot		0.09			c0.06					c0.59	c0.38	
v/s Ratio Perm					c0.22							
v/c Ratio		0.46			0.94					1.62	0.62	
Uniform Delay, d1		32.4			30.7					28.5	10.9	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		4.4			33.6					284.4	1.3	
Delay (s)		36.8			64.2					312.9	12.3	
Level of Service		D			E					F	B	
Approach Delay (s)		36.8			64.2			0.0			144.7	
Approach LOS		D			E			A			F	

Intersection Summary			
HCM Average Control Delay	128.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00						0.95	0.95	1.00	0.95	
Frt		0.96						0.90	0.85	1.00	1.00	
Flt Protected		1.00						0.98	1.00	0.95	1.00	
Satd. Flow (prot)		1793						1571	1504	1770	3529	
Flt Permitted		1.00						0.45	1.00	0.95	1.00	
Satd. Flow (perm)		1793						718	1504	1770	3529	
Volume (vph)	0	72	31	0	0	0	26	0	325	113	1111	15
Peak-hour factor, PHF	0.25	0.72	0.81	0.25	0.25	0.25	0.69	0.25	0.96	0.73	0.91	0.63
Adj. Flow (vph)	0	100	38	0	0	0	38	0	339	155	1221	24
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	123	0	0	0	0	0	106	271	155	1244	0
Turn Type							Perm		Perm	Prot		
Protected Phases		4						2		1	1 5 2	
Permitted Phases							2		2			
Actuated Green, G (s)		13.0						11.0	11.0	36.0	67.0	
Effective Green, g (s)		14.0						12.0	12.0	37.0	68.0	
Actuated g/C Ratio		0.16						0.13	0.13	0.41	0.76	
Clearance Time (s)		5.0						5.0	5.0	5.0		
Lane Grp Cap (vph)		279						96	201	728	2666	
v/s Ratio Prot		c0.07								0.09	c0.35	
v/s Ratio Perm								0.15	c0.18			
v/c Ratio		0.44						1.10	1.35	0.21	0.47	
Uniform Delay, d1		34.4						39.0	39.0	17.1	4.2	
Progression Factor		1.00						0.61	0.63	0.59	0.27	
Incremental Delay, d2		5.0						122.3	185.7	0.2	0.2	
Delay (s)		39.4						146.3	210.1	10.3	1.3	
Level of Service		D						F	F	B	A	
Approach Delay (s)		39.4			0.0			192.2			2.3	
Approach LOS		D			A			F			A	

Intersection Summary			
HCM Average Control Delay	42.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	0.95	0.95						0.95			0.95	
Frt	1.00	0.85						1.00			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1681	1504						3531			3534	
Flt Permitted	0.76	1.00						0.91			1.00	
Satd. Flow (perm)	1340	1504						3218			3534	
Volume (vph)	5	0	26	0	0	0	15	386	0	0	834	10
Peak-hour factor, PHF	0.67	0.25	0.50	0.25	0.25	0.25	0.67	0.86	0.25	0.25	0.78	0.88
Adj. Flow (vph)	7	0	52	0	0	0	22	449	0	0	1069	11
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	7	7	0	0	0	0	0	471	0	0	1079	0
Turn Type	Perm			Perm			custom			Perm		
Protected Phases		4			8		1 9	6 9			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	11.0	11.0						65.0			46.0	
Effective Green, g (s)	12.0	12.0						66.0			47.0	
Actuated g/C Ratio	0.13	0.13						0.73			0.52	
Clearance Time (s)	5.0	5.0									5.0	
Lane Grp Cap (vph)	179	201						2412			1846	
v/s Ratio Prot		0.00						c0.03			c0.31	
v/s Ratio Perm	c0.01							0.11				
v/c Ratio	0.04	0.03						0.20			0.58	
Uniform Delay, d1	34.0	34.0						3.7			14.8	
Progression Factor	1.00	1.00						0.12			0.85	
Incremental Delay, d2	0.4	0.3						0.2			1.2	
Delay (s)	34.4	34.3						0.6			13.8	
Level of Service	C	C						A			B	
Approach Delay (s)		34.3			0.0			0.6			13.8	
Approach LOS		C			A			A			B	

