

Appendix E

Background Future Intersection Levels of Service

Background Conditions
1: Washington Circle & 23rd Street

AM Peak Hour
5/20/06

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑				↑↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0
Lane Util. Factor	0.86	0.86				0.76
Frpb, ped/bikes	0.99	0.84				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	1.00	0.85				0.85
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	4283	1029				3249
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	4283	1029				3249
Volume (vph)	1925	535	0	0	0	639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2092	582	0	0	0	695
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2160	514	0	0	0	695
Confl. Peds. (#/hr)		504	504		165	
Turn Type		Perm			custom	
Protected Phases	1 2 3					
Permitted Phases		1 2 3				12
Actuated Green, G (s)	100.0	100.0				74.0
Effective Green, g (s)	100.0	100.0				74.0
Actuated g/C Ratio	1.00	1.00				0.74
Clearance Time (s)						4.0
Lane Grp Cap (vph)	4283	1029				2404
v/s Ratio Prot	c0.50					
v/s Ratio Perm		0.50				0.21
v/c Ratio	0.50	0.50				0.29
Uniform Delay, d1	0.0	0.0				4.3
Progression Factor	1.00	1.00				1.71
Incremental Delay, d2	0.3	1.1				0.3
Delay (s)	0.3	1.1				7.7
Level of Service	A	A				A
Approach Delay (s)	0.4			0.0	7.7	
Approach LOS	A			A	A	
Intersection Summary						
HCM Average Control Delay		1.9		HCM Level of Service		A
HCM Volume to Capacity ratio		0.50				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		0.0
Intersection Capacity Utilization		69.8%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

Background Conditions
2: Washington Circle & New Hampshire Avenue

AM Peak Hour
5/20/06



Movement	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations			←←←	←		←
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		4.0
Lane Util. Factor			0.94	1.00		1.00
Frpb, ped/bikes			1.00	1.00		0.89
Flpb, ped/bikes			1.00	1.00		1.00
Frt			1.00	0.85		0.86
Flt Protected			0.95	1.00		1.00
Satd. Flow (prot)			4491	1425		1138
Flt Permitted			0.95	1.00		1.00
Satd. Flow (perm)			4491	1425		1138
Volume (vph)	0	0	2261	117	0	199
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2458	127	0	216
RTOR Reduction (vph)	0	0	130	27	0	0
Lane Group Flow (vph)	0	0	2329	100	0	216
Confl. Peds. (#/hr)	241	231	165	241	231	165
Parking (#/hr)						3
Turn Type			custom			
Protected Phases			4 7	8 10		
Permitted Phases						10
Actuated Green, G (s)			65.0	79.0		40.0
Effective Green, g (s)			65.0	79.0		48.0
Actuated g/C Ratio			0.65	0.79		0.48
Clearance Time (s)						12.0
Lane Grp Cap (vph)			2919	1126		546
v/s Ratio Prot			c0.52	0.07		
v/s Ratio Perm						c0.19
v/c Ratio			0.80	0.09		0.40
Uniform Delay, d1			12.7	2.4		16.7
Progression Factor			1.00	1.00		1.00
Incremental Delay, d2			2.4	0.2		2.1
Delay (s)			15.1	2.5		18.8
Level of Service			B	A		B
Approach Delay (s)	0.0		14.5		18.8	
Approach LOS	A		B		B	
Intersection Summary						
HCM Average Control Delay			14.8		HCM Level of Service	B
HCM Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			84.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Background Conditions
3: K Street EB & Washington Circle

AM Peak Hour
5/20/06



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗↘			↗↗↘	
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	693	0	0	1685	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	753	0	0	1832	0
Pedestrians	112			231		
Lane Width (ft)	12.0			0.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	9			0		
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				141		
pX, platoon unblocked						
vC, conflicting volume	1944	954	1944			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1944	954	1944			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	52	235	270			

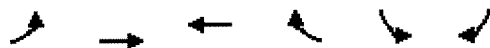
Direction, Lane #	EB 1	EB 2	SB 1	SB 2	SB 3
Volume Total	377	377	611	611	611
Volume Left	0	0	0	0	0
Volume Right	377	377	0	0	0
cSH	235	235	1700	1700	1700
Volume to Capacity	1.60	1.60	0.36	0.36	0.36
Queue Length 95th (ft)	591	591	0	0	0
Control Delay (s)	327.0	327.0	0.0	0.0	0.0
Lane LOS	F	F			
Approach Delay (s)	327.0		0.0		
Approach LOS	F				

Intersection Summary

Average Delay	95.3		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

Background Conditions
5: Washington Circle & 23rd Street

AM Peak Hour
5/20/06



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
Lane Util. Factor			0.86			0.76
Frpb, ped/bikes			1.00			0.99
Flpb, ped/bikes			1.00			1.00
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			5767			3206
Flt Permitted			1.00			1.00
Satd. Flow (perm)			5767			3206
Volume (vph)	0	0	563	0	0	729
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	612	0	0	792
RTOR Reduction (vph)	0	0	0	0	0	198
Lane Group Flow (vph)	0	0	612	0	0	594
Confl. Peds. (#/hr)	131			131	151	3
Turn Type					custom	
Protected Phases			10 11			
Permitted Phases						1 3
Actuated Green, G (s)			100.0			75.0
Effective Green, g (s)			100.0			75.0
Actuated g/C Ratio			1.00			0.75
Clearance Time (s)						
Lane Grp Cap (vph)			5767			2405
v/s Ratio Prot			c0.11			
v/s Ratio Perm						c0.19
v/c Ratio			0.11			0.25
Uniform Delay, d1			0.0			3.8
Progression Factor			1.00			1.00
Incremental Delay, d2			0.0			0.2
Delay (s)			0.0			4.1
Level of Service			A			A
Approach Delay (s)		0.0	0.0		4.1	
Approach LOS		A	A		A	
Intersection Summary						
HCM Average Control Delay			2.3		HCM Level of Service	A
HCM Volume to Capacity ratio			0.22			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Background Conditions
6: Washington Circle & New Hampshire Avenue

AM Peak Hour
5/20/06



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		
Lane Util. Factor			0.86	0.86		
Frpb, ped/bikes			0.94	1.00		
Flpb, ped/bikes			1.00	1.00		
Frt			0.93	0.85		
Flt Protected			1.00	1.00		
Satd. Flow (prot)			3761	1226		
Flt Permitted			1.00	1.00		
Satd. Flow (perm)			3761	1226		
Volume (vph)	0	0	563	1013	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	612	1101	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1162	551	0	0
Confl. Peds. (#/hr)	297			297	2	326
Turn Type			custom			
Protected Phases			7 9	4 6		
Permitted Phases						
Actuated Green, G (s)			71.0	75.0		
Effective Green, g (s)			71.0	75.0		
Actuated g/C Ratio			0.71	0.75		
Clearance Time (s)						
Lane Grp Cap (vph)			2670	920		
v/s Ratio Prot			c0.31	c0.45		
v/s Ratio Perm						
v/c Ratio			0.44	0.60		
Uniform Delay, d1			6.1	5.7		
Progression Factor			1.33	0.55		
Incremental Delay, d2			0.5	2.8		
Delay (s)			8.6	5.9		
Level of Service			A	A		
Approach Delay (s)		0.0	7.7		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
7: K Street WB & Washington Circle

