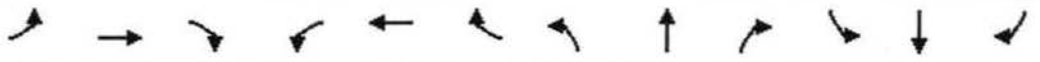
Appendix D

Total Future Levels of Service

ZONING COMMISSION
District of Columbia
CASE NO.04-22
EXHIBIT NO.21C



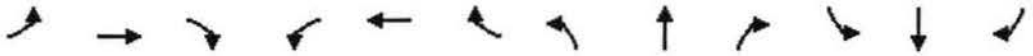
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0			3.0			3.0	3.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		0.99			0.98			1.00			1.00	0.78
Flpb, ped/bikes		1.00			1.00			0.93			1.00	1.00
Frt		0.98			1.00			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.98			1.00	1.00
Satd. Flow (prot)		3397			3457			1703			1859	1241
Flt Permitted		0.70			0.95			0.84			0.99	1.00
Satd. Flow (perm)		2394			3296			1461			1851	1241
Volume (vph)	43	239	50	6	1061	36	83	127	3	3	102	257
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	48	266	56	7	1179	40	92	141	3	3	113	286
RTOR Reduction (vph)	0	14	0	0	3	0	0	1	0	0	0	90
Lane Group Flow (vph)	0	356	0	0	1223	0	0	235	0	0	116	196
Confl. Peds. (#/hr)	225		18	18		225	111		29	29		111
Turn Type	pm+pt			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		57.0			48.0			32.0			32.0	32.0
Effective Green, g (s)		60.0			49.0			34.0			34.0	34.0
Actuated g/C Ratio		0.60			0.49			0.34			0.34	0.34
Clearance Time (s)		6.0			4.0			5.0			5.0	5.0
Lane Grp Cap (vph)		1517			1615			497			629	422
v/s Ratio Prot		c0.02										
v/s Ratio Perm		0.12			c0.37			c0.16			0.06	0.16
v/c Ratio		0.23			0.76			0.47			0.18	0.47
Uniform Delay, d1		9.3			20.7			26.0			23.2	25.9
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.4			3.4			3.2			0.6	3.7
Delay (s)		9.7			24.1			29.2			23.9	29.5
Level of Service		A			C			C			C	C
Approach Delay (s)		9.7			24.1			29.2			27.9	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	0	0	53	0	100	1	262	1	1	120	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	0	59	0	111	1	291	1	1	133	6
Pedestrians					90			45			5	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					7			4			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1316				
pX, platoon unblocked												
vC, conflicting volume	548	523	181	567	525	387	139			382		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	548	523	181	567	525	387	139			382		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	84	100	82	100			100		
cM capacity (veh/h)	343	424	829	364	422	609	1445			1088		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	170	293	140
Volume Left	4	59	1	1
Volume Right	0	111	1	6
cSH	343	494	1445	1088
Volume to Capacity	0.01	0.34	0.00	0.00
Queue Length 95th (ft)	1	38	0	0
Control Delay (s)	15.6	16.1	0.0	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	15.6	16.1	0.0	0.1
Approach LOS	C	C		

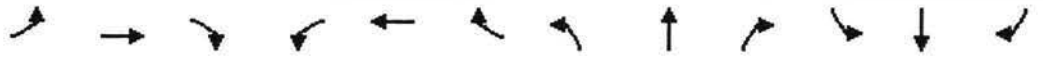
Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	7	4	29	13	39	12	281	90	18	169	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	8	4	32	14	43	13	312	100	20	188	14

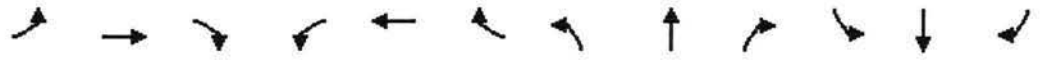
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	90	426	222
Volume Left (vph)	0	32	13	20
Volume Right (vph)	4	43	100	14
Hadj (s)	-0.18	-0.18	-0.10	0.01
Departure Headway (s)	5.3	5.2	4.3	4.6
Degree Utilization, x	0.02	0.13	0.51	0.29
Capacity (veh/h)	579	616	811	741
Control Delay (s)	8.4	8.9	11.8	9.5
Approach Delay (s)	8.4	8.9	11.8	9.5
Approach LOS	A	A	B	A