Intersection Summary				
HCM Average Control Delay	10.7	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		0.97			1.00						0.97	
Flt Protected		1.00			1.00						0.96	
Satd. Flow (prot)		3431			3525						1744	
Flt Permitted		1.00			0.86						0.81	
Satd. Flow (perm)		3431			3054						1467	
Volume (vph)	0	396	87	77	783	0	0	0	0	21	0	5
Peak-hour factor, PHF	0.25	0.89	0.76	0.99	0.90	0.25	0.25	0.25	0.25	0.85	0.25	0.82
Adj. Flow (vph)	0	445	114	78	870	0	0	0	0	25	0	6
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	534	0	0	948	0	0	0	0	0	26	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1 8	6 8			13			9	
Permitted Phases	2	2		6 8	8		13			9		
Actuated Green, G (s)		46.0			68.0						12.0	
Effective Green, g (s)		47.0			69.0						13.0	
Actuated g/C Ratio		0.52			0.77						0.14	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		1792			2436						212	
v/s Ratio Prot		0.16			c0.08							
v/s Ratio Perm					c0.22						c0.02	
v/c Ratio		0.30			0.39						0.12	
Uniform Delay, d1		12.2			3.5						33.5	
Progression Factor		0.64			0.04						1.00	
Incremental Delay, d2		0.4			0.4						1.2	
Delay (s)		8.3			0.5						34.7	
Level of Service		A			A						C	
Approach Delay (s)		8.3			0.5			0.0			34.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frt		0.99			0.96			0.99			1.00	
Flt Protected		0.96			0.99			1.00			1.00	
Satd. Flow (prot)		1770			1771			3493			3524	
Flt Permitted		0.78			0.95			0.86			0.95	
Satd. Flow (perm)		1427			1698			3008			3349	
Volume (vph)	31	5	5	15	15	26	31	427	26	5	783	15
Peak-hour factor, PHF	0.58	0.65	0.88	0.79	0.33	1.00	0.91	0.91	0.72	0.58	0.87	0.63
Adj. Flow (vph)	53	8	6	19	45	26	34	469	36	9	900	24
RTOR Reduction (vph)	0	4	0	0	16	0	0	6	0	0	2	0
Lane Group Flow (vph)	0	63	0	0	74	0	0	533	0	0	931	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2	2		6	6	
Actuated Green, G (s)		31.0			31.0			49.0			49.0	
Effective Green, g (s)		32.0			32.0			50.0			50.0	
Actuated g/C Ratio		0.36			0.36			0.56			0.56	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		507			604			1671			1861	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.04			0.18			c0.28	
v/c Ratio		0.12			0.12			0.32			0.50	
Uniform Delay, d1		19.6			19.5			10.8			12.3	
Progression Factor		1.00			1.00			1.00			0.62	
Incremental Delay, d2		0.5			0.4			0.5			0.9	
Delay (s)		20.1			20.0			11.3			8.5	
Level of Service		C			B			B			A	
Approach Delay (s)		20.1			20.0			11.3			8.5	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

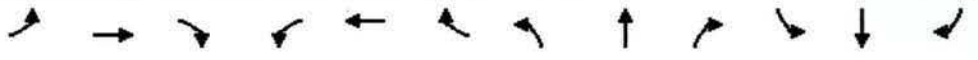
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	58	108	0	49	258
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	63	117	0	53	280
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			272			
pX, platoon unblocked						
vC, conflicting volume	117				180	117
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117				180	117
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	70
cM capacity (veh/h)	1471				809	935

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	63	117	334
Volume Left	0	0	53
Volume Right	0	0	280
cSH	1700	1700	912
Volume to Capacity	0.04	0.07	0.37
Queue Length 95th (ft)	0	0	42
Control Delay (s)	0.0	0.0	11.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			0.95	0.95		0.95	1.00			
Frt	1.00	1.00			0.98	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1770	1863			1735	1504		3510	1583			
Flt Permitted	0.50	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	927	1863			1735	1504		3510	1583			
Volume (vph)	36	1071	0	0	268	262	51	325	154	0	0	0
Peak-hour factor, PHF	0.90	0.93	0.25	0.25	0.88	0.76	0.66	0.85	0.95	0.25	0.25	0.25
Adj. Flow (vph)	40	1152	0	0	305	345	77	382	162	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	94	0	0	0
Lane Group Flow (vph)	40	1152	0	0	351	299	0	459	68	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	77.7	77.7			77.7	77.7		29.3	29.3			
Effective Green, g (s)	79.7	79.7			79.7	79.7		32.3	32.3			
Actuated g/C Ratio	0.66	0.66			0.66	0.66		0.27	0.27			
Clearance Time (s)	6.0	6.0			6.0	6.0		7.0	7.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	616	1237			1152	999		945	426			
v/s Ratio Prot		c0.62			0.20							
v/s Ratio Perm	0.04					0.20		0.13	0.04			
v/c Ratio	0.06	0.93			0.30	0.30		0.49	0.16			
Uniform Delay, d1	7.1	17.7			8.5	8.4		36.9	33.5			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.0	12.5			0.2	0.2		1.8	0.8			
Delay (s)	7.1	30.2			8.6	8.6		38.7	34.3			
Level of Service	A	C			A	A		D	C			
Approach Delay (s)		29.4			8.6			37.5			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	989	302	17	118	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1075	328	18	128	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		212	226			
pX, platoon unblocked	0.93				0.95	0.93
vC, conflicting volume	347				1412	338
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	299				1378	289
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				15	100
cM capacity (veh/h)	1176				152	699

