

Appendix C  
Existing Intersection Levels of Service

Existing Conditions  
1: Washington Circle & 23rd Street

AM Peak Hour  
5/20/2006



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
Frbp, ped/bikes	1.00	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)	4285	1029				3249
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	4285	1029				3249
Volume (vph)	1775	490	0	0	0	606
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1929	533	0	0	0	659
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1989	473	0	0	0	659
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)	4285	1029				2404
v/s Ratio Prot	c0.46					
v/s Ratio Perm		0.46				0.20
v/c Ratio	0.46	0.46				0.27
Uniform Delay, d1	0.0	0.0				4.2
Progression Factor	1.00	1.00				1.70
Incremental Delay, d2	0.3	1.0				0.3
Delay (s)	0.3	1.0				7.5
Level of Service	A	A				A
Approach Delay (s)	0.4			0.0	7.5	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	1.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
 2: Washington Circle & New Hampshire Avenue

AM Peak Hour  
 5/20/2006



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
Frbp, 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	2076	124	0	189
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2257	135	0	205
RTOR Reduction (vph)	0	0	134	28	0	0
Lane Group Flow (vph)	0	0	2123	107	0	205
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			c0.47	0.07		
v/s Ratio Perm						c0.18
v/c Ratio			0.73	0.09		0.38
Uniform Delay, d1			11.6	2.4		16.5
Progression Factor			1.00	1.00		1.00
Incremental Delay, d2			1.6	0.2		2.0
Delay (s)			13.2	2.6		18.5
Level of Service			B	A		B
Approach Delay (s)	0.0		12.6		18.5	
Approach LOS	A		B		B	
<b>Intersection Summary</b>						
HCM Average Control Delay			13.1		HCM Level of Service	B
HCM Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			80.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Existing Conditions  
3: K Street EB & Washington Circle

AM Peak Hour  
5/20/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑↑			↑↑↑	
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	647	0	0	1553	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	703	0	0	1688	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	1800	906	1800			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1800	906	1800			
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)	64	253	307			

Direction, Lane #	EB 1	EB 2	SB 1	SB 2	SB 3
Volume Total	352	352	563	563	563
Volume Left	0	0	0	0	0
Volume Right	352	352	0	0	0
cSH	253	253	1700	1700	1700
Volume to Capacity	1.39	1.39	0.33	0.33	0.33
Queue Length 95th (ft)	480	480	0	0	0
Control Delay (s)	235.7	235.7	0.0	0.0	0.0
Lane LOS	F	F			
Approach Delay (s)	235.7		0.0		
Approach LOS	F				

Intersection Summary			
Average Delay		69.3	
Intersection Capacity Utilization		73.2%	ICU Level of Service D
Analysis Period (min)		15	

Existing Conditions  
5: Washington Circle & 23rd Street

AM Peak Hour  
5/20/2006



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
Frbp, 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	532	0	0	668
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	578	0	0	726
RTOR Reduction (vph)	0	0	0	0	0	182
Lane Group Flow (vph)	0	0	578	0	0	545
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			c0.10			
v/s Ratio Perm						c0.17
v/c Ratio			0.10			0.23
Uniform Delay, d1			0.0			3.8
Progression Factor			1.00			1.00
Incremental Delay, d2			0.0			0.2
Delay (s)			0.0			4.0
Level of Service			A			A
Approach Delay (s)		0.0	0.0		4.0	
Approach LOS		A	A		A	

Intersection Summary

HCM Average Control Delay	2.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
6: Washington Circle & New Hampshire Avenue

AM Peak Hour  
5/20/2006



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		
Frbp, 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)			3760	1226		
Flt Permitted			1.00	1.00		
Satd. Flow (perm)			3760	1226		
Volume (vph)	0	0	532	963	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	578	1047	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1101	524	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			c0.29	c0.43		
v/s Ratio Perm						
v/c Ratio			0.41	0.57		
Uniform Delay, d1			5.9	5.5		
Progression Factor			1.24	0.57		
Incremental Delay, d2			0.5	2.5		
Delay (s)			7.9	5.6		
Level of Service			A	A		
Approach Delay (s)		0.0	7.1		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
7: K Street WB & Washington Circle