AM Peak Hour
5/20/06



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		TT	TTT			
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	269	1308	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	292	1422	0	0	0
Pedestrians	123		31			51
Lane Width (ft)	12.0		12.0			0.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	10		3			0
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						144
pX, platoon unblocked						
vC, conflicting volume	1576	529			1545	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1576	529			1545	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	34			100	
cM capacity (veh/h)	88	443			382	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4
Volume Total	146	146	355	355	355	355
Volume Left	0	0	0	0	0	0
Volume Right	146	146	0	0	0	0
cSH	443	443	1700	1700	1700	1700
Volume to Capacity	0.33	0.33	0.21	0.21	0.21	0.21
Queue Length 95th (ft)	36	36	0	0	0	0
Control Delay (s)	17.1	17.1	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	17.1		0.0			
Approach LOS	C					

Intersection Summary

Average Delay	2.9			
Intersection Capacity Utilization	42.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Background Conditions
9: I Street & 23rd Street

AM Peak Hour
5/20/06



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frpb, ped/bikes	0.87		0.94			1.00
Flpb, ped/bikes	0.62		1.00			0.99
Frt	0.97		0.96			1.00
Flt Protected	0.96		1.00			0.99
Satd. Flow (prot)	744		4152			2960
Flt Permitted	0.96		1.00			0.70
Satd. Flow (perm)	744		4152			2095
Volume (vph)	68	21	681	238	70	417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	23	740	259	76	453
RTOR Reduction (vph)	12	0	63	0	0	0
Lane Group Flow (vph)	85	0	936	0	0	529
Confl. Peds. (#/hr)	1177	1700		253	253	
Parking (#/hr)	3	3			3	3
Turn Type				Perm		
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	27.0		63.0			63.0
Effective Green, g (s)	28.0		64.0			64.0
Actuated g/C Ratio	0.28		0.64			0.64
Clearance Time (s)	5.0		5.0			5.0
Lane Grp Cap (vph)	208		2657			1341
v/s Ratio Prot			0.23			
v/s Ratio Perm	c0.11					c0.25
v/c Ratio	0.41		0.35			0.39
Uniform Delay, d1	29.3		8.4			8.7
Progression Factor	1.00		0.75			1.04
Incremental Delay, d2	5.9		0.3			0.8
Delay (s)	35.2		6.6			9.7
Level of Service	D		A			A
Approach Delay (s)	35.2		6.6			9.7
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

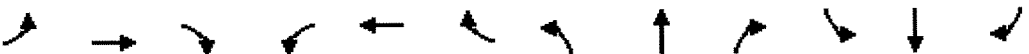
Background Conditions
10: F Street & 23rd Street

AM Peak Hour
5/20/06

											
Movement	NBL	NBT	NBR	SBL2	SBT	SBR	NWL	NWT	NWR	NWR2	
Lane Configurations											
Ideal Flow (vphpl)	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	
Frpb, ped/bikes		0.97			0.99			0.94		0.67	
Flpb, ped/bikes		0.99			1.00			1.00		1.00	
Frt		0.98			1.00			0.94		0.85	
Flt Protected		1.00			1.00			0.99		1.00	
Satd. Flow (prot)		3002			3121			1393		908	
Flt Permitted		0.86			0.77			0.99		1.00	
Satd. Flow (perm)		2596			2407			1393		908	
Volume (vph)	79	1069	140	30	474	15	17	32	35	2	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	86	1162	152	33	515	16	18	35	38	2	
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	1	
Lane Group Flow (vph)	0	1400	0	0	562	0	0	91	0	1	
Confl. Peds. (#/hr)	404		447	447		404			137	447	
Turn Type	Perm			Perm			Perm			Perm	
Protected Phases		6			2			4			
Permitted Phases	6			2			4			4	
Actuated Green, G (s)		56.0			52.0			32.0		32.0	
Effective Green, g (s)		58.0			58.0			34.0		34.0	
Actuated g/C Ratio		0.58			0.58			0.34		0.34	
Clearance Time (s)		6.0			10.0			6.0		6.0	
Lane Grp Cap (vph)		1506			1396			474		309	
v/s Ratio Prot											
v/s Ratio Perm		0.54			0.23			0.07		0.00	
v/c Ratio		0.93			0.40			0.19		0.00	
Uniform Delay, d1		19.1			11.5			23.3		21.8	
Progression Factor		0.25			0.71			1.00		1.00	
Incremental Delay, d2		8.6			0.8			0.9		0.0	
Delay (s)		13.4			9.0			24.2		21.8	
Level of Service		B			A			C		C	
Approach Delay (s)		13.4			9.0			24.1			
Approach LOS		B			A			C			
Intersection Summary											
HCM Average Control Delay		12.7			HCM Level of Service				B		
HCM Volume to Capacity ratio		0.66									
Actuated Cycle Length (s)		100.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization		139.9%			ICU Level of Service				H		
Analysis Period (min)		15									
c Critical Lane Group											

Background Conditions
11: Virginia Avenue (EB) & 23rd Street

AM Peak Hour
5/20/06

												
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	1.00		0.95	
Frpb, ped/bikes		0.90						1.00	0.56		1.00	
Flpb, ped/bikes		1.00						1.00	1.00		0.99	
Frt		0.93						1.00	0.85		1.00	
Flt Protected		0.99						1.00	1.00		0.99	
Satd. Flow (prot)		1386						3185	796		2971	
Flt Permitted		0.99						1.00	1.00		0.69	
Satd. Flow (perm)		1386						3185	796		2049	
Volume (vph)	30	53	99	0	0	0	0	1233	35	50	441	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	58	108	0	0	0	0	1340	38	54	479	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	165	0	0	0	0	0	1340	22	0	533	0
Confl. Peds. (#/hr)			188	188			404		447	447		404
Parking (#/hr)											3	3
Turn Type	custom								Perm	Perm		
Protected Phases	4	4						2			6	
Permitted Phases	4								2	6		
Actuated Green, G (s)		32.0						52.0	52.0		56.0	
Effective Green, g (s)		34.0						58.0	58.0		58.0	
Actuated g/C Ratio		0.34						0.58	0.58		0.58	
Clearance Time (s)		6.0						10.0	10.0		6.0	
Lane Grp Cap (vph)		471						1847	462		1188	
v/s Ratio Prot		c0.12						c0.42				
v/s Ratio Perm									0.03		0.26	
v/c Ratio		0.35						0.73	0.05		0.45	
Uniform Delay, d1		24.7						15.2	9.1		11.9	
Progression Factor		1.00						1.00	1.00		0.14	
Incremental Delay, d2		2.0						2.5	0.2		1.1	
Delay (s)		26.8						17.8	9.3		2.8	
Level of Service		C						B	A		A	
Approach Delay (s)		26.8			0.0			17.5			2.8	
Approach LOS		C			A			B			A	
Intersection Summary												
HCM Average Control Delay		14.7									B	
HCM Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		123.3%							H			
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
12: K Street WB & 22nd Street