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1075	347	128
Volume Left	0	0	128
Volume Right	0	18	0
cSH	1176	1700	152
Volume to Capacity	0.00	0.20	0.85
Queue Length 95th (ft)	0	0	141
Control Delay (s)	0.0	0.0	95.2
Lane LOS			F
Approach Delay (s)	0.0	0.0	95.2
Approach LOS			F

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	145	0	24	600	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	0	26	652	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				310		
pX, platoon unblocked	0.92					
vC, conflicting volume	378	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	234	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	100	98			
cM capacity (veh/h)	663	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	158	243	435
Volume Left	158	26	0
Volume Right	0	0	0
cSH	663	1622	1700
Volume to Capacity	0.24	0.02	0.26
Queue Length 95th (ft)	23	1	0
Control Delay (s)	12.1	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	12.1	0.3	
Approach LOS	B		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	0	0	0	35	2117
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	0	0	0	38	2301
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			294			
pX, platoon unblocked						
vC, conflicting volume	1227	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1227	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	64	100			98	
cM capacity (veh/h)	167	1084			1622	

Direction, Lane #	WB 1	SB 1	SB 2
Volume Total	60	805	1534
Volume Left	60	38	0
Volume Right	0	0	0
cSH	167	1622	1700
Volume to Capacity	0.36	0.02	0.90
Queue Length 95th (ft)	38	2	0
Control Delay (s)	38.2	0.6	0.0
Lane LOS	E	A	
Approach Delay (s)	38.2	0.2	
Approach LOS	E		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.95		1.00	1.00			1.00			0.95	
Frt		0.98		1.00	1.00			0.98			1.00	
Flt Protected		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		3476		1770	1863			1825			3527	
Flt Permitted		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)		3476		1770	1863			1825			3527	
Volume (vph)	0	282	46	149	21	0	0	56	10	0	395	5
Peak-hour factor, PHF	0.25	0.56	0.68	0.82	0.71	0.25	0.25	0.25	0.25	0.88	0.94	0.50
Adj. Flow (vph)	0	504	68	182	30	0	0	224	40	0	420	10
RTOR Reduction (vph)	0	13	0	0	0	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	559	0	182	30	0	0	256	0	0	428	0
Turn Type	Perm			Prot			Perm					
Protected Phases		8		7	4			6			2	
Permitted Phases	8				4		6					
Actuated Green, G (s)		23.0		19.0	47.0			22.0			22.0	
Effective Green, g (s)		24.0		20.0	48.0			24.0			24.0	
Actuated g/C Ratio		0.30		0.25	0.60			0.30			0.30	
Clearance Time (s)		5.0		5.0	5.0			6.0			6.0	
Lane Grp Cap (vph)		1043		443	1118			548			1058	
v/s Ratio Prot		c0.16		c0.10	0.02			c0.14			0.12	
v/s Ratio Perm												
v/c Ratio		0.54		0.41	0.03			0.47			0.40	
Uniform Delay, d1		23.4		25.1	6.5			22.8			22.3	
Progression Factor		0.77		1.00	1.00			0.44			1.00	
Incremental Delay, d2		2.0		2.8	0.0			1.7			1.2	
Delay (s)		20.0		27.9	6.5			11.8			23.5	
Level of Service		C		C	A			B			C	
Approach Delay (s)		20.0			24.9			11.8			23.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.6%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	4.0		4.0	
Lane Util. Factor		1.00						0.95	0.95		0.95	
Frt		0.95						0.99	0.85		0.98	
Flt Protected		1.00						1.00	1.00		0.99	
Satd. Flow (prot)		1766						1742	1504		3454	
Flt Permitted		1.00						0.91	1.00		0.65	
Satd. Flow (perm)		1766						1600	1504		2257	
Volume (vph)	0	26	5	0	0	0	31	159	702	97	400	41
Peak-hour factor, PHF	0.25	0.82	0.25	0.25	0.25	0.25	0.52	0.25	0.92	0.94	0.90	0.64
Adj. Flow (vph)	0	32	20	0	0	0	60	636	763	103	444	64
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	35	0	0	0	0	0	754	705	0	600	0
Turn Type	Perm						Perm		Perm	pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)		12.0						47.0	47.0		59.0	
Effective Green, g (s)		13.0						48.0	48.0		59.0	
Actuated g/C Ratio		0.16						0.60	0.60		0.74	
Clearance Time (s)		5.0						5.0	5.0		4.0	
Lane Grp Cap (vph)		287						960	902		1769	
v/s Ratio Prot		c0.02									c0.03	
v/s Ratio Perm								c0.47	0.47		0.22	
v/c Ratio		0.12						0.79	0.78		0.34	
Uniform Delay, d1		28.6						12.1	12.1		3.7	
Progression Factor		1.00						1.00	1.00		1.19	
Incremental Delay, d2		0.9						6.4	6.7		0.5	
Delay (s)		29.5						18.5	18.7		4.9	
Level of Service		C						B	B		A	
Approach Delay (s)		29.5			0.0			18.6			4.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0			4.0	
Lane Util. Factor		1.00						0.95			0.95	
Frt		0.95						1.00			1.00	
Flt Protected		0.97						1.00			1.00	
Satd. Flow (prot)		1711						3533			3532	
Flt Permitted		0.89						0.94			1.00	
Satd. Flow (perm)		1572						3335			3532	
Volume (vph)	10	0	5	0	0	0	26	909	0	0	359	5
Peak-hour factor, PHF	0.67	0.25	0.50	0.25	0.25	0.25	0.67	0.86	0.25	0.25	0.78	0.88
Adj. Flow (vph)	15	0	10	0	0	0	39	1057	0	0	460	6
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	17	0	0	0	0	0	1096	0	0	465	0
Turn Type	Perm			Perm			custom					
Protected Phases		4			8		1 9	6 9			2	
Permitted Phases	4			8			6				2	
Actuated Green, G (s)		20.0						53.0			22.0	
Effective Green, g (s)		21.0						54.0			23.0	
Actuated g/C Ratio		0.24						0.62			0.26	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		379						2131			934	
v/s Ratio Prot								c0.16			0.13	
v/s Ratio Perm		c0.01						c0.16				
v/c Ratio		0.05						0.51			0.50	
Uniform Delay, d1		25.3						9.2			27.1	
Progression Factor		1.00						0.20			1.00	
Incremental Delay, d2		0.2						0.3			1.9	
Delay (s)		25.5						2.2			29.0	
Level of Service		C						A			C	
Approach Delay (s)		25.5			0.0			2.2			29.0	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		0.99			1.00						0.89	
Flt Protected		1.00			1.00						0.99	
Satd. Flow (prot)		3499			3522						1640	
Flt Permitted		1.00			0.92						0.94	
Satd. Flow (perm)		3499			3265						1560	
Volume (vph)	0	743	46	31	333	0	0	0	0	56	0	195
Peak-hour factor, PHF	0.25	0.88	0.66	0.75	0.90	0.25	0.25	0.25	0.25	0.86	0.25	0.61
Adj. Flow (vph)	0	844	70	41	370	0	0	0	0	65	0	320
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	204	0
Lane Group Flow (vph)	0	907	0	0	411	0	0	0	0	0	181	0
Turn Type				pm+pt			Perm			Perm		
Protected Phases		2		1 8	6 8			13			9	
Permitted Phases		2		6 8	8		13			9		
Actuated Green, G (s)		22.0			62.0						15.0	
Effective Green, g (s)		23.0			63.0						16.0	
Actuated g/C Ratio		0.26			0.72						0.18	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		925			2471						287	
v/s Ratio Prot		c0.26			c0.07							
v/s Ratio Perm					0.05						c0.12	
v/c Ratio		0.98			0.17						0.63	
Uniform Delay, d1		31.8			3.8						32.8	
Progression Factor		1.00			0.01						1.00	
Incremental Delay, d2		25.2			0.1						10.1	
Delay (s)		56.9			0.2						42.9	
Level of Service		E			A						D	
Approach Delay (s)		56.9			0.2			0.0			42.9	
Approach LOS		E			A			A			D	