AM Peak Hour  
5/20/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		TT	TTTT			
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	257	1238	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	279	1346	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	1500	510			1469	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1500	510			1469	
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	39			100	
cM capacity (veh/h)	99	456			409	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4
Volume Total	140	140	336	336	336	336
Volume Left	0	0	0	0	0	0
Volume Right	140	140	0	0	0	0
cSH	456	456	1700	1700	1700	1700
Volume to Capacity	0.31	0.31	0.20	0.20	0.20	0.20
Queue Length 95th (ft)	32	32	0	0	0	0
Control Delay (s)	16.3	16.3	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	16.3		0.0			
Approach LOS	C					

Intersection Summary

Average Delay	2.8		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Existing Conditions  
9: I Street & 23rd Street

AM Peak Hour  
5/20/2006



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
Frb, 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)	745		4089			2962
Flt Permitted	0.96		1.00			0.72
Satd. Flow (perm)	745		4089			2143
Volume (vph)	63	20	646	275	62	383
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	22	702	299	67	416
RTOR Reduction (vph)	12	0	77	0	0	0
Lane Group Flow (vph)	78	0	924	0	0	483
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)	209		2617			1372
v/s Ratio Prot			c0.23			
v/s Ratio Perm	c0.11					0.23
v/c Ratio	0.38		0.35			0.35
Uniform Delay, d1	29.0		8.4			8.4
Progression Factor	1.00		0.80			0.96
Incremental Delay, d2	5.1		0.3			0.6
Delay (s)	34.1		7.1			8.6
Level of Service	C		A			A
Approach Delay (s)	34.1		7.1			8.6
Approach LOS	C		A			A

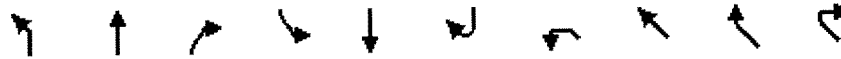
Intersection Summary

HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Existing Conditions  
10: F Street & 23rd Street

AM Peak Hour  
5/20/2006



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
Frbp, ped/bikes		0.98			0.99			0.94		0.67
Flpb, ped/bikes		0.99			1.00			1.00		1.00
Frt		0.99			1.00			0.94		0.85
Flt Protected		1.00			1.00			0.99		1.00
Satd. Flow (prot)		3023			3118			1387		908
Flt Permitted		0.87			0.78			0.99		1.00
Satd. Flow (perm)		2650			2427			1387		908
Volume (vph)	75	1069	114	29	423	14	16	31	36	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)	82	1162	124	32	460	15	17	34	39	2
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	1
Lane Group Flow (vph)	0	1368	0	0	505	0	0	90	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)		1537			1408			472		309
v/s Ratio Prot										
v/s Ratio Perm		c0.52			0.21			0.06		0.00
v/c Ratio		0.89			0.36			0.19		0.00
Uniform Delay, d1		18.2			11.1			23.3		21.8
Progression Factor		0.21			0.71			1.00		1.00
Incremental Delay, d2		5.8			0.7			0.9		0.0
Delay (s)		9.7			8.6			24.2		21.8
Level of Service		A			A			C		C
Approach Delay (s)		9.7			8.6			24.1		
Approach LOS		A			A			C		

Intersection Summary

HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
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			

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

AM Peak Hour  
5/20/2006



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	
Frbp, 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)		1387						3185	796		2970	
Flt Permitted		0.99						1.00	1.00		0.70	
Satd. Flow (perm)		1387						3185	796		2081	
Volume (vph)	30	50	94	0	0	0	0	1228	33	46	393	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	54	102	0	0	0	0	1335	36	50	427	0
RTOR Reduction (vph)	0	39	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	150	0	0	0	0	0	1335	21	0	477	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)		472						1847	462		1207	
v/s Ratio Prot		c0.11						c0.42				
v/s Ratio Perm									0.03		0.23	
v/c Ratio		0.32						0.72	0.05		0.40	
Uniform Delay, d1		24.4						15.2	9.1		11.4	
Progression Factor		1.00						1.00	1.00		0.14	
Incremental Delay, d2		1.8						2.5	0.2		0.9	
Delay (s)		26.2						17.7	9.2		2.5	
Level of Service		C						B	A		A	
Approach Delay (s)		26.2			0.0			17.5			2.5	
Approach LOS		C			A			B			A	

Intersection Summary

HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	123.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
12: K Street WB & 22nd Street