AM Peak Hour
5/20/06

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				
Lane Util. Factor					0.95			0.91				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					1.00			0.98				
Frt					0.94			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					2820			4453				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					2820			4453				
Volume (vph)	0	0	0	0	141	96	128	621	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	153	104	139	675	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	82	0	0	31	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	175	0	0	783	0	0	0	0
Confl. Peds. (#/hr)			50	50			248					248
Parking (#/hr)					3	3						
Turn Type							Perm					
Protected Phases					1 3			2				
Permitted Phases							2					
Actuated Green, G (s)					24.0			68.0				
Effective Green, g (s)					21.0			68.0				
Actuated g/C Ratio					0.21			0.68				
Clearance Time (s)								4.0				
Lane Grp Cap (vph)					592			3028				
v/s Ratio Prot					c0.06							
v/s Ratio Perm								0.18				
v/c Ratio					0.30			0.26				
Uniform Delay, d1					33.3			6.2				
Progression Factor					1.00			0.00				
Incremental Delay, d2					1.3			0.2				
Delay (s)					34.5			0.2				
Level of Service					C			A				
Approach Delay (s)		0.0			34.5			0.2			0.0	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM Average Control Delay		8.4										
HCM Volume to Capacity ratio		0.25										
Actuated Cycle Length (s)		100.0										
Intersection Capacity Utilization		32.8%										
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
13: K Street EB & 22nd Street

AM Peak Hour
5/20/06

												
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				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						1.00				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		3179						4562				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		3179						4562				
Volume (vph)	11	433	0	0	0	0	0	739	12	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	471	0	0	0	0	0	803	13	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	481	0	0	0	0	0	814	0	0	0	0
Confl. Peds. (#/hr)	50		50	50		50	248		50	50		248
Turn Type	Perm											
Protected Phases		4 6						5				
Permitted Phases	4 6											
Actuated Green, G (s)		52.0						40.0				
Effective Green, g (s)		52.0						40.0				
Actuated g/C Ratio		0.52						0.40				
Clearance Time (s)								4.0				
Lane Grp Cap (vph)		1653						1825				
v/s Ratio Prot								0.18				
v/s Ratio Perm		0.15										
v/c Ratio		0.29						0.45				
Uniform Delay, d1		13.6						21.9				
Progression Factor		0.14						0.23				
Incremental Delay, d2		0.4						0.6				
Delay (s)		2.3						5.6				
Level of Service		A						A				
Approach Delay (s)		2.3			0.0			5.6			0.0	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay		4.4										
HCM Volume to Capacity ratio		0.36										
Actuated Cycle Length (s)		100.0							12.0			
Intersection Capacity Utilization		39.9%							A			
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
14: Pennsylvania Avenue & 22nd Street

AM Peak Hour
5/20/06



Movement	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↑↑↑	↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	
Lane Util. Factor		0.91	0.76			0.91	
Frpb, ped/bikes		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00			1.00	
Frt		1.00	0.85			0.98	
Flt Protected		1.00	1.00			1.00	
Satd. Flow (prot)		4576	3124			4450	
Flt Permitted		1.00	1.00			1.00	
Satd. Flow (perm)		4576	3124			4450	
Volume (vph)	2	1154	291	188	52	560	84
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1254	316	204	57	609	91
RTOR Reduction (vph)	0	0	116	0	0	18	0
Lane Group Flow (vph)	0	1256	404	0	0	739	0
Confl. Peds. (#/hr)	34		16	34	16		21
Parking (#/hr)			3	3			
Turn Type	custom		custom		Perm		
Protected Phases	9	7 9	7			8	
Permitted Phases	7				8		
Actuated Green, G (s)		64.0	32.0			24.0	
Effective Green, g (s)		62.0	32.0			26.0	
Actuated g/C Ratio		0.62	0.32			0.26	
Clearance Time (s)			4.0			6.0	
Lane Grp Cap (vph)		3020	1000			1157	
v/s Ratio Prot		c0.12	0.13				
v/s Ratio Perm		0.15				0.17	
v/c Ratio		0.42	0.40			0.64	
Uniform Delay, d1		9.7	26.6			32.8	
Progression Factor		0.18	1.00			1.00	
Incremental Delay, d2		0.4	1.2			2.7	
Delay (s)		2.2	27.8			35.5	
Level of Service		A	C			D	
Approach Delay (s)		2.2				35.5	
Approach LOS		A				D	

Intersection Summary

HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
15: I Street & 22nd Street

AM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	219	142	0	0	33	30	31	441	120	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	238	154	0	0	36	33	34	479	130	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2								
Volume Total (vph)	392	68	273	370								
Volume Left (vph)	238	0	34	0								
Volume Right (vph)	0	33	0	130								
Hadj (s)	0.16	-0.25	0.10	-0.21								
Departure Headway (s)	5.7	5.8	5.9	5.6								
Degree Utilization, x	0.62	0.11	0.45	0.58								
Capacity (veh/h)	619	567	590	623								
Control Delay (s)	17.3	9.6	12.6	14.9								
Approach Delay (s)	17.3	9.6	13.9									
Approach LOS	C	A	B									
Intersection Summary												
Delay			14.8									
HCM Level of Service			B									
Intersection Capacity Utilization			58.2%		ICU Level of Service				B			
Analysis Period (min)			15									

Background Conditions
17: K Street WB & 24th Street

AM Peak Hour
5/20/06

												
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	
Lane Util. Factor					0.95			0.95			1.00	
Frpb, ped/bikes					1.00			1.00			0.98	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.99			1.00			0.97	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					2966			3183			1602	
Flt Permitted					1.00			0.95			1.00	
Satd. Flow (perm)					2966			3038			1602	
Volume (vph)	0	0	0	0	204	15	3	469	0	0	156	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	222	16	3	510	0	0	170	41
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	0	233	0	0	513	0	0	203	0
Confl. Peds. (#/hr)	31					31	100					100
Parking (#/hr)					3	3						
Turn Type				Perm			Perm					
Protected Phases					9 11			10			10	
Permitted Phases				9 11			10					
Actuated Green, G (s)					57.0			35.0			35.0	
Effective Green, g (s)					57.0			35.0			35.0	
Actuated g/C Ratio					0.57			0.35			0.35	
Clearance Time (s)								4.0			4.0	
Lane Grp Cap (vph)					1691			1063			561	
v/s Ratio Prot					c0.08						0.13	
v/s Ratio Perm								c0.17				
v/c Ratio					0.14			0.48			0.36	
Uniform Delay, d1					10.0			25.4			24.2	
Progression Factor					0.15			0.63			0.24	
Incremental Delay, d2					0.2			1.2			0.5	
Delay (s)					1.6			17.2			6.2	
Level of Service					A			B			A	
Approach Delay (s)		0.0			1.6			17.2			6.2	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM Average Control Delay		10.9				HCM Level of Service				B		
HCM Volume to Capacity ratio		0.27										
Actuated Cycle Length (s)		100.0				Sum of lost time (s)			8.0			
Intersection Capacity Utilization		36.7%				ICU Level of Service			A			
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
18: K Street EB & 24th Street