Intersection Summary			
HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frt		0.94			0.97			1.00			0.99	
Flt Protected		0.98			0.98			0.99			1.00	
Satd. Flow (prot)		1718			1772			3506			3486	
Flt Permitted		0.86			0.87			0.84			0.86	
Satd. Flow (perm)		1518			1573			2969			2994	
Volume (vph)	21	10	26	31	15	10	72	753	21	10	359	21
Peak-hour factor, PHF	0.50	0.75	0.63	0.79	0.40	0.45	0.73	0.92	0.80	0.25	0.81	0.54
Adj. Flow (vph)	42	13	41	39	38	22	99	818	26	40	443	39
RTOR Reduction (vph)	0	33	0	0	16	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	63	0	0	83	0	0	941	0	0	516	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2	2		6	6	
Actuated Green, G (s)		9.4			9.4			37.2			37.2	
Effective Green, g (s)		10.4			10.4			38.2			38.2	
Actuated g/C Ratio		0.18			0.18			0.67			0.67	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		279			289			2004			2021	
v/s Ratio Prot												
v/s Ratio Perm		0.04			c0.05			c0.32			0.17	
v/c Ratio		0.22			0.29			0.47			0.26	
Uniform Delay, d1		19.7			19.9			4.4			3.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.6			0.2			0.1	
Delay (s)		20.1			20.5			4.6			3.7	
Level of Service		C			C			A			A	
Approach Delay (s)		20.1			20.5			4.6			3.7	
Approach LOS		C			C			A			A	

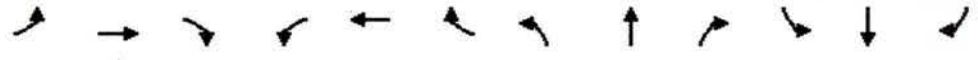
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		0.97	
Frt		1.00	1.00		0.99	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1863	1863		3409	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1863	1863		3409	
Volume (vph)	0	69	26	0	259	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	75	28	0	282	29
RTOR Reduction (vph)	0	0	0	0	10	0
Lane Group Flow (vph)	0	75	28	0	301	0
Turn Type						
Protected Phases		4	8		6	
Permitted Phases						
Actuated Green, G (s)		35.0	35.0		34.0	
Effective Green, g (s)		36.0	36.0		36.0	
Actuated g/C Ratio		0.45	0.45		0.45	
Clearance Time (s)		5.0	5.0		6.0	
Lane Grp Cap (vph)		838	838		1534	
v/s Ratio Prot		c0.04	0.02		c0.09	
v/s Ratio Perm						
v/c Ratio		0.09	0.03		0.20	
Uniform Delay, d1		12.6	12.3		13.3	
Progression Factor		1.00	1.34		1.00	
Incremental Delay, d2		0.2	0.1		0.3	
Delay (s)		12.8	16.5		13.6	
Level of Service		B	B		B	
Approach Delay (s)		12.8	16.5		13.6	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			0.95	0.95		0.95	1.00			
Frt	1.00	1.00			0.88	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (prot)	1770	1863			1561	1504		3535	1583			
Flt Permitted	0.06	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	110	1863			1561	1504		3535	1583			
Volume (vph)	36	275	0	0	176	1348	26	1179	51	0	0	0
Peak-hour factor, PHF	0.75	0.65	0.25	0.25	0.87	0.88	0.75	0.91	0.73	0.25	0.25	0.25
Adj. Flow (vph)	48	423	0	0	202	1532	35	1296	70	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	33	0	0	0
Lane Group Flow (vph)	48	423	0	0	938	796	0	1331	37	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	66.0	66.0			66.0	66.0		41.0	41.0			
Effective Green, g (s)	68.0	68.0			68.0	68.0		44.0	44.0			
Actuated g/C Ratio	0.57	0.57			0.57	0.57		0.37	0.37			
Clearance Time (s)	6.0	6.0			6.0	6.0		7.0	7.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	62	1056			885	852		1296	580			
v/s Ratio Prot		0.23			c0.60							
v/s Ratio Perm	0.44					0.53		0.38	0.02			
v/c Ratio	0.77	0.40			1.06	0.93		1.03	0.06			
Uniform Delay, d1	20.1	14.6			26.0	23.9		38.0	24.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	44.2	0.3			47.4	17.0		32.1	0.2			
Delay (s)	64.3	14.8			73.4	40.9		70.1	24.9			
Level of Service	E	B			E	D		E	C			
Approach Delay (s)		19.9			58.5			67.9			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM Average Control Delay	57.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	292	169	32	19	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	317	184	35	21	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		231	206			
pX, platoon unblocked						
vC, conflicting volume	218				360	201
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	218				360	201
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1348				612	806

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	106	212	218	21
Volume Left	0	0	0	21
Volume Right	0	0	35	0
cSH	1348	1700	1700	612
Volume to Capacity	0.00	0.12	0.13	0.03
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	11.1
Lane LOS				B
Approach Delay (s)	0.0		0.0	11.1
Approach LOS				B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	26	0	92	2471	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	0	100	2686	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				300		
pX, platoon unblocked	0.64					
vC, conflicting volume	1543	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1287	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	100	94			
cM capacity (veh/h)	94	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	28	995	1791
Volume Left	28	100	0
Volume Right	0	0	0
cSH	94	1622	1700
Volume to Capacity	0.30	0.06	1.05
Queue Length 95th (ft)	28	5	0
Control Delay (s)	59.2	1.6	0.0
Lane LOS	F	A	
Approach Delay (s)	59.2	0.6	
Approach LOS	F		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	0	0	56	153	390
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	61	166	424
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			281			
pX, platoon unblocked						
vC, conflicting volume	545	0			61	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	545	0			61	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			89	
cM capacity (veh/h)	418	1084			1541	