AM Peak Hour  
5/20/2006



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				
Frbp, ped/bikes					1.00			1.00				
Ftpb, ped/bikes					1.00			0.98				
Frt					0.94			1.00				
Flt Protected					1.00			0.99				
Satd. Flow (prot)					2821			4450				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					2821			4450				
Volume (vph)	0	0	0	0	135	91	122	576	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	147	99	133	626	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	78	0	0	33	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	168	0	0	726	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			3026				
v/s Ratio Prot					0.06							
v/s Ratio Perm								0.16				
v/c Ratio					0.28			0.24				
Uniform Delay, d1					33.2			6.1				
Progression Factor					1.00			0.00				
Incremental Delay, d2					1.2			0.2				
Delay (s)					34.4			0.2				
Level of Service					C			A				
Approach Delay (s)		0.0			34.4			0.2			0.0	
Approach LOS		A			C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			8.6								A	
HCM Volume to Capacity ratio			0.23									
Actuated Cycle Length (s)			100.0						4.0			
Intersection Capacity Utilization			31.4%								A	
Analysis Period (min)			15									
c Critical Lane Group												

Existing Conditions  
13: K Street EB & 22nd Street

AM Peak Hour  
5/20/2006



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				
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)		3179						4564				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		3179						4564				
Volume (vph)	10	389	0	0	0	0	0	688	10	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)	11	423	0	0	0	0	0	748	11	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	432	0	0	0	0	0	758	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						1826				
v/s Ratio Prot								c0.17				
v/s Ratio Perm		0.14										
v/c Ratio		0.26						0.42				
Uniform Delay, d1		13.3						21.6				
Progression Factor		0.14						0.24				
Incremental Delay, d2		0.4						0.6				
Delay (s)		2.2						5.7				
Level of Service		A						A				
Approach Delay (s)		2.2			0.0			5.7			0.0	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
 14: Pennsylvania Avenue & 22nd Street

AM Peak Hour  
 5/20/2006



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	
Frbp, 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			4455	
Flt Permitted		1.00	1.00			1.00	
Satd. Flow (perm)		4576	3124			4455	
Volume (vph)	2	1065	275	179	48	517	74
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1158	299	195	52	562	80
RTOR Reduction (vph)	0	0	119	0	0	16	0
Lane Group Flow (vph)	0	1160	375	0	0	678	0
Confl. Peds. (#/hr)	34		16	34	16		21
Parking (#/hr)			3	3			
Turn Type	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			1158	
v/s Ratio Prot		c0.12	0.12				
v/s Ratio Perm		0.14				0.15	
v/c Ratio		0.38	0.38			0.59	
Uniform Delay, d1		9.5	26.3			32.3	
Progression Factor		0.20	1.00			1.00	
Incremental Delay, d2		0.3	1.1			2.2	
Delay (s)		2.2	27.3			34.5	
Level of Service		A	C			C	
Approach Delay (s)		2.2				34.5	
Approach LOS		A				C	

Intersection Summary

HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
15: I Street & 22nd Street

AM Peak Hour  
5/20/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↔				
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	191	138	0	0	49	29	27	366	110	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)	208	150	0	0	53	32	29	398	120	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	358	85	228	318
Volume Left (vph)	208	0	29	0
Volume Right (vph)	0	32	0	120
Hadj (s)	0.15	-0.19	0.10	-0.23
Departure Headway (s)	5.5	5.6	5.9	5.5
Degree Utilization, x	0.55	0.13	0.37	0.49
Capacity (veh/h)	633	590	596	631
Control Delay (s)	14.9	9.5	11.1	12.5
Approach Delay (s)	14.9	9.5	11.9	
Approach LOS	B	A	B	

Intersection Summary			
Delay		12.8	
HCM Level of Service		B	
Intersection Capacity Utilization	53.5%		ICU Level of Service A
Analysis Period (min)		15	

Existing Conditions  
17: K Street WB & 24th Street

AM Peak Hour  
5/20/2006



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	
Frbp, 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)					2967			3183			1597	
Flt Permitted					1.00			0.95			1.00	
Satd. Flow (perm)					2967			3037			1597	
Volume (vph)	0	0	0	0	193	14	3	433	0	0	130	34
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	210	15	3	471	0	0	141	37
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	0	220	0	0	474	0	0	168	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			559	
v/s Ratio Prot					c0.07						0.11	
v/s Ratio Perm								c0.16				
v/c Ratio					0.13			0.45			0.30	
Uniform Delay, d1					10.0			25.0			23.6	
Progression Factor					0.15			0.64			0.17	
Incremental Delay, d2					0.2			1.1			0.8	
Delay (s)					1.6			17.1			4.9	
Level of Service					A			B			A	
Approach Delay (s)		0.0			1.6			17.1			4.9	
Approach LOS		A			A			B			A	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
18: K Street EB & 24th Street