AM Peak Hour

5/20/06

												
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	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		1.00						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		2940						1609			1650	
Flt Permitted		0.99						1.00			0.75	
Satd. Flow (perm)		2940						1609			1252	
Volume (vph)	185	568	34	0	0	0	0	287	84	41	115	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	617	37	0	0	0	0	312	91	45	125	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	852	0	0	0	0	0	393	0	0	170	0
Confl. Peds. (#/hr)			40	40					40	40		
Parking (#/hr)	3	3	3									
Turn Type	Perm						D.P+P					
Protected Phases		3 7						2		1	1 2	
Permitted Phases	3 7									2		
Actuated Green, G (s)		48.0						35.0			39.0	
Effective Green, g (s)		48.0						35.0			40.0	
Actuated g/C Ratio		0.48						0.35			0.40	
Clearance Time (s)								4.0				
Lane Grp Cap (vph)		1411						563			521	
v/s Ratio Prot								c0.24			c0.02	
v/s Ratio Perm		0.29									0.11	
v/c Ratio		0.60						0.70			0.33	
Uniform Delay, d1		19.0						27.9			20.7	
Progression Factor		1.00						1.00			0.06	
Incremental Delay, d2		1.9						7.0			1.6	
Delay (s)		21.0						35.0			2.7	
Level of Service		C						C			A	
Approach Delay (s)		21.0			0.0			35.0			2.7	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM Average Control Delay		22.7										
HCM Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		67.2%										
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
19: H Street & 23rd Street

AM Peak Hour
5/20/06

												
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			0.91			0.95	
Frbp, ped/bikes		0.99			0.98			0.96			0.98	
Flpb, ped/bikes		1.00			0.99			1.00			0.99	
Frt		0.96			0.97			0.98			0.99	
Flt Protected		1.00			0.99			1.00			0.99	
Satd. Flow (prot)		1569			1567			4294			3042	
Flt Permitted		0.98			0.92			0.93			0.70	
Satd. Flow (perm)		1541			1455			3980			2138	
Volume (vph)	18	125	64	12	21	10	19	906	163	61	367	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	136	70	13	23	11	21	985	177	66	399	43
RTOR Reduction (vph)	0	16	0	0	8	0	0	25	0	0	7	0
Lane Group Flow (vph)	0	210	0	0	39	0	0	1158	0	0	501	0
Confl. Peds. (#/hr)	57		37	37		57	286		286	286		286
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.0			31.0			61.0			61.0	
Effective Green, g (s)		31.0			31.0			61.0			61.0	
Actuated g/C Ratio		0.31			0.31			0.61			0.61	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		478			451			2428			1304	
v/s Ratio Prot												
v/s Ratio Perm		c0.14			0.03			c0.29			0.23	
v/c Ratio		0.44			0.09			0.48			0.38	
Uniform Delay, d1		27.6			24.5			10.7			9.9	
Progression Factor		1.00			1.00			0.06			1.19	
Incremental Delay, d2		2.9			0.4			0.3			0.8	
Delay (s)		30.5			24.8			0.9			12.6	
Level of Service		C			C			A			B	
Approach Delay (s)		30.5			24.8			0.9			12.6	
Approach LOS		C			C			A			B	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
20: K Street WB & Pennsylvania Avenue

AM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	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				
Lane Util. Factor					0.95			0.91				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					1.00			1.00				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3185			4577				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3185			4577				
Volume (vph)	0	0	0	0	219	0	0	1204	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	238	0	0	1309	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	238	0	0	1309	0	0	0	0
Confl. Peds. (#/hr)									138	138		
Turn Type												
Protected Phases					2			1 3				
Permitted Phases												
Actuated Green, G (s)					43.0			49.0				
Effective Green, g (s)					43.0			49.0				
Actuated g/C Ratio					0.43			0.49				
Clearance Time (s)					4.0							
Lane Grp Cap (vph)					1370			2243				
v/s Ratio Prot					c0.07			c0.29				
v/s Ratio Perm												
v/c Ratio					0.17			0.58				
Uniform Delay, d1					17.6			18.2				
Progression Factor					0.89			0.04				
Incremental Delay, d2					0.3			0.1				
Delay (s)					15.9			0.8				
Level of Service					B			A				
Approach Delay (s)		0.0			15.9			0.8			0.0	
Approach LOS		A			B			A			A	
Intersection Summary												
HCM Average Control Delay			3.1								A	
HCM Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			100.0							8.0		
Intersection Capacity Utilization			39.2%							A		
Analysis Period (min)			15									
c Critical Lane Group												

Background Conditions
25: K Street EB & Pennsylvania Avenue

AM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	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	
Lane Util. Factor		0.95									0.91	
Frbp, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3185									4577	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3185									4577	
Volume (vph)	0	443	0	0	0	0	0	0	0	0	343	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	482	0	0	0	0	0	0	0	0	373	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	482	0	0	0	0	0	0	0	0	373	0
Confl. Peds. (#/hr)	363					363				21	21	
Turn Type												
Protected Phases		10									11	
Permitted Phases												
Actuated Green, G (s)		38.0									53.0	
Effective Green, g (s)		39.0									53.0	
Actuated g/C Ratio		0.39									0.53	
Clearance Time (s)		5.0									4.0	
Lane Grp Cap (vph)		1242									2426	
v/s Ratio Prot		c0.15									c0.08	
v/s Ratio Perm												
v/c Ratio		0.39									0.15	
Uniform Delay, d1		21.9									12.0	
Progression Factor		0.60									0.37	
Incremental Delay, d2		0.8									0.1	
Delay (s)		13.9									4.5	
Level of Service		B									A	
Approach Delay (s)		13.9			0.0			0.0			4.5	
Approach LOS		B			A			A			A	
Intersection Summary												
HCM Average Control Delay		9.8				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.25										
Actuated Cycle Length (s)		100.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		27.6%				ICU Level of Service		A				
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
1: Washington Circle & 23rd Street