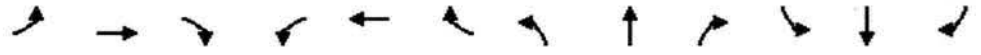
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	11	61	308	283
Volume Left	11	0	166	0
Volume Right	0	61	0	0
cSH	418	1700	1541	1700
Volume to Capacity	0.03	0.04	0.11	0.17
Queue Length 95th (ft)	2	0	9	0
Control Delay (s)	13.8	0.0	4.5	0.0
Lane LOS	B		A	
Approach Delay (s)	13.8	0.0	2.4	
Approach LOS	B			

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		0.95		1.00	1.00			1.00			0.95	
Frt		1.00		1.00	1.00			0.92			1.00	
Flt Protected		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		3523		1770	1863			1707			3535	
Flt Permitted		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)		3523		1770	1863			1707			3535	
Volume (vph)	0	989	41	200	103	0	0	13	21	0	1244	5
Peak-hour factor, PHF	0.25	0.57	0.75	0.84	0.99	0.25	0.25	0.25	0.25	0.88	0.94	0.50
Adj. Flow (vph)	0	1735	55	238	104	0	0	52	84	0	1323	10
RTOR Reduction (vph)	0	2	0	0	0	0	0	56	0	0	1	0
Lane Group Flow (vph)	0	1788	0	238	104	0	0	80	0	0	1332	0
Turn Type	Perm			Prot			Perm					
Protected Phases		8		7	4			6			2	
Permitted Phases	8				4		6					
Actuated Green, G (s)		37.0		9.0	51.0			28.0			28.0	
Effective Green, g (s)		38.0		10.0	52.0			30.0			30.0	
Actuated g/C Ratio		0.42		0.11	0.58			0.33			0.33	
Clearance Time (s)		5.0		5.0	5.0			6.0			6.0	
Lane Grp Cap (vph)		1487		197	1076			569			1178	
v/s Ratio Prot		c0.51		c0.13	0.06			0.05			c0.38	
v/s Ratio Perm												
v/c Ratio		1.20		1.21	0.10			0.14			1.13	
Uniform Delay, d1		26.0		40.0	8.5			21.0			30.0	
Progression Factor		0.76		1.00	1.00			1.68			1.00	
Incremental Delay, d2		97.3		131.4	0.2			0.4			70.1	
Delay (s)		117.1		171.4	8.7			35.8			100.1	
Level of Service		F		F	A			D			F	
Approach Delay (s)		117.1			121.9			35.8			100.1	
Approach LOS		F			F			D			F	

