Appendix C

Background Future Levels of Service

ZONING COMMISSION
District of Columbia
CASE NO.05-03
EXHIBIT NO.1E2

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	388	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	413	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	421	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	0.21	
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	8.9	
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	20.5	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						1538	1504	1770	3472	
Flt Permitted		1.00						0.83	1.00	0.95	1.00	
Satd. Flow (perm)		1766						1293	1504	1770	3472	
Volume (vph)	0	26	5	0	0	0	31	0	819	97	394	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	890	103	438	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	337	613	103	488	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						339	395	398	2517	
v/s Ratio Prot		c0.02								c0.06	c0.14	
v/s Ratio Perm								0.26	c0.41			
v/c Ratio		0.11						0.99	1.55	0.26	0.19	
Uniform Delay, d1		27.8						29.4	29.5	25.5	3.5	
Progression Factor		1.00						1.00	1.00	0.67	1.56	
Incremental Delay, d2		0.8						47.4	260.6	1.3	0.1	
Delay (s)		28.5						76.9	290.1	18.3	5.6	
Level of Service		C						E	F	B	A	
Approach Delay (s)		28.5			0.0			214.4			7.8	
Approach LOS		C			A			F			A	

Intersection Summary			
HCM Average Control Delay	130.6	HCM Level of Service	F
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	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						3333			3532	
Volume (vph)	10	0	5	0	0	0	26	870	0	0	353	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	1012	0	0	453	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	1051	0	0	458	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								c0.15			0.13	
v/s Ratio Perm		c0.01						c0.15				
v/c Ratio		0.05						0.49			0.49	
Uniform Delay, d1		25.3						9.0			27.0	
Progression Factor		1.00						0.19			1.00	
Incremental Delay, d2		0.2						0.4			1.8	
Delay (s)		25.5						2.0			28.9	
Level of Service		C						A			C	
Approach Delay (s)		25.5			0.0			2.0			28.9	
Approach LOS		C			A			A			C	

Intersection Summary					
HCM Average Control Delay	10.4	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.37				
Actuated Cycle Length (s)	87.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	48.1%	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			0.99						0.99	
Satd. Flow (prot)		3496			3521						1640	
Flt Permitted		1.00			0.92						0.94	
Satd. Flow (perm)		3496			3268						1560	
Volume (vph)	0	701	46	31	327	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	797	70	41	363	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	860	0	0	404	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)		924			2471						287	
v/s Ratio Prot		c0.25			c0.07							
v/s Ratio Perm					0.05						c0.12	
v/c Ratio		0.93			0.16						0.63	
Uniform Delay, d1		31.2			3.8						32.8	
Progression Factor		1.00			0.01						1.00	
Incremental Delay, d2		16.9			0.1						10.1	
Delay (s)		48.1			0.2						42.9	
Level of Service		D			A						D	
Approach Delay (s)		48.1			0.2			0.0			42.9	
Approach LOS		D			A			A			D	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	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			3505			3485	
Flt Permitted		0.86			0.87			0.84			0.86	
Satd. Flow (perm)		1513			1565			2960			3008	
Volume (vph)	21	10	26	31	15	10	72	711	21	10	353	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	773	26	40	436	39
RTOR Reduction (vph)	0	33	0	0	15	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	63	0	0	84	0	0	896	0	0	509	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			36.3			36.3	
Effective Green, g (s)		10.4			10.4			37.3			37.3	
Actuated g/C Ratio		0.19			0.19			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)		282			292			1982			2014	
v/s Ratio Prot												
v/s Ratio Perm		0.04			c0.05			c0.30			0.17	
v/c Ratio		0.22			0.29			0.45			0.25	
Uniform Delay, d1		19.2			19.5			4.4			3.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.5			0.2			0.1	
Delay (s)		19.6			20.0			4.5			3.7	
Level of Service		B			C			A			A	
Approach Delay (s)		19.6			20.0			4.5			3.7	
Approach LOS		B			C			A			A	