PM Peak Hour
5/20/06



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑				↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				
Lane Util. Factor	0.86	0.86				0.88
Frpb, ped/bikes	0.96	0.89				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	0.95	0.85				0.85
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	3960	1094				2364
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	3960	1094				2364
Volume (vph)	1050	1060	0	0	0	450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1141	1152	0	0	0	489
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1717	576	0	0	0	489
Confl. Peds. (#/hr)		324	324		125	
Parking (#/hr)						3
Turn Type	Perm		custom			
Protected Phases	1 2 3					
Permitted Phases		1 2 3				12
Actuated Green, G (s)	100.0	100.0				74.0
Effective Green, g (s)	100.0	100.0				74.0
Actuated g/C Ratio	1.00	1.00				0.74
Clearance Time (s)						4.0
Lane Grp Cap (vph)	3960	1094				1749
v/s Ratio Prot	0.43					
v/s Ratio Perm		0.53				0.21
v/c Ratio	0.43	0.53				0.28
Uniform Delay, d1	0.0	0.0				4.3
Progression Factor	1.00	1.00				0.62
Incremental Delay, d2	0.3	1.5				0.4
Delay (s)	0.3	1.5				3.0
Level of Service	A	A				A
Approach Delay (s)	0.6			0.0	3.0	
Approach LOS	A			A	A	

Intersection Summary

HCM Average Control Delay	1.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
2: Washington Circle & New Hampshire Avenue

PM Peak Hour
5/20/06



Movement	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations			↙↘↘	↗		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		4.0
Lane Util. Factor			0.94	1.00		1.00
Frpb, ped/bikes			1.00	1.00		0.92
Flpb, ped/bikes			1.00	1.00		1.00
Frt			1.00	0.85		0.86
Flt Protected			0.95	1.00		1.00
Satd. Flow (prot)			4491	1425		1185
Flt Permitted			0.95	1.00		1.00
Satd. Flow (perm)			4491	1425		1185
Volume (vph)	0	0	1950	389	0	160
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2120	423	0	174
RTOR Reduction (vph)	0	0	309	89	0	0
Lane Group Flow (vph)	0	0	1811	334	0	174
Confl. Peds. (#/hr)	184	113	125	184	113	125
Parking (#/hr)						3
Turn Type			custom			
Protected Phases			4 7	8 10		
Permitted Phases						10
Actuated Green, G (s)			73.0	79.0		49.0
Effective Green, g (s)			73.0	79.0		57.0
Actuated g/C Ratio			0.73	0.79		0.57
Clearance Time (s)						12.0
Lane Grp Cap (vph)			3278	1126		675
v/s Ratio Prot			c0.40	c0.23		
v/s Ratio Perm						0.15
v/c Ratio			0.55	0.30		0.26
Uniform Delay, d1			6.1	2.9		10.8
Progression Factor			1.00	1.00		1.00
Incremental Delay, d2			0.7	0.7		0.9
Delay (s)			6.8	3.6		11.8
Level of Service			A	A		B
Approach Delay (s)	0.0		6.2		11.8	
Approach LOS	A		A		B	
Intersection Summary						
HCM Average Control Delay			6.6		HCM Level of Service	A
HCM Volume to Capacity ratio			0.49			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			77.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Background Conditions
3: K Street EB & Washington Circle

PM Peak Hour
5/20/06



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		TT			TTT	
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	263	0	0	2076	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	286	0	0	2257	0
Pedestrians	43			113		
Lane Width (ft)	12.0			0.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	4			0		
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				126		
pX, platoon unblocked						
vC, conflicting volume	2300	908	2300			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2300	908	2300			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	31	268	208			

Direction, Lane #	EB 1	EB 2	SB 1	SB 2	SB 3
Volume Total	143	143	752	752	752
Volume Left	0	0	0	0	0
Volume Right	143	143	0	0	0
cSH	268	268	1700	1700	1700
Volume to Capacity	0.53	0.53	0.44	0.44	0.44
Queue Length 95th (ft)	72	72	0	0	0
Control Delay (s)	32.8	32.8	0.0	0.0	0.0
Lane LOS	D	D			
Approach Delay (s)	32.8		0.0		
Approach LOS	D				

Intersection Summary

Average Delay	3.7		
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

Background Conditions
5: Washington Circle & 23rd Street

PM Peak Hour
5/20/06



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
Lane Util. Factor			0.86			0.76
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			5767			3249
Flt Permitted			1.00			1.00
Satd. Flow (perm)			5767			3249
Volume (vph)	0	0	1251	0	0	1422
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1360	0	0	1546
RTOR Reduction (vph)	0	0	0	0	0	60
Lane Group Flow (vph)	0	0	1360	0	0	1486
Confl. Peds. (#/hr)	119			119	91	
Turn Type					custom	
Protected Phases			10 11			
Permitted Phases						1 3
Actuated Green, G (s)			100.0			80.0
Effective Green, g (s)			100.0			80.0
Actuated g/C Ratio			1.00			0.80
Clearance Time (s)						
Lane Grp Cap (vph)			5767			2599
v/s Ratio Prot			c0.24			
v/s Ratio Perm						c0.46
v/c Ratio			0.24			0.57
Uniform Delay, d1			0.0			3.7
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.9
Delay (s)			0.1			4.6
Level of Service			A			A
Approach Delay (s)		0.0	0.1		4.6	
Approach LOS		A	A		A	
Intersection Summary						
HCM Average Control Delay			2.5		HCM Level of Service	A
HCM Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			63.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Background Conditions
6: Washington Circle & New Hampshire Avenue

PM Peak Hour
5/20/06



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		
Lane Util. Factor			0.86	0.86		
Frpb, ped/bikes			0.99	1.00		
Flpb, ped/bikes			1.00	1.00		
Frt			0.99	0.85		
Flt Protected			1.00	1.00		
Satd. Flow (prot)			4257	1226		
Flt Permitted			1.00	1.00		
Satd. Flow (perm)			4257	1226		
Volume (vph)	0	0	1251	471	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1360	512	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1446	426	0	0
Confl. Peds. (#/hr)	276			276		322
Turn Type			custom			
Protected Phases			7 9	4 6		
Permitted Phases						
Actuated Green, G (s)			77.0	80.0		
Effective Green, g (s)			77.0	80.0		
Actuated g/C Ratio			0.77	0.80		
Clearance Time (s)						
Lane Grp Cap (vph)			3278	981		
v/s Ratio Prot			c0.34	c0.35		
v/s Ratio Perm						
v/c Ratio			0.44	0.43		
Uniform Delay, d1			4.0	3.1		
Progression Factor			1.17	0.86		
Incremental Delay, d2			0.4	1.4		
Delay (s)			5.1	4.0		
Level of Service			A	A		
Approach Delay (s)		0.0	4.9		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
7: K Street WB & Washington Circle