Intersection Summary			
Delay	10.7		
HCM Level of Service	B		
Intersection Capacity Utilization	43.0%	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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		0.95			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			0.99			1.00			1.00	
Frt		0.97			0.99			0.99			0.97	
Flt Protected		1.00			1.00			0.97			1.00	
Satd. Flow (prot)		3236			3470			1783			1805	
Flt Permitted		0.91			0.91			0.75			0.99	
Satd. Flow (perm)		2963			3180			1370			1795	
Volume (vph)	9	187	58	57	940	40	158	106	28	4	105	26
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	208	64	63	1044	44	176	118	31	4	117	29
RTOR Reduction (vph)	0	27	0	0	3	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	255	0	0	1148	0	0	321	0	0	141	0
Confl. Peds. (#/hr)	25		68	68		25	3		6	6		3
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		50.0			50.0			42.0			42.0	
Effective Green, g (s)		51.0			51.0			43.0			43.0	
Actuated g/C Ratio		0.51			0.51			0.43			0.43	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		1511			1622			589			772	
v/s Ratio Prot												
v/s Ratio Perm		0.09			c0.36			c0.23			0.08	
v/c Ratio		0.17			0.71			0.55			0.18	
Uniform Delay, d1		13.1			18.8			21.2			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			2.6			3.6			0.5	
Delay (s)		13.4			21.4			24.8			18.2	
Level of Service		B			C			C			B	
Approach Delay (s)		13.4			21.4			24.8			18.2	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	45	81	88	32	168	0	2	116	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	50	90	98	36	187	0	2	129	56

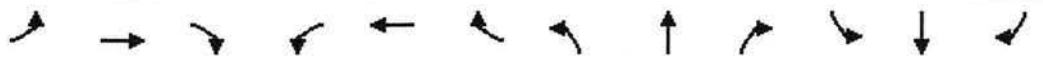
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	238	222	187
Volume Left (vph)	50	36	2
Volume Right (vph)	98	0	56
Hadj (s)	-0.17	0.07	-0.14
Departure Headway (s)	4.7	4.8	4.6
Degree Utilization, x	0.31	0.30	0.24
Capacity (veh/h)	712	713	728
Control Delay (s)	9.8	9.8	9.1
Approach Delay (s)	9.8	9.8	9.1
Approach LOS	A	A	A

Intersection Summary			
Delay		9.6	
HCM Level of Service		A	
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.99			0.98	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.99			0.99			0.99			0.95	
Flt Protected		0.99			1.00			0.98			0.99	
Satd. Flow (prot)		4966			4981			1786			1702	
Flt Permitted		0.70			0.89			0.80			0.88	
Satd. Flow (perm)		3473			4453			1450			1519	
Volume (vph)	55	378	42	64	1817	153	91	167	27	31	66	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	420	47	71	2019	170	101	186	30	34	73	72
RTOR Reduction (vph)	0	12	0	0	9	0	0	4	0	0	24	0
Lane Group Flow (vph)	0	516	0	0	2251	0	0	313	0	0	155	0
Confl. Peds. (#/hr)	25		10	10		25	23		24	24		23
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		62.0			54.0			26.0			26.0	
Effective Green, g (s)		65.0			57.0			29.0			29.0	
Actuated g/C Ratio		0.65			0.57			0.29			0.29	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		2332			2538			421			441	
v/s Ratio Prot		c0.01										
v/s Ratio Perm		0.13			c0.51			c0.22			0.10	
v/c Ratio		0.22			0.89			0.74			0.35	
Uniform Delay, d1		7.2			18.7			32.1			28.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			5.1			11.3			2.2	
Delay (s)		7.4			23.7			43.5			30.3	
Level of Service		A			C			D			C	
Approach Delay (s)		7.4			23.7			43.5			30.3	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	89.3%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	17	68	0	0	0	61	260	18	20	121	24
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	19	76	0	0	0	68	289	20	22	134	27

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	122	377	183
Volume Left (vph)	28	68	22
Volume Right (vph)	76	20	27
Hadj (s)	-0.29	0.04	-0.03
Departure Headway (s)	4.9	4.5	4.6
Degree Utilization, x	0.17	0.47	0.23
Capacity (veh/h)	664	784	744
Control Delay (s)	8.8	11.3	9.0
Approach Delay (s)	8.8	11.3	9.0
Approach LOS	A	B	A