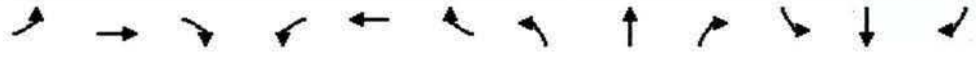
Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	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			
Lane Util. Factor		1.00			0.95	0.95		0.95	1.00			
Frt		1.00			0.88	0.85		1.00	0.85			
Flt Protected		0.99			1.00	1.00		1.00	1.00			
Satd. Flow (prot)		1853			1565	1504		3532	1583			
Flt Permitted		0.30			1.00	1.00		1.00	1.00			
Satd. Flow (perm)		550			1565	1504		3532	1583			
Volume (vph)	36	253	0	0	176	1256	40	1179	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	389	0	0	202	1427	53	1296	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	40	0	0	0
Lane Group Flow (vph)	0	437	0	0	881	748	0	1349	45	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		47.0	47.0			
Effective Green, g (s)		62.0			62.0	62.0		50.0	50.0			
Actuated g/C Ratio		0.52			0.52	0.52		0.42	0.42			
Clearance Time (s)		6.0			6.0	6.0		7.0	7.0			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		284			809	777		1472	660			
v/s Ratio Prot					0.56							
v/s Ratio Perm		c0.79				0.50		0.38	0.03			
v/c Ratio		1.54			1.09	0.96		0.92	0.07			
Uniform Delay, d1		29.0			29.0	27.9		33.0	21.0			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		259.4			58.6	23.4		10.5	0.2			
Delay (s)		288.4			87.6	51.3		43.5	21.2			
Level of Service		F			F	D		D	C			
Approach Delay (s)		288.4			70.9			42.2			0.0	
Approach LOS		F			E			D			A	

Intersection Summary			
HCM Average Control Delay	86.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.9%	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	7	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	307	184	50	8	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				99	100
cM capacity (veh/h)	1334				520	832

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	307	234	8
Volume Left	0	0	8
Volume Right	0	50	0
cSH	1334	1700	520
Volume to Capacity	0.00	0.14	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	12.0
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.0
Approach LOS			B

Intersection Summary			
Average Delay		0.2	
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)	10	0	0	2471	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	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	1343	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	970	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 %	93	100	100			
cM capacity (veh/h)	160	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	11	895	1791
Volume Left	11	0	0
Volume Right	0	0	0
cSH	160	1622	1700
Volume to Capacity	0.07	0.00	1.05
Queue Length 95th (ft)	5	0	0
Control Delay (s)	29.1	0.0	0.0
Lane LOS	D		
Approach Delay (s)	29.1	0.0	
Approach LOS	D		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	78.3%	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)	4	0	0	0	39	625
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	0	0	42	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	424	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	424	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 %	99	100			97	
cM capacity (veh/h)	543	1084			1622	

Direction, Lane #	WB 1	SB 1	SB 2
Volume Total	4	269	453
Volume Left	4	42	0
Volume Right	0	0	0
cSH	543	1622	1700
Volume to Capacity	0.01	0.03	0.27
Queue Length 95th (ft)	1	2	0
Control Delay (s)	11.7	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.7	0.5	
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	28.4%	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	
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	1207	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	1284	10
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	154	0	0	342	0	0	0	0	1049	1293	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	c0.37	
v/s Ratio Perm					c0.22							
v/c Ratio		0.46			0.94					1.62	0.60	
Uniform Delay, d1		32.4			30.7					28.5	10.7	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		4.4			33.6					284.4	1.2	
Delay (s)		36.8			64.2					312.9	12.0	
Level of Service		D			E					F	B	
Approach Delay (s)		36.8			64.2			0.0			146.7	
Approach LOS		D			E			A			F	

Intersection Summary			
HCM Average Control Delay	130.2	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						1572	1504	1770	3529	
Flt Permitted		1.00						0.46	1.00	0.95	1.00	
Satd. Flow (perm)		1793						730	1504	1770	3529	
Volume (vph)	0	72	31	0	0	0	26	0	318	113	1074	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	331	155	1180	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	104	265	155	1203	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						97	201	728	2666	
v/s Ratio Prot		c0.07								0.09	c0.34	
v/s Ratio Perm								0.14	c0.18			
v/c Ratio		0.44						1.07	1.32	0.21	0.45	
Uniform Delay, d1		34.4						39.0	39.0	17.1	4.1	
Progression Factor		1.00						0.61	0.63	0.59	0.28	
Incremental Delay, d2		5.0						111.8	173.6	0.2	0.2	
Delay (s)		39.4						135.7	198.1	10.3	1.4	
Level of Service		D						F	F	B	A	
Approach Delay (s)		39.4			0.0			180.5			2.4	
Approach LOS		D			A			F			A	

Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	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	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						3224			3534	
Volume (vph)	5	0	26	0	0	0	15	379	0	0	797	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	441	0	0	1022	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	463	0	0	1032	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						2415			1846	
v/s Ratio Prot		0.00						c0.03			c0.29	
v/s Ratio Perm	c0.01							0.11				
v/c Ratio	0.04	0.03						0.19			0.56	
Uniform Delay, d1	34.0	34.0						3.7			14.5	
Progression Factor	1.00	1.00						0.12			0.86	
Incremental Delay, d2	0.4	0.3						0.2			1.1	
Delay (s)	34.4	34.3						0.6			13.6	
Level of Service	C	C						A			B	
Approach Delay (s)		34.3			0.0			0.6			13.6	
Approach LOS		C			A			A			B	

Intersection Summary				
HCM Average Control Delay	10.5	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.39			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	32.3%	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		0.97			1.00						0.97	
Flt Protected		1.00			1.00						0.96	
Satd. Flow (prot)		3429			3524						1744	
Flt Permitted		1.00			0.86						0.81	
Satd. Flow (perm)		3429			3047						1467	
Volume (vph)	0	389	87	77	746	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	437	114	78	829	0	0	0	0	25	0	6
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	525	0	0	907	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)		1791			2431						212	
v/s Ratio Prot		0.15			c0.07							
v/s Ratio Perm					c0.21						c0.02	
v/c Ratio		0.29			0.37						0.12	
Uniform Delay, d1		12.1			3.4						33.5	
Progression Factor		0.65			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	

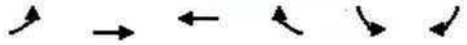
Intersection Summary			
HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

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		0.99			0.96			0.99			1.00	
Flt Protected		0.96			0.99			1.00			1.00	
Satd. Flow (prot)		1770			1771			3492			3523	
Flt Permitted		0.78			0.95			0.86			0.95	
Satd. Flow (perm)		1427			1698			3021			3347	
Volume (vph)	31	5	5	15	15	26	31	420	26	5	746	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	462	36	9	857	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	526	0	0	888	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			1678			1859	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.04			0.17			c0.27	
v/c Ratio		0.12			0.12			0.31			0.48	
Uniform Delay, d1		19.6			19.5			10.8			12.1	
Progression Factor		1.00			1.00			1.00			0.58	
Incremental Delay, d2		0.5			0.4			0.5			0.8	
Delay (s)		20.1			20.0			11.3			7.9	
Level of Service		C			B			B			A	
Approach Delay (s)		20.1			20.0			11.3			7.9	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	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			
Lane Util. Factor		1.00			0.95	0.95		0.95	1.00			
Frt		1.00			0.98	0.85		1.00	0.85			
Flt Protected		1.00			1.00	1.00		0.99	1.00			
Satd. Flow (prot)		1859			1742	1504		3509	1583			
Flt Permitted		0.98			1.00	1.00		0.99	1.00			
Satd. Flow (perm)		1817			1742	1504		3509	1583			
Volume (vph)	36	991	0	0	268	246	51	318	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	1066	0	0	305	324	77	374	162	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	109	0	0	0
Lane Group Flow (vph)	0	1106	0	0	340	289	0	451	53	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)		76.6			76.6	76.6		30.4	30.4			
Effective Green, g (s)		78.6			78.6	78.6		33.4	33.4			
Actuated g/C Ratio		0.65			0.65	0.65		0.28	0.28			
Clearance Time (s)		6.0			6.0	6.0		7.0	7.0			
Vehicle Extension (s)		3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)		1190			1141	985		977	441			
v/s Ratio Prot					0.20							
v/s Ratio Perm		c0.61				0.19		0.13	0.03			
v/c Ratio		0.93			0.30	0.29		0.46	0.12			
Uniform Delay, d1		18.3			8.9	8.8		35.9	32.3			
Progression Factor		1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2		12.5			0.1	0.2		1.6	0.6			
Delay (s)		30.7			9.0	9.0		37.4	32.9			
Level of Service		C			A	A		D	C			
Approach Delay (s)		30.7			9.0			36.2			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
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	38	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1075	328	18	41	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				73	100
cM capacity (veh/h)	1176				151	699