PM Peak Hour
5/20/06



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		TT	TTT			
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	386	1337	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	420	1453	0	0	0
Pedestrians	68		71			72
Lane Width (ft)	12.0		12.0			0.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	6		6			0
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						94
pX, platoon unblocked						
vC, conflicting volume	1592	503			1521	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1592	503			1521	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	13			100	
cM capacity (veh/h)	87	485			410	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4
Volume Total	210	210	363	363	363	363
Volume Left	0	0	0	0	0	0
Volume Right	210	210	0	0	0	0
cSH	485	485	1700	1700	1700	1700
Volume to Capacity	0.43	0.43	0.21	0.21	0.21	0.21
Queue Length 95th (ft)	54	54	0	0	0	0
Control Delay (s)	18.0	18.0	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	18.0		0.0			
Approach LOS	C					

Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			48.2%	ICU Level of Service		A
Analysis Period (min)			15			

Background Conditions
9: I Street & 23rd Street

PM Peak Hour
5/20/06



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frpb, ped/bikes	0.96		0.96			1.00
Flpb, ped/bikes	0.55		1.00			0.99
Frt	0.99		0.98			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	744		4317			2972
Flt Permitted	0.96		1.00			0.88
Satd. Flow (perm)	744		4317			2625
Volume (vph)	313	25	443	63	61	1092
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	340	27	482	68	66	1187
RTOR Reduction (vph)	3	0	18	0	0	0
Lane Group Flow (vph)	364	0	532	0	0	1253
Confl. Peds. (#/hr)	1095	1412		379	379	
Parking (#/hr)	3	3			3	3
Turn Type				Perm		
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	27.0		63.0			63.0
Effective Green, g (s)	28.0		64.0			64.0
Actuated g/C Ratio	0.28		0.64			0.64
Clearance Time (s)	5.0		5.0			5.0
Lane Grp Cap (vph)	208		2763			1680
v/s Ratio Prot			0.12			
v/s Ratio Perm	c0.49					c0.48
v/c Ratio	1.75		0.19			0.75
Uniform Delay, d1	36.0		7.4			12.4
Progression Factor	1.00		1.25			1.04
Incremental Delay, d2	356.9		0.2			2.8
Delay (s)	392.9		9.4			15.7
Level of Service	F		A			B
Approach Delay (s)	392.9		9.4			15.7
Approach LOS	F		A			B

Intersection Summary

HCM Average Control Delay	77.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
10: F Street & 23rd Street

PM Peak Hour
5/20/06

										
Movement	NBL	NBT	NBR	SBL2	SBT	SBR	NWL	NWT	NWR	NWR2
Lane Configurations					  			 		
Ideal Flow (vphpl)	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			0.91			1.00		1.00
Frbp, ped/bikes		0.95			1.00			0.86		1.00
Flpb, ped/bikes		1.00			0.99			1.00		1.00
Frt		0.98			1.00			0.91		0.85
Flt Protected		1.00			1.00			0.99		1.00
Satd. Flow (prot)		2951			4536			1309		1425
Flt Permitted		0.69			0.89			0.99		1.00
Satd. Flow (perm)		2035			4063			1309		1425
Volume (vph)	48	393	63	49	1419	4	9	20	46	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	427	68	53	1542	4	10	22	50	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	547	0	0	1599	0	0	82	0	0
Confl. Peds. (#/hr)	614		382	382		614			229	382
Turn Type	Perm			Perm			Perm			NA
Protected Phases		6			2			4		
Permitted Phases	6			2			4			
Actuated Green, G (s)		56.0			52.0			32.0		0.0
Effective Green, g (s)		58.0			58.0			34.0		0.0
Actuated g/C Ratio		0.58			0.58			0.34		0.00
Clearance Time (s)		6.0			10.0			6.0		
Lane Grp Cap (vph)		1180			2357			445		0
v/s Ratio Prot										
v/s Ratio Perm		0.27			0.39			0.06		
v/c Ratio		0.46			0.68			0.18		0.00
Uniform Delay, d1		12.1			14.5			23.2		50.0
Progression Factor		0.33			0.40			1.00		1.00
Incremental Delay, d2		1.3			1.0			0.9		0.0
Delay (s)		5.2			6.8			24.1		50.0
Level of Service		A			A			C		D
Approach Delay (s)		5.2			6.8			26.7		
Approach LOS		A			A			C		
Intersection Summary										
HCM Average Control Delay		7.2				HCM Level of Service		A		
HCM Volume to Capacity ratio		0.50								
Actuated Cycle Length (s)		100.0				Sum of lost time (s)		8.0		
Intersection Capacity Utilization		120.5%				ICU Level of Service		H		
Analysis Period (min)		15								
c Critical Lane Group										

Background Conditions
11: Virginia Avenue (EB) & 23rd Street

PM Peak Hour
5/20/06

												
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	
Lane Util. Factor		1.00						0.95			0.91	
Frpb, ped/bikes		0.86						0.96			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.90						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		1297						3024			4356	
Flt Permitted		1.00						1.00			0.87	
Satd. Flow (perm)		1297						3024			3791	
Volume (vph)	34	63	249	0	0	0	0	464	50	70	1359	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	68	271	0	0	0	0	504	54	76	1477	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	375	0	0	0	0	0	550	0	0	1553	0
Confl. Peds. (#/hr)			196	196			614		382	382		614
Parking (#/hr)											3	3
Turn Type	custom						Perm					
Protected Phases	4	4						2			6	
Permitted Phases	4									6		
Actuated Green, G (s)		32.0						52.0			56.0	
Effective Green, g (s)		34.0						58.0			58.0	
Actuated g/C Ratio		0.34						0.58			0.58	
Clearance Time (s)		6.0						10.0			6.0	
Lane Grp Cap (vph)		441						1754			2199	
v/s Ratio Prot		c0.29						0.18				
v/s Ratio Perm											c0.41	
v/c Ratio		0.85						0.31			0.71	
Uniform Delay, d1		30.6						10.8			14.9	
Progression Factor		1.00						1.00			0.07	
Incremental Delay, d2		18.3						0.5			1.4	
Delay (s)		49.0						11.2			2.5	
Level of Service		D						B			A	
Approach Delay (s)		49.0			0.0			11.2			2.5	
Approach LOS		D			A			B			A	
Intersection Summary												
HCM Average Control Delay		11.5									B	
HCM Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		123.0%									H	
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
12: K Street WB & 22nd Street