AM Peak Hour  
5/20/2006



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	
Frbp, 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)		2939						1607			1646	
Flt Permitted		0.99						1.00			0.80	
Satd. Flow (perm)		2939						1607			1331	
Volume (vph)	171	528	34	0	0	0	0	265	80	39	91	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)	186	574	37	0	0	0	0	288	87	42	99	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	793	0	0	0	0	0	364	0	0	141	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						562			548	
v/s Ratio Prot								c0.23			c0.01	
v/s Ratio Perm		0.27									0.09	
v/c Ratio		0.56						0.65			0.26	
Uniform Delay, d1		18.5						27.3			20.1	
Progression Factor		1.00						1.00			0.06	
Incremental Delay, d2		1.6						5.7			1.1	
Delay (s)		20.1						33.0			2.3	
Level of Service		C						C			A	
Approach Delay (s)		20.1			0.0			33.0			2.3	
Approach LOS		C			A			C			A	

Intersection Summary

HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Existing Conditions  
19: H Street & 23rd Street

AM Peak Hour  
5/20/2006



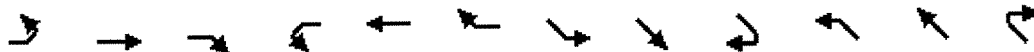
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕↕			↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			0.95	
Lane Util. Factor		1.00			1.00			0.91			0.98	
Frbp, ped/bikes		0.99			0.99			0.96			0.98	
Flpb, ped/bikes		1.00			0.99			1.00			0.99	
Frt		0.97			0.97			0.98			0.99	
Flt Protected		1.00			0.98			1.00			0.99	
Satd. Flow (prot)		1589			1567			4282			3040	
Flt Permitted		0.97			0.90			0.93			0.69	
Satd. Flow (perm)		1556			1426			3978			2121	
Volume (vph)	18	124	44	18	28	13	18	904	171	60	333	36
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	135	48	20	30	14	20	983	186	65	362	39
RTOR Reduction (vph)	0	11	0	0	10	0	0	27	0	0	7	0
Lane Group Flow (vph)	0	192	0	0	54	0	0	1162	0	0	459	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)		482			442			2427			1294	
v/s Ratio Prot												
v/s Ratio Perm		c0.12			0.04			c0.29			0.22	
v/c Ratio		0.40			0.12			0.48			0.36	
Uniform Delay, d1		27.2			24.7			10.7			9.7	
Progression Factor		1.00			1.00			0.06			1.28	
Incremental Delay, d2		2.4			0.6			0.3			0.7	
Delay (s)		29.6			25.3			0.9			13.1	
Level of Service		C			C			A			B	
Approach Delay (s)		29.6			25.3			0.9			13.1	
Approach LOS		C			C			A			B	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	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			

Existing Conditions  
20: K Street WB & Pennsylvania Avenue

AM Peak Hour  
5/20/2006



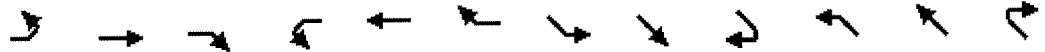
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					↑↑			↑↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0				
Lane Util. Factor					0.95			0.91				
Frbp, ped/bikes					1.00			1.00				
Flpb, ped/bikes					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	207	0	0	1120	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	225	0	0	1217	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	225	0	0	1217	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			c0.27				
v/s Ratio Perm												
v/c Ratio					0.16			0.54				
Uniform Delay, d1					17.5			17.7				
Progression Factor					0.88			0.01				
Incremental Delay, d2					0.3			0.1				
Delay (s)					15.7			0.3				
Level of Service					B			A				
Approach Delay (s)		0.0			15.7			0.3			0.0	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	2.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
 25: K Street EB & Pennsylvania Avenue

AM Peak Hour  
 5/20/2006



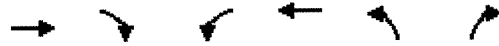
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0										4.0
Lane Util. Factor		0.95										0.91
Frbp, ped/bikes		1.00										1.00
Flpb, ped/bikes		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	399	0	0	0	0	0	0	0	0	323	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	434	0	0	0	0	0	0	0	0	351	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	434	0	0	0	0	0	0	0	0	351	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		c0.14										c0.08
v/s Ratio Perm												
v/c Ratio		0.35										0.14
Uniform Delay, d1		21.5										12.0
Progression Factor		0.57										0.39
Incremental Delay, d2		0.7										0.1
Delay (s)		13.1										4.8
Level of Service		B										A
Approach Delay (s)		13.1			0.0			0.0				4.8
Approach LOS		B			A			A				A