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1075	347	41
Volume Left	0	0	41
Volume Right	0	18	0
cSH	1176	1700	151
Volume to Capacity	0.00	0.20	0.27
Queue Length 95th (ft)	0	0	26
Control Delay (s)	0.0	0.0	37.5
Lane LOS			E
Approach Delay (s)	0.0	0.0	37.5
Approach LOS			E

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
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)	47	0	0	600	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	0	0	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	326	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	185	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 %	93	100	100			
cM capacity (veh/h)	726	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	51	217	435
Volume Left	51	0	0
Volume Right	0	0	0
cSH	726	1622	1700
Volume to Capacity	0.07	0.00	0.26
Queue Length 95th (ft)	6	0	0
Control Delay (s)	10.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.3	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	26.6%	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)	18	0	0	0	15	2117
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	0	0	16	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	1183	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1183	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 %	89	100			99	
cM capacity (veh/h)	180	1084			1622	

Direction, Lane #	WB 1	SB 1	SB 2
Volume Total	20	783	1534
Volume Left	20	16	0
Volume Right	0	0	0
cSH	180	1622	1700
Volume to Capacity	0.11	0.01	0.90
Queue Length 95th (ft)	9	1	0
Control Delay (s)	27.4	0.3	0.0
Lane LOS	D	A	
Approach Delay (s)	27.4	0.1	
Approach LOS	D		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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			0.94			1.00	
Flt Protected		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		3476		1770	1863			1758			3527	
Flt Permitted		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)		3476		1770	1863			1758			3527	
Volume (vph)	0	282	46	149	21	0	0	14	10	0	388	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	56	40	0	413	10
RTOR Reduction (vph)	0	13	0	0	0	0	0	28	0	0	2	0
Lane Group Flow (vph)	0	559	0	182	30	0	0	68	0	0	421	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			527			1058	
v/s Ratio Prot		c0.16		c0.10	0.02			0.04			c0.12	
v/s Ratio Perm												
v/c Ratio		0.54		0.41	0.03			0.13			0.40	
Uniform Delay, d1		23.4		25.1	6.5			20.4			22.3	
Progression Factor		0.78		1.00	1.00			0.44			1.00	
Incremental Delay, d2		2.0		2.8	0.0			0.4			1.1	
Delay (s)		20.1		27.9	6.5			9.3			23.4	
Level of Service		C		C	A			A			C	
Approach Delay (s)		20.1			24.9			9.3			23.4	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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						0.97	0.85		0.98	
Flt Protected		1.00						1.00	1.00		0.99	
Satd. Flow (prot)		1766						1709	1504		3454	
Flt Permitted		1.00						0.91	1.00		0.69	
Satd. Flow (perm)		1766						1554	1504		2386	
Volume (vph)	0	26	5	0	0	0	31	117	702	97	394	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	468	763	103	438	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	659	632	0	594	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		58.0	
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		5.0	
Lane Grp Cap (vph)		287						932	902		1853	
v/s Ratio Prot		c0.02									c0.03	
v/s Ratio Perm								c0.42	0.42		0.21	
v/c Ratio		0.12						0.71	0.70		0.32	
Uniform Delay, d1		28.6						11.1	11.0		3.6	
Progression Factor		1.00						1.00	1.00		1.18	
Incremental Delay, d2		0.9						4.5	4.5		0.4	
Delay (s)		29.5						15.6	15.6		4.7	
Level of Service		C						B	B		A	
Approach Delay (s)		29.5			0.0			15.6			4.7	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.0%	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	
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						3333			3532	
Volume (vph)	10	0	5	0	0	0	26	870	0	0	353	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	1012	0	0	453	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	1051	0	0	458	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								c0.15			0.13	