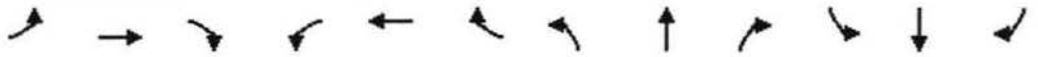
Intersection Summary			
Delay		10.3	
HCM Level of Service		B	
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	17	92	289	6	17	175
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	102	321	7	19	194
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	557	324			328	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	557	324			328	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	86			98	
cM capacity (veh/h)	484	717			1232	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	121	328	213
Volume Left	19	0	19
Volume Right	102	7	0
cSH	667	1700	1232
Volume to Capacity	0.18	0.19	0.02
Queue Length 95th (ft)	16	0	1
Control Delay (s)	11.6	0.0	0.8
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	0.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	36.6%	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)		3.0			3.0			3.0			3.0	3.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			0.97			1.00			1.00	0.79
Flpb, ped/bikes		0.97			1.00			0.96			1.00	1.00
Frt		0.99			0.99			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.98			1.00	1.00
Satd. Flow (prot)		3366			3418			1745			1851	1244
Flt Permitted		0.74			0.94			0.84			0.97	1.00
Satd. Flow (perm)		2498			3217			1495			1806	1244
Volume (vph)	139	638	54	6	344	17	50	92	2	16	175	281
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	709	60	7	382	19	56	102	2	18	194	312
RTOR Reduction (vph)	0	5	0	0	3	0	0	1	0	0	0	177
Lane Group Flow (vph)	0	918	0	0	405	0	0	159	0	0	212	135
Confl. Peds. (#/hr)	262		6	6		262	110		23	23		110
Turn Type	pm+pt			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		55.0			41.0			34.0			34.0	34.0
Effective Green, g (s)		57.0			42.0			37.0			37.0	37.0
Actuated g/C Ratio		0.57			0.42			0.37			0.37	0.37
Clearance Time (s)		5.0			4.0			6.0			6.0	6.0
Lane Grp Cap (vph)		1528			1351			553			668	460
v/s Ratio Prot		c0.07										
v/s Ratio Perm		c0.27			0.13			0.11			c0.12	0.11
v/c Ratio		0.60			0.30			0.29			0.32	0.29
Uniform Delay, d1		14.1			19.2			22.2			22.5	22.3
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		1.8			0.6			1.3			1.2	1.6
Delay (s)		15.8			19.8			23.5			23.7	23.9
Level of Service		B			B			C			C	C
Approach Delay (s)		15.8			19.8			23.5			23.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	36	1	23	0	0	11	4	244	2	0	294	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	1	26	0	0	12	4	271	2	0	327	0
Pedestrians		3			54			3			22	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			4			0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1316				
pX, platoon unblocked												
vC, conflicting volume	645	666	333	691	665	348	330			327		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	645	666	333	691	665	348	330			327		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	96	100	100	98	100			100		
cM capacity (veh/h)	356	361	706	316	361	652	1227			1177		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	67	12	278	327
Volume Left	40	0	4	0
Volume Right	26	12	2	0
cSH	439	652	1227	1700
Volume to Capacity	0.15	0.02	0.00	0.19
Queue Length 95th (ft)	13	1	0	0
Control Delay (s)	14.7	10.6	0.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	14.7	10.6	0.2	0.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		



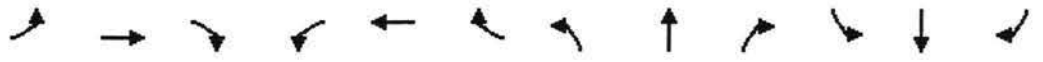
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	13	13	15	53	2	9	0	261	79	20	204	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	14	17	59	2	10	0	290	88	22	227	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	46	71	378	251
Volume Left (vph)	14	59	0	22
Volume Right (vph)	17	10	88	2
Hadj (s)	-0.12	0.12	-0.11	0.05
Departure Headway (s)	5.3	5.5	4.4	4.7
Degree Utilization, x	0.07	0.11	0.46	0.33
Capacity (veh/h)	586	576	790	733
Control Delay (s)	8.7	9.2	11.2	10.0
Approach Delay (s)	8.7	9.2	11.2	10.0
Approach LOS	A	A	B	A