Intersection Summary

HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
1: Washington Circle & 23rd Street

PM Peak Hour  
5/20/2006



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				0.88
Frbp, 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)	3957	1094				2364
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	3957	1094				2364
Volume (vph)	974	997	0	0	0	470
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1059	1084	0	0	0	511
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1601	542	0	0	0	511
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)	3957	1094				1749
v/s Ratio Prot	0.40					
v/s Ratio Perm		c0.50				0.22
v/c Ratio	0.40	0.50				0.29
Uniform Delay, d1	0.0	0.0				4.3
Progression Factor	1.00	1.00				0.67
Incremental Delay, d2	0.3	1.4				0.4
Delay (s)	0.3	1.4				3.3
Level of Service	A	A				A
Approach Delay (s)	0.5			0.0	3.3	
Approach LOS	A			A	A	

Intersection Summary

HCM Average Control Delay	1.1	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	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
 2: Washington Circle & New Hampshire Avenue

PM Peak Hour  
 5/20/2006



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		
Lane Util. Factor			0.94	1.00		1.00
Frbp, 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	1819	375	0	152
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1977	408	0	165
RTOR Reduction (vph)	0	0	315	86	0	0
Lane Group Flow (vph)	0	0	1662	322	0	165
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			c0.37	c0.23		
v/s Ratio Perm						0.14
v/c Ratio			0.51	0.29		0.24
Uniform Delay, d1			5.8	2.8		10.7
Progression Factor			1.00	1.00		1.00
Incremental Delay, d2			0.6	0.6		0.9
Delay (s)			6.4	3.5		11.6
Level of Service			A	A		B
Approach Delay (s)	0.0		5.9		11.6	
Approach LOS	A		A		B	
<b>Intersection Summary</b>						
HCM Average Control Delay			6.2		HCM Level of Service	A
HCM Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			74.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Existing Conditions  
3: K Street EB & Washington Circle

PM Peak Hour  
5/20/2006



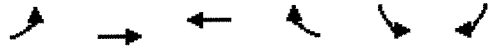
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗↘			↑↑↑	
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	248	0	0	1946	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	270	0	0	2115	0
Pedestrians	43			113		
Lane Width (ft)	12.0			0.0		
Walking Speed (ft/s)	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	2158	861	2158			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2158	861	2158			
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	6	100			
cM capacity (veh/h)	39	288	236			

Direction, Lane #	EB 1	EB 2	SB 1	SB 2	SB 3
Volume Total	135	135	705	705	705
Volume Left	0	0	0	0	0
Volume Right	135	135	0	0	0
cSH	288	288	1700	1700	1700
Volume to Capacity	0.47	0.47	0.41	0.41	0.41
Queue Length 95th (ft)	59	59	0	0	0
Control Delay (s)	28.0	28.0	0.0	0.0	0.0
Lane LOS	D	D			
Approach Delay (s)	28.0		0.0		
Approach LOS	D				

Intersection Summary		
Average Delay	3.2	
Intersection Capacity Utilization	64.4%	ICU Level of Service C
Analysis Period (min)	15	

Existing Conditions  
5: Washington Circle & 23rd Street

PM Peak Hour  
5/20/2006



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
Frbp, 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	1171	0	0	1342
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1273	0	0	1459
RTOR Reduction (vph)	0	0	0	0	0	68
Lane Group Flow (vph)	0	0	1273	0	0	1391
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			c0.22			
v/s Ratio Perm						c0.43
v/c Ratio			0.22			0.54
Uniform Delay, d1			0.0			3.5
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.8
Delay (s)			0.1			4.3
Level of Service			A			A
Approach Delay (s)		0.0	0.1		4.3	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
6: Washington Circle & New Hampshire Avenue

PM Peak Hour  
5/20/2006



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		
Frbp, 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)			4248	1226		
Flt Permitted			1.00	1.00		
Satd. Flow (perm)			4248	1226		
Volume (vph)	0	0	1171	453	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1273	492	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1364	401	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)			3271	981		
v/s Ratio Prot			c0.32	c0.33		
v/s Ratio Perm						
v/c Ratio			0.42	0.41		
Uniform Delay, d1			3.9	3.0		
Progression Factor			1.20	0.86		
Incremental Delay, d2			0.4	1.3		
Delay (s)			5.1	3.8		
Level of Service			A	A		
Approach Delay (s)		0.0	4.8		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Existing Conditions  
7: K Street WB & Washington Circle