Intersection Summary					
HCM Average Control Delay	108.2	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.18				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	84.3%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕	↱		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	4.0		4.0	
Lane Util. Factor		1.00						0.95	0.95		0.95	
Frt		0.96						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		0.99	
Satd. Flow (prot)		1793						1761	1504		3511	
Flt Permitted		1.00						0.79	1.00		0.74	
Satd. Flow (perm)		1793						1400	1504		2628	
Volume (vph)	0	72	31	0	0	0	26	90	236	113	1111	15
Peak-hour factor, PHF	0.25	0.72	0.81	0.25	0.25	0.25	0.69	0.25	0.96	0.73	0.91	0.63
Adj. Flow (vph)	0	100	38	0	0	0	38	360	246	155	1221	24
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	123	0	0	0	0	0	398	246	0	1399	0
Turn Type	Perm						Perm		Perm	pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4						2		2	6		
Actuated Green, G (s)		17.0						46.0	46.0		63.0	
Effective Green, g (s)		18.0						47.0	47.0		64.0	
Actuated g/C Ratio		0.20						0.52	0.52		0.71	
Clearance Time (s)		5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)		359						731	785		1996	
v/s Ratio Prot		c0.07									c0.10	
v/s Ratio Perm								0.28	0.16		c0.40	
v/c Ratio		0.34						0.54	0.31		0.70	
Uniform Delay, d1		30.9						14.4	12.3		7.5	
Progression Factor		1.00						0.43	0.36		0.74	
Incremental Delay, d2		2.6						2.9	1.0		0.2	
Delay (s)		33.5						9.1	5.4		5.7	
Level of Service		C						A	A		A	
Approach Delay (s)		33.5			0.0			7.7			5.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0			4.0	
Lane Util. Factor	0.95	0.95						0.95			0.95	
Frt	1.00	0.85						1.00			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1681	1504						3531			3534	
Flt Permitted	0.76	1.00						0.91			1.00	
Satd. Flow (perm)	1340	1504						3218			3534	
Volume (vph)	5	0	26	0	0	0	15	387	0	0	834	10
Peak-hour factor, PHF	0.67	0.25	0.50	0.25	0.25	0.25	0.67	0.86	0.25	0.25	0.78	0.88
Adj. Flow (vph)	7	0	52	0	0	0	22	450	0	0	1069	11
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	7	7	0	0	0	0	0	472	0	0	1079	0
Turn Type	Perm			Perm			custom			Perm		
Protected Phases		4			8		1 9	6 9			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	11.0	11.0						65.0			46.0	
Effective Green, g (s)	12.0	12.0						66.0			47.0	
Actuated g/C Ratio	0.13	0.13						0.73			0.52	
Clearance Time (s)	5.0	5.0									5.0	
Lane Grp Cap (vph)	179	201						2412			1846	
v/s Ratio Prot		0.00						c0.03			c0.31	
v/s Ratio Perm	c0.01							0.11				
v/c Ratio	0.04	0.03						0.20			0.58	
Uniform Delay, d1	34.0	34.0						3.7			14.8	
Progression Factor	1.00	1.00						0.12			0.60	
Incremental Delay, d2	0.4	0.3						0.2			1.0	
Delay (s)	34.4	34.3						0.6			9.9	
Level of Service	C	C						A			A	
Approach Delay (s)		34.3			0.0			0.6			9.9	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		0.95			0.95						1.00	
Frt		0.97			1.00						0.97	
Flt Protected		1.00			1.00						0.96	
Satd. Flow (prot)		3431			3525						1744	
Flt Permitted		1.00			0.86						0.81	
Satd. Flow (perm)		3431			3053						1467	
Volume (vph)	0	397	87	77	783	0	0	0	0	21	0	5
Peak-hour factor, PHF	0.25	0.89	0.76	0.99	0.90	0.25	0.25	0.25	0.25	0.85	0.25	0.82
Adj. Flow (vph)	0	446	114	78	870	0	0	0	0	25	0	6
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	535	0	0	948	0	0	0	0	0	26	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		2		1 8	6 8			13			9	
Permitted Phases	2	2		6 8	8		13			9		
Actuated Green, G (s)		46.0			68.0						12.0	
Effective Green, g (s)		47.0			69.0						13.0	
Actuated g/C Ratio		0.52			0.77						0.14	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		1792			2435						212	
v/s Ratio Prot		0.16			c0.08							
v/s Ratio Perm					c0.22						c0.02	
v/c Ratio		0.30			0.39						0.12	
Uniform Delay, d1		12.2			3.5						33.5	
Progression Factor		0.64			0.03						1.00	
Incremental Delay, d2		0.4			0.4						1.2	
Delay (s)		8.3			0.5						34.7	
Level of Service		A			A						C	