PM Peak Hour
5/20/06

												
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				
Lane Util. Factor					0.95			0.91				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					1.00			0.96				
Frt					0.94			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					2824			4355				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					2824			4355				
Volume (vph)	0	0	0	0	251	165	135	365	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	273	179	147	397	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	109	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	343	0	0	522	0	0	0	0
Confl. Peds. (#/hr)			50	50			312					312
Parking (#/hr)					3	3						
Turn Type							Perm					
Protected Phases					1 3			2				
Permitted Phases							2					
Actuated Green, G (s)					21.0			71.0				
Effective Green, g (s)					18.0			71.0				
Actuated g/C Ratio					0.18			0.71				
Clearance Time (s)								4.0				
Lane Grp Cap (vph)					508			3092				
v/s Ratio Prot					c0.12							
v/s Ratio Perm								0.12				
v/c Ratio					0.68			0.17				
Uniform Delay, d1					38.3			4.8				
Progression Factor					1.00			0.00				
Incremental Delay, d2					7.0			0.1				
Delay (s)					45.3			0.1				
Level of Service					D			A				
Approach Delay (s)		0.0			45.3			0.1			0.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM Average Control Delay			20.6				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			35.2%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Background Conditions
13: K Street EB & 22nd Street

PM Peak Hour
5/20/06

												
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				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.99				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		3172						4537				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		3172						4537				
Volume (vph)	15	302	0	0	0	0	0	485	23	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	328	0	0	0	0	0	527	25	0	0	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	340	0	0	0	0	0	547	0	0	0	0
Confl. Peds. (#/hr)	50		50	50		50	248		50	50		248
Turn Type	Perm											
Protected Phases		4 6						5				
Permitted Phases	4 6											
Actuated Green, G (s)		41.0						51.0				
Effective Green, g (s)		41.0						51.0				
Actuated g/C Ratio		0.41						0.51				
Clearance Time (s)								4.0				
Lane Grp Cap (vph)		1301						2314				
v/s Ratio Prot								c0.12				
v/s Ratio Perm		0.11										
v/c Ratio		0.26						0.24				
Uniform Delay, d1		19.5						13.7				
Progression Factor		0.47						0.35				
Incremental Delay, d2		0.5						0.2				
Delay (s)		9.7						4.9				
Level of Service		A						A				
Approach Delay (s)		9.7			0.0			4.9			0.0	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay		6.7						HCM Level of Service		A		
HCM Volume to Capacity ratio		0.25										
Actuated Cycle Length (s)		100.0						Sum of lost time (s)		12.0		
Intersection Capacity Utilization		33.3%						ICU Level of Service		A		
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
14: Pennsylvania Avenue & 22nd Street

PM Peak Hour
5/20/06



Movement	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↑↑↑	↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	
Lane Util. Factor		0.91	0.76			0.91	
Frpb, ped/bikes		1.00	1.00			0.99	
Flpb, ped/bikes		1.00	1.00			1.00	
Frt		1.00	0.85			0.97	
Flt Protected		1.00	1.00			0.99	
Satd. Flow (prot)		4575	3124			4354	
Flt Permitted		1.00	1.00			0.99	
Satd. Flow (perm)		4575	3124			4354	
Volume (vph)	2	661	736	224	80	282	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	718	800	243	87	307	83
RTOR Reduction (vph)	0	0	41	0	0	33	0
Lane Group Flow (vph)	0	720	1002	0	0	444	0
Confl. Peds. (#/hr)	47		13	47	13		43
Parking (#/hr)			3	3			
Turn Type	custom	custom		Perm			
Protected Phases	9	7 9	7			8	
Permitted Phases	7				8		
Actuated Green, G (s)		53.0	28.0			35.0	
Effective Green, g (s)		51.0	28.0			37.0	
Actuated g/C Ratio		0.51	0.28			0.37	
Clearance Time (s)			4.0			6.0	
Lane Grp Cap (vph)		2516	875			1611	
v/s Ratio Prot		c0.07	c0.32				
v/s Ratio Perm		0.09				0.10	
v/c Ratio		0.29	1.15			0.28	
Uniform Delay, d1		14.1	36.0			22.1	
Progression Factor		0.80	1.00			1.00	
Incremental Delay, d2		0.3	78.8			0.4	
Delay (s)		11.5	114.8			22.5	
Level of Service		B	F			C	
Approach Delay (s)		11.5				22.5	
Approach LOS		B				C	

Intersection Summary

HCM Average Control Delay	61.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Background Conditions
15: I Street & 22nd Street

PM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	55	70	0	0	223	96	84	240	96	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	76	0	0	242	104	91	261	104	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2								
Volume Total (vph)	136	347	222	235								
Volume Left (vph)	60	0	91	0								
Volume Right (vph)	0	104	0	104								
Hadj (s)	0.12	-0.15	0.24	-0.28								
Departure Headway (s)	5.7	5.1	6.0	5.5								
Degree Utilization, x	0.22	0.49	0.37	0.36								
Capacity (veh/h)	590	673	574	626								
Control Delay (s)	10.3	13.0	11.4	10.4								
Approach Delay (s)	10.3	13.0	10.9									
Approach LOS	B	B	B									
Intersection Summary												
Delay			11.6									
HCM Level of Service			B									
Intersection Capacity Utilization			63.8%		ICU Level of Service				B			
Analysis Period (min)			15									

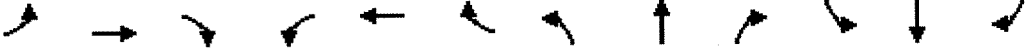
Background Conditions
17: K Street WB & 24th Street

PM Peak Hour
5/20/06

												
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	
Lane Util. Factor					0.95			0.95			1.00	
Frpb, ped/bikes					1.00			1.00			0.97	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					1.00			1.00			0.93	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2993			3154			1521	
Flt Permitted					1.00			0.54			1.00	
Satd. Flow (perm)					2993			1712			1521	
Volume (vph)	0	0	0	0	878	17	57	276	0	0	349	331
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	954	18	62	300	0	0	379	360
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	34	0
Lane Group Flow (vph)	0	0	0	0	971	0	0	362	0	0	705	0
Confl. Peds. (#/hr)	13					13	61					61
Parking (#/hr)					3	3						
Turn Type				Perm			Perm					
Protected Phases					9 11			10			10	
Permitted Phases				9 11			10					
Actuated Green, G (s)					54.0			38.0			38.0	
Effective Green, g (s)					54.0			38.0			38.0	
Actuated g/C Ratio					0.54			0.38			0.38	
Clearance Time (s)								4.0			4.0	
Lane Grp Cap (vph)					1616			651			578	
v/s Ratio Prot					c0.32						c0.46	
v/s Ratio Perm								0.21				
v/c Ratio					0.60			0.93dl			1.22	
Uniform Delay, d1					15.7			24.4			31.0	
Progression Factor					0.31			0.68			0.47	
Incremental Delay, d2					1.4			3.2			100.3	
Delay (s)					6.2			19.7			114.8	
Level of Service					A			B			F	
Approach Delay (s)		0.0			6.2			19.7			114.8	
Approach LOS		A			A			B			F	
Intersection Summary												
HCM Average Control Delay			47.3				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)		12.0			
Intersection Capacity Utilization			87.2%				ICU Level of Service		E			
Analysis Period (min)			15									
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												