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		0.98			1.00			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.96			0.98	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		3418			3491			1725			1806	
Flt Permitted		0.95			0.91			0.78			0.92	
Satd. Flow (perm)		3242			3179			1368			1676	
Volume (vph)	14	805	82	12	255	13	126	96	84	30	145	25
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	894	91	13	283	14	140	107	93	33	161	28
RTOR Reduction (vph)	0	7	0	0	4	0	0	14	0	0	5	0
Lane Group Flow (vph)	0	994	0	0	306	0	0	327	0	0	217	0
Confl. Peds. (#/hr)	28		63	63		28	9		23	23		9
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		47.0			47.0			45.0			45.0	
Effective Green, g (s)		48.0			48.0			46.0			46.0	
Actuated g/C Ratio		0.48			0.48			0.46			0.46	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		1556			1526			629			771	
v/s Ratio Prot												
v/s Ratio Perm		c0.31			0.10			c0.24			0.13	
v/c Ratio		0.64			0.20			0.52			0.28	
Uniform Delay, d1		19.5			15.0			19.2			16.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.0			0.3			3.0			0.9	
Delay (s)		21.5			15.3			22.2			17.7	
Level of Service		C			B			C			B	
Approach Delay (s)		21.5			15.3			22.2			17.7	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	10	26	45	14	133	0	11	154	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	11	29	50	16	148	0	12	171	23

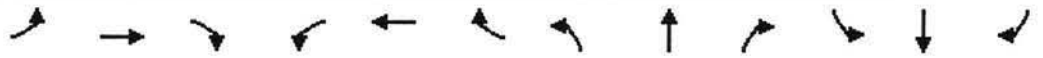
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	90	163	207
Volume Left (vph)	11	16	12
Volume Right (vph)	50	0	23
Hadj (s)	-0.27	0.05	-0.02
Departure Headway (s)	4.4	4.4	4.3
Degree Utilization, x	0.11	0.20	0.25
Capacity (veh/h)	743	794	813
Control Delay (s)	8.0	8.5	8.6
Approach Delay (s)	8.0	8.5	8.6
Approach LOS	A	A	A

Intersection Summary			
Delay		8.5	
HCM Level of Service		A	
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.98	
Flpb, ped/bikes		1.00			1.00			0.99			0.99	
Frt		1.00			0.99			0.98			0.96	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		5018			5010			1768			1721	
Flt Permitted		0.73			0.89			0.80			0.76	
Satd. Flow (perm)		3692			4466			1441			1341	
Volume (vph)	159	1583	55	10	648	44	58	96	31	101	93	71
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	177	1759	61	11	720	49	64	107	34	112	103	79
RTOR Reduction (vph)	0	3	0	0	8	0	0	7	0	0	13	0
Lane Group Flow (vph)	0	1994	0	0	772	0	0	198	0	0	281	0
Confl. Peds. (#/hr)	18		29	29		18	24		22	22		24
Turn Type	pm+pt			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		60.0			52.0			28.0			28.0	
Effective Green, g (s)		63.0			55.0			31.0			31.0	
Actuated g/C Ratio		0.63			0.55			0.31			0.31	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		2392			2456			447			416	
v/s Ratio Prot		c0.04										
v/s Ratio Perm		c0.48			0.17			0.14			c0.21	
v/c Ratio		0.83			0.31			0.44			0.68	
Uniform Delay, d1		14.4			12.2			27.6			30.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.6			0.3			3.2			8.5	
Delay (s)		18.0			12.6			30.8			38.6	
Level of Service		B			B			C			D	
Approach Delay (s)		18.0			12.6			30.8			38.6	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	36	73	0	0	0	46	171	22	15	200	26
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	40	81	0	0	0	51	190	24	17	222	29

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	140	266	268
Volume Left (vph)	19	51	17
Volume Right (vph)	81	24	29
Hadj (s)	-0.29	0.02	-0.02
Departure Headway (s)	4.8	4.6	4.6
Degree Utilization, x	0.19	0.34	0.34
Capacity (veh/h)	677	755	758
Control Delay (s)	8.9	9.9	9.9
Approach Delay (s)	8.9	9.9	9.9
Approach LOS	A	A	A

Intersection Summary			
Delay		9.7	
HCM Level of Service		A	
Intersection Capacity Utilization	48.3%	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)	8	44	266	28	78	191
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	49	296	31	87	212
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	697	311			327	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	697	311			327	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	93			93	
cM capacity (veh/h)	379	729			1233	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	58	327	299
Volume Left	9	0	87
Volume Right	49	31	0
cSH	638	1700	1233
Volume to Capacity	0.09	0.19	0.07
Queue Length 95th (ft)	7	0	6
Control Delay (s)	11.2	0.0	2.8
Lane LOS	B		A
Approach Delay (s)	11.2	0.0	2.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		