Approach Delay (s)		8.3			0.5			0.0			34.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frt		0.99			0.96			0.99			1.00	
Flt Protected		0.96			0.99			1.00			1.00	
Satd. Flow (prot)		1770			1771			3493			3524	
Flt Permitted		0.78			0.95			0.86			0.95	
Satd. Flow (perm)		1427			1698			3009			3349	
Volume (vph)	31	5	5	15	15	26	31	428	26	5	783	15
Peak-hour factor, PHF	0.58	0.65	0.88	0.79	0.33	1.00	0.91	0.91	0.72	0.58	0.87	0.63
Adj. Flow (vph)	53	8	6	19	45	26	34	470	36	9	900	24
RTOR Reduction (vph)	0	4	0	0	16	0	0	6	0	0	2	0
Lane Group Flow (vph)	0	63	0	0	74	0	0	534	0	0	931	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2	2		6	6	
Actuated Green, G (s)		31.0			31.0			49.0			49.0	
Effective Green, g (s)		32.0			32.0			50.0			50.0	
Actuated g/C Ratio		0.36			0.36			0.56			0.56	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		507			604			1672			1861	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.04			0.18			c0.28	
v/c Ratio		0.12			0.12			0.32			0.50	
Uniform Delay, d1		19.6			19.5			10.8			12.3	
Progression Factor		1.00			1.00			1.00			1.31	
Incremental Delay, d2		0.5			0.4			0.5			0.9	
Delay (s)		20.1			20.0			11.3			17.0	
Level of Service		C			B			B			B	
Approach Delay (s)		20.1			20.0			11.3			17.0	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		1.00	1.00		0.97	
Frt		1.00	1.00		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		1863	1863		3367	
Flt Permitted		1.00	1.00		0.96	
Satd. Flow (perm)		1863	1863		3367	
Volume (vph)	0	58	108	0	972	258
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	63	117	0	1057	280
RTOR Reduction (vph)	0	0	0	0	27	0
Lane Group Flow (vph)	0	63	117	0	1310	0
Turn Type						
Protected Phases		4	8		6	
Permitted Phases						
Actuated Green, G (s)		27.0	27.0		52.0	
Effective Green, g (s)		28.0	28.0		54.0	
Actuated g/C Ratio		0.31	0.31		0.60	
Clearance Time (s)		5.0	5.0		6.0	
Lane Grp Cap (vph)		580	580		2020	
v/s Ratio Prot		0.03	c0.06		c0.39	
v/s Ratio Perm						
v/c Ratio		0.11	0.20		0.65	
Uniform Delay, d1		22.1	22.8		11.8	
Progression Factor		1.00	1.49		1.00	
Incremental Delay, d2		0.4	0.8		1.6	
Delay (s)		22.5	34.7		13.4	
Level of Service		C	C		B	
Approach Delay (s)		22.5	34.7		13.4	
Approach LOS		C	C		B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	1.00			0.95	0.95		0.95	1.00			
Frt	1.00	1.00			0.98	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)	1770	1863			1735	1504		3512	1583			
Flt Permitted	0.51	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	943	1863			1735	1504		3512	1583			
Volume (vph)	36	1092	0	0	268	262	46	318	133	0	0	0
Peak-hour factor, PHF	0.90	0.93	0.25	0.25	0.88	0.76	0.66	0.85	0.95	0.25	0.25	0.25
Adj. Flow (vph)	40	1174	0	0	305	345	70	374	140	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	107	0	0	0
Lane Group Flow (vph)	40	1174	0	0	351	299	0	444	33	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	81.4	81.4			81.4	81.4		25.6	25.6			
Effective Green, g (s)	83.4	83.4			83.4	83.4		28.6	28.6			
Actuated g/C Ratio	0.70	0.70			0.70	0.70		0.24	0.24			
Clearance Time (s)	6.0	6.0			6.0	6.0		7.0	7.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	655	1295			1206	1045		837	377			
v/s Ratio Prot		c0.63			0.20							
v/s Ratio Perm	0.04					0.20		0.13	0.02			
v/c Ratio	0.06	0.91			0.29	0.29		0.53	0.09			
Uniform Delay, d1	5.8	15.1			7.0	7.0		39.8	35.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.0	9.3			0.1	0.2		2.4	0.5			
Delay (s)	5.9	24.4			7.1	7.1		42.2	36.0			
Level of Service	A	C			A	A		D	D			
Approach Delay (s)		23.8			7.1			40.8			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1010	302	12	118	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1098	328	13	128	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		212	226			
pX, platoon unblocked	0.94				0.64	0.94
vC, conflicting volume	341				884	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	299				68	292
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				78	100
cM capacity (veh/h)	1183				595	662