v/s Ratio Perm		c0.01						c0.15				
v/c Ratio		0.05						0.49			0.49	
Uniform Delay, d1		25.3						9.0			27.0	
Progression Factor		1.00						0.19			1.00	
Incremental Delay, d2		0.2						0.4			1.8	
Delay (s)		25.5						2.0			28.9	
Level of Service		C						A			C	
Approach Delay (s)		25.5			0.0			2.0			28.9	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	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			0.99						0.99	
Satd. Flow (prot)		3496			3521						1640	
Flt Permitted		1.00			0.92						0.94	
Satd. Flow (perm)		3496			3268						1560	
Volume (vph)	0	701	46	31	327	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	797	70	41	363	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	860	0	0	404	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)		924			2471						287	
v/s Ratio Prot		c0.25			c0.07							
v/s Ratio Perm					0.05						c0.12	
v/c Ratio		0.93			0.16						0.63	
Uniform Delay, d1		31.2			3.8						32.8	
Progression Factor		1.00			0.01						1.00	
Incremental Delay, d2		16.9			0.1						10.1	
Delay (s)		48.1			0.2						42.9	
Level of Service		D			A						D	
Approach Delay (s)		48.1			0.2			0.0			42.9	
Approach LOS		D			A			A			D	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	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			3505			3485	
Flt Permitted		0.86			0.87			0.84			0.86	
Satd. Flow (perm)		1513			1565			2960			3008	
Volume (vph)	21	10	26	31	15	10	72	711	21	10	353	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	773	26	40	436	39
RTOR Reduction (vph)	0	33	0	0	15	0	0	2	0	0	6	0
Lane Group Flow (vph)	0	63	0	0	84	0	0	896	0	0	509	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			36.3			36.3	
Effective Green, g (s)		10.4			10.4			37.3			37.3	
Actuated g/C Ratio		0.19			0.19			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)		282			292			1982			2014	
v/s Ratio Prot												
v/s Ratio Perm		0.04			c0.05			c0.30			0.17	
v/c Ratio		0.22			0.29			0.45			0.25	
Uniform Delay, d1		19.2			19.5			4.4			3.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.5			0.2			0.1	
Delay (s)		19.6			20.0			4.5			3.7	
Level of Service		B			C			A			A	
Approach Delay (s)		19.6			20.0			4.5			3.7	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.0%	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		0.99	
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	1.27		1.00	
Incremental Delay, d2		0.2	0.1		0.3	
Delay (s)		12.8	15.6		13.6	
Level of Service		B	B		B	
Approach Delay (s)		12.8	15.6		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			1565	1504		3535	1583			
Flt Permitted	0.08	1.00			1.00	1.00		1.00	1.00			
Satd. Flow (perm)	148	1863			1565	1504		3535	1583			
Volume (vph)	36	263	0	0	176	1256	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	405	0	0	202	1427	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	405	0	0	881	748	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)	84	1056			887	852		1296	580			
v/s Ratio Prot		0.22			c0.56							
v/s Ratio Perm	0.32					0.50		0.38	0.02			
v/c Ratio	0.57	0.38			0.99	0.88		1.03	0.06			
Uniform Delay, d1	16.7	14.4			25.8	22.4		38.0	24.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	9.1	0.2			28.4	10.2		32.1	0.2			
Delay (s)	25.7	14.6			54.2	32.6		70.1	24.9			
Level of Service	C	B			D	C		E	C			
Approach Delay (s)		15.8			44.3			67.9			0.0	
Approach LOS		B			D			E			A	

Intersection Summary			
HCM Average Control Delay	50.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
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	7	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	317	184	35	8	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				99	100
cM capacity (veh/h)	1348				612	806

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	106	212	218	8
Volume Left	0	0	0	8
Volume Right	0	0	35	0
cSH	1348	1700	1700	612
Volume to Capacity	0.00	0.12	0.13	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	11.0
Lane LOS				B
Approach Delay (s)	0.0		0.0	11.0
Approach LOS				B