Background Conditions
18: K Street EB & 24th Street

PM Peak Hour
5/20/06

												
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	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		1.00						1.00			1.00	
Frt		1.00						0.98			1.00	
Flt Protected		0.98						1.00			1.00	
Satd. Flow (prot)		2944						1633			1673	
Flt Permitted		0.98						1.00			0.99	
Satd. Flow (perm)		2944						1633			1659	
Volume (vph)	115	213	4	0	0	0	0	218	37	11	349	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	232	4	0	0	0	0	237	40	12	379	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	360	0	0	0	0	0	271	0	0	391	0
Confl. Peds. (#/hr)			40	40					40	40		
Parking (#/hr)	3	3	3									
Turn Type	Perm						D.P+P					
Protected Phases		3 7						2		1	1 2	
Permitted Phases	3 7									2		
Actuated Green, G (s)		49.0						34.0			38.0	
Effective Green, g (s)		49.0						34.0			39.0	
Actuated g/C Ratio		0.49						0.34			0.39	
Clearance Time (s)								4.0				
Lane Grp Cap (vph)		1443						555			648	
v/s Ratio Prot								0.17			c0.03	
v/s Ratio Perm		0.12									c0.21	
v/c Ratio		0.25						0.49			0.60	
Uniform Delay, d1		14.8						26.1			24.3	
Progression Factor		1.00						1.00			0.11	
Incremental Delay, d2		0.4						3.1			0.4	
Delay (s)		15.2						29.2			3.1	
Level of Service		B						C			A	
Approach Delay (s)		15.2			0.0			29.2			3.1	
Approach LOS		B			A			C			A	
Intersection Summary												
HCM Average Control Delay		14.4						HCM Level of Service		B		
HCM Volume to Capacity ratio		0.41										
Actuated Cycle Length (s)		100.0						Sum of lost time (s)		12.0		
Intersection Capacity Utilization		50.3%						ICU Level of Service		A		
Analysis Period (min)		15										
c Critical Lane Group												

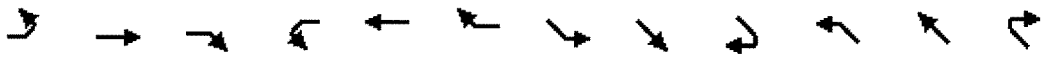
Background Conditions
19: H Street & 23rd Street

PM Peak Hour
5/20/06

												
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			0.91			0.95	
Frpb, ped/bikes		0.96			0.97			0.98			0.98	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.90			0.94			0.99			0.99	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		1437			1522			4396			3080	
Flt Permitted		0.98			0.98			0.90			0.93	
Satd. Flow (perm)		1411			1494			3941			2881	
Volume (vph)	13	29	127	8	53	45	11	407	46	29	1286	111
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	32	138	9	58	49	12	442	50	32	1398	121
RTOR Reduction (vph)	0	12	0	0	26	0	0	13	0	0	6	0
Lane Group Flow (vph)	0	172	0	0	90	0	0	491	0	0	1545	0
Confl. Peds. (#/hr)	57		37	37		57	286		286	286		286
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.0			27.0			65.0			65.0	
Effective Green, g (s)		27.0			27.0			65.0			65.0	
Actuated g/C Ratio		0.27			0.27			0.65			0.65	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		381			403			2562			1873	
v/s Ratio Prot												
v/s Ratio Perm		c0.12			0.06			0.12			c0.54	
v/c Ratio		0.45			0.22			0.19			0.82	
Uniform Delay, d1		30.3			28.3			7.0			13.2	
Progression Factor		1.00			1.00			0.95			0.46	
Incremental Delay, d2		3.8			1.3			0.2			1.4	
Delay (s)		34.1			29.6			6.8			7.6	
Level of Service		C			C			A			A	
Approach Delay (s)		34.1			29.6			6.8			7.6	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM Average Control Delay		10.6									B	
HCM Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		96.5%									F	
Analysis Period (min)		15										
c Critical Lane Group												

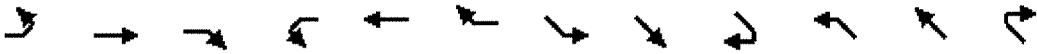
Background Conditions
20: K Street WB & Pennsylvania Avenue

PM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	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				
Lane Util. Factor					0.95			0.91				
Frbp, ped/bikes					1.00			1.00				
Flpb, ped/bikes					1.00			1.00				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3185			4577				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3185			4577				
Volume (vph)	0	0	0	0	895	0	0	961	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	973	0	0	1045	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	973	0	0	1045	0	0	0	0
Confl. Peds. (#/hr)									60	60		
Turn Type												
Protected Phases					2			1 3				
Permitted Phases												
Actuated Green, G (s)					52.0			40.0				
Effective Green, g (s)					52.0			40.0				
Actuated g/C Ratio					0.52			0.40				
Clearance Time (s)					4.0							
Lane Grp Cap (vph)					1656			1831				
v/s Ratio Prot					c0.31			c0.23				
v/s Ratio Perm												
v/c Ratio					0.59			0.57				
Uniform Delay, d1					16.6			23.3				
Progression Factor					0.93			0.11				
Incremental Delay, d2					1.4			0.1				
Delay (s)					16.8			2.7				
Level of Service					B			A				
Approach Delay (s)		0.0			16.8			2.7			0.0	
Approach LOS		A			B			A			A	
Intersection Summary												
HCM Average Control Delay		9.5				HCM Level of Service		A				
HCM Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		100.0				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												

Background Conditions
25: K Street EB & Pennsylvania Avenue

PM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	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	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3185									4577	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3185									4577	
Volume (vph)	0	316	0	0	0	0	0	0	0	0	816	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	343	0	0	0	0	0	0	0	0	887	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	343	0	0	0	0	0	0	0	0	887	0
Confl. Peds. (#/hr)	732					732			16	16		
Turn Type												
Protected Phases		10									11	
Permitted Phases												
Actuated Green, G (s)		33.0									58.0	
Effective Green, g (s)		34.0									58.0	
Actuated g/C Ratio		0.34									0.58	
Clearance Time (s)		5.0									4.0	
Lane Grp Cap (vph)		1083									2655	
v/s Ratio Prot		c0.11									c0.19	
v/s Ratio Perm												
v/c Ratio		0.32									0.33	
Uniform Delay, d1		24.4									10.9	
Progression Factor		0.98									0.09	
Incremental Delay, d2		0.7									0.0	
Delay (s)		24.7									1.1	
Level of Service		C									A	
Approach Delay (s)		24.7			0.0			0.0			1.1	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM Average Control Delay		7.6					HCM Level of Service		A			
HCM Volume to Capacity ratio		0.33										
Actuated Cycle Length (s)		100.0					Sum of lost time (s)		8.0			
Intersection Capacity Utilization		33.9%					ICU Level of Service		A			
Analysis Period (min)		15										
c Critical Lane Group												