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	366	732	341	128
Volume Left	0	0	0	128
Volume Right	0	0	13	0
cSH	1183	1700	1700	595
Volume to Capacity	0.00	0.43	0.20	0.22
Queue Length 95th (ft)	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	12.7
Lane LOS				B
Approach Delay (s)	0.0		0.0	12.7
Approach LOS				B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	145	0	16	600	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	0	17	652	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				310		
pX, platoon unblocked	0.92					
vC, conflicting volume	361	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	77	100	99			
cM capacity (veh/h)	686	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	158	235	435
Volume Left	158	17	0
Volume Right	0	0	0
cSH	686	1622	1700
Volume to Capacity	0.23	0.01	0.26
Queue Length 95th (ft)	22	1	0
Control Delay (s)	11.8	0.6	0.0
Lane LOS	B	A	
Approach Delay (s)	11.8	0.2	
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	0	0	13	35	1194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	0	0	14	38	1298
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			294			
pX, platoon unblocked						
vC, conflicting volume	725	0			14	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	725	0			14	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	100			98	
cM capacity (veh/h)	352	1084			1602	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	60	14	471	865
Volume Left	60	0	38	0
Volume Right	0	14	0	0
cSH	352	1700	1602	1700
Volume to Capacity	0.17	0.01	0.02	0.51
Queue Length 95th (ft)	15	0	2	0
Control Delay (s)	17.3	0.0	0.8	0.0
Lane LOS	C		A	
Approach Delay (s)	17.3	0.0	0.3	
Approach LOS	C			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		