Intersection Summary			
Average Delay	0.2		
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)	10	0	0	2471	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	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	1343	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	975	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 %	93	100	100			
cM capacity (veh/h)	160	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	11	895	1791
Volume Left	11	0	0
Volume Right	0	0	0
cSH	160	1622	1700
Volume to Capacity	0.07	0.00	1.05
Queue Length 95th (ft)	5	0	0
Control Delay (s)	29.2	0.0	0.0
Lane LOS	D		
Approach Delay (s)	29.2	0.0	
Approach LOS	D		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	78.3%	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)	4	0	0	14	39	390
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	0	15	42	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	297	0			15	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297	0			15	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			97	
cM capacity (veh/h)	653	1084			1601	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	4	15	184	283
Volume Left	4	0	42	0
Volume Right	0	15	0	0
cSH	653	1700	1601	1700
Volume to Capacity	0.01	0.01	0.03	0.17
Queue Length 95th (ft)	1	0	2	0
Control Delay (s)	10.6	0.0	1.8	0.0
Lane LOS	B		A	
Approach Delay (s)	10.6	0.0	0.7	
Approach LOS	B			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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			0.89			1.00	
Flt Protected		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		3523		1770	1863			1660			3535	
Flt Permitted		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (perm)		3523		1770	1863			1660			3535	
Volume (vph)	0	989	41	200	103	0	0	5	21	0	1207	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	20	84	0	1284	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	48	0	0	1293	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			553			1178	
v/s Ratio Prot		c0.51		c0.13	0.06			0.03			c0.37	
v/s Ratio Perm												
v/c Ratio		1.20		1.21	0.10			0.09			1.10	
Uniform Delay, d1		26.0		40.0	8.5			20.6			30.0	
Progression Factor		0.76		1.00	1.00			2.24			1.00	
Incremental Delay, d2		97.3		131.4	0.2			0.3			57.2	
Delay (s)		117.1		171.4	8.7			46.5			87.2	
Level of Service		F		F	A			D			F	
Approach Delay (s)		117.1			121.9			46.5			87.2	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	104.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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						0.99	1.00		0.99	
Satd. Flow (prot)		1793						1760	1504		3510	
Flt Permitted		1.00						0.79	1.00		0.76	
Satd. Flow (perm)		1793						1393	1504		2692	
Volume (vph)	0	72	31	0	0	0	26	82	236	113	1074	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	328	246	155	1180	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	366	246	0	1358	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						47.0	47.0		63.0	
Effective Green, g (s)		18.0						48.0	48.0		64.0	
Actuated g/C Ratio		0.20						0.53	0.53		0.71	
Clearance Time (s)		5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)		359						743	802		2023	
v/s Ratio Prot		c0.07									c0.09	
v/s Ratio Perm								0.26	0.16		c0.39	
v/c Ratio		0.34						0.49	0.31		0.67	
Uniform Delay, d1		30.9						13.3	11.7		7.2	
Progression Factor		1.00						0.40	0.34		0.60	
Incremental Delay, d2		2.6						2.3	1.0		0.2	
Delay (s)		33.5						7.6	5.0		4.5	
Level of Service		C						A	A		A	
Approach Delay (s)		33.5			0.0			6.5			4.5	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	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						3224			3534	
Volume (vph)	5	0	26	0	0	0	15	379	0	0	797	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	441	0	0	1022	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	463	0	0	1032	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						2415			1846	
v/s Ratio Prot		0.00						c0.03			c0.29	
v/s Ratio Perm	c0.01							0.11				
v/c Ratio	0.04	0.03						0.19			0.56	
Uniform Delay, d1	34.0	34.0						3.7			14.5	
Progression Factor	1.00	1.00						0.12			0.64	
Incremental Delay, d2	0.4	0.3						0.2			0.9	
Delay (s)	34.4	34.3						0.6			10.2	
Level of Service	C	C						A			B	
Approach Delay (s)		34.3			0.0			0.6			10.2	
Approach LOS		C			A			A			B	

Intersection Summary				
HCM Average Control Delay	8.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.39			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	32.3%	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		0.97			1.00						0.97	
Flt Protected		1.00			1.00						0.96	
Satd. Flow (prot)		3429			3524						1744	
Flt Permitted		1.00			0.86						0.81	
Satd. Flow (perm)		3429			3047						1467	
Volume (vph)	0	389	87	77	746	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	437	114	78	829	0	0	0	0	25	0	6
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	525	0	0	907	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)		1791			2431						212	
v/s Ratio Prot		0.15			c0.07							
v/s Ratio Perm					c0.21						c0.02	
v/c Ratio		0.29			0.37						0.12	
Uniform Delay, d1		12.1			3.4						33.5	
Progression Factor		0.65			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	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.7%	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		0.99			0.96			0.99			1.00	
Flt Protected		0.96			0.99			1.00			1.00	
Satd. Flow (prot)		1770			1771			3492			3523	
Flt Permitted		0.78			0.95			0.86			0.95	
Satd. Flow (perm)		1427			1698			3021			3347	
Volume (vph)	31	5	5	15	15	26	31	420	26	5	746	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	462	36	9	857	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	526	0	0	888	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			1678			1859	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.04			0.17			c0.27	
v/c Ratio		0.12			0.12			0.31			0.48	
Uniform Delay, d1		19.6			19.5			10.8			12.1	
Progression Factor		1.00			1.00			1.00			1.38	
Incremental Delay, d2		0.5			0.4			0.5			0.8	
Delay (s)		20.1			20.0			11.3			17.6	
Level of Service		C			B			B			B	
Approach Delay (s)		20.1			20.0			11.3			17.6	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	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	1.55		1.00	
Incremental Delay, d2		0.4	0.8		1.6	
Delay (s)		22.5	36.1		13.4	
Level of Service		C	D		B	
Approach Delay (s)		22.5	36.1		13.4	
Approach LOS		C	D		B	

Intersection Summary			
HCM Average Control Delay	15.5	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			1742	1504		3512	1583			
Flt Permitted	0.50	1.00			1.00	1.00		0.99	1.00			
Satd. Flow (perm)	938	1863			1742	1504		3512	1583			
Volume (vph)	36	1012	0	0	268	246	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	1088	0	0	305	324	70	374	140	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	101	0	0	0
Lane Group Flow (vph)	40	1088	0	0	340	289	0	444	39	0	0	0
Turn Type	Perm					Perm	Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	76.7	76.7			76.7	76.7		30.3	30.3			
Effective Green, g (s)	78.7	78.7			78.7	78.7		33.3	33.3			
Actuated g/C Ratio	0.66	0.66			0.66	0.66		0.28	0.28			
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)	615	1222			1142	986		975	439			
v/s Ratio Prot		c0.58			0.20							
v/s Ratio Perm	0.04					0.19		0.13	0.02			
v/c Ratio	0.07	0.89			0.30	0.29		0.46	0.09			
Uniform Delay, d1	7.4	17.1			8.8	8.8		35.9	32.1			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.0	8.4			0.1	0.2		1.5	0.4			
Delay (s)	7.5	25.5			9.0	9.0		37.4	32.5			
Level of Service	A	C			A	A		D	C			
Approach Delay (s)		24.9			9.0			36.2			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	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.3%	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	38	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1098	328	13	41	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				0.65	0.93
vC, conflicting volume	341				884	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	292				54	285
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				93	100
cM capacity (veh/h)	1178				611	662

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	366	732	341	41
Volume Left	0	0	0	41
Volume Right	0	0	13	0
cSH	1178	1700	1700	611
Volume to Capacity	0.00	0.43	0.20	0.07
Queue Length 95th (ft)	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	11.3
Lane LOS				B
Approach Delay (s)	0.0		0.0	11.3
Approach LOS				B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	37.9%	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)	47	0	0	600	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	0	0	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	326	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	185	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 %	93	100	100			
cM capacity (veh/h)	725	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	51	217	435
Volume Left	51	0	0
Volume Right	0	0	0
cSH	725	1622	1700
Volume to Capacity	0.07	0.00	0.26
Queue Length 95th (ft)	6	0	0
Control Delay (s)	10.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.3	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	26.6%	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)	18	0	0	5	15	1194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	0	5	16	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	682	0			5	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	682	0			5	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			99	
cM capacity (veh/h)	380	1084			1614	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	20	5	449	865
Volume Left	20	0	16	0
Volume Right	0	5	0	0
cSH	380	1700	1614	1700
Volume to Capacity	0.05	0.00	0.01	0.51
Queue Length 95th (ft)	4	0	1	0
Control Delay (s)	15.0	0.0	0.4	0.0
Lane LOS	B		A	
Approach Delay (s)	15.0	0.0	0.1	
Approach LOS	B			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		