PM Peak Hour  
5/20/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		TT	TTT			
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	371	1253	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	403	1362	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	1501	480			1430	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1501	480			1430	
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	20			100	
cM capacity (veh/h)	100	501			445	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4
Volume Total	202	202	340	340	340	340
Volume Left	0	0	0	0	0	0
Volume Right	202	202	0	0	0	0
cSH	501	501	1700	1700	1700	1700
Volume to Capacity	0.40	0.40	0.20	0.20	0.20	0.20
Queue Length 95th (ft)	48	48	0	0	0	0
Control Delay (s)	16.9	16.9	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	16.9		0.0			
Approach LOS	C					

Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			46.3%	ICU Level of Service		A
Analysis Period (min)			15			

Existing Conditions  
9: I Street & 23rd Street

PM Peak Hour  
5/20/2006



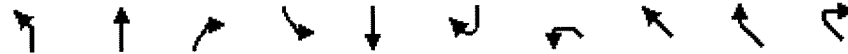
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↓↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frbp, ped/bikes	0.96		0.96			1.00
Flpb, ped/bikes	0.56		1.00			0.99
Frt	0.99		0.98			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	746		4317			2974
Flt Permitted	0.96		1.00			0.88
Satd. Flow (perm)	746		4317			2630
Volume (vph)	267	24	470	66	55	1030
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	26	511	72	60	1120
RTOR Reduction (vph)	3	0	18	0	0	0
Lane Group Flow (vph)	313	0	565	0	0	1180
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)	209		2763			1683
v/s Ratio Prot			0.13			
v/s Ratio Perm	c0.42					c0.45
v/c Ratio	1.50		0.20			0.70
Uniform Delay, d1	36.0		7.5			11.8
Progression Factor	1.00		1.25			1.03
Incremental Delay, d2	247.6		0.2			2.3
Delay (s)	283.6		9.5			14.4
Level of Service	F		A			B
Approach Delay (s)	283.6		9.5			14.4
Approach LOS	F		A			B

Intersection Summary

HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
10: F Street & 23rd Street

PM Peak Hour  
5/20/2006



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		0.99			0.99			1.00		1.00
Frt		0.98			1.00			0.91		0.85
Flt Protected		0.99			1.00			0.99		1.00
Satd. Flow (prot)		2944			4533			1310		1425
Flt Permitted		0.70			0.90			0.99		1.00
Satd. Flow (perm)		2078			4081			1310		1425
Volume (vph)	46	344	56	47	1331	4	9	19	44	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)	50	374	61	51	1447	4	10	21	48	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	485	0	0	1502	0	0	79	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)		1205			2367			445		0
v/s Ratio Prot										
v/s Ratio Perm		0.23			0.37			0.06		
v/c Ratio		0.40			0.63			0.18		0.00
Uniform Delay, d1		11.5			14.0			23.2		50.0
Progression Factor		0.32			0.40			1.00		1.00
Incremental Delay, d2		1.0			0.9			0.9		0.0
Delay (s)		4.6			6.5			24.1		50.0
Level of Service		A			A			C		D
Approach Delay (s)		4.6			6.5			26.7		
Approach LOS		A			A			C		

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

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

PM Peak Hour  
5/20/2006



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	
Frbp, ped/bikes		0.86						0.96			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.90						0.98			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		1298						3012			4357	
Flt Permitted		1.00						1.00			0.88	
Satd. Flow (perm)		1298						3012			3856	
Volume (vph)	32	60	237	0	0	0	0	414	48	60	1280	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)	35	65	258	0	0	0	0	450	52	65	1391	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	357	0	0	0	0	0	493	0	0	1456	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						1747			2236	
v/s Ratio Prot		c0.27						0.16				
v/s Ratio Perm											c0.38	
v/c Ratio		0.81						0.28			0.65	
Uniform Delay, d1		30.0						10.5			14.2	
Progression Factor		1.00						1.00			0.06	
Incremental Delay, d2		14.7						0.4			1.2	
Delay (s)		44.8						11.0			2.1	
Level of Service		D						B			A	
Approach Delay (s)		44.8			0.0			11.0			2.1	
Approach LOS		D			A			B			A	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
12: K Street WB & 22nd Street

PM Peak Hour  
5/20/2006



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				
Frbp, 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			4342				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					2824			4342				
Volume (vph)	0	0	0	0	240	157	131	327	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	261	171	142	355	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	110	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	322	0	0	473	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			3083				
v/s Ratio Prot					0.11							
v/s Ratio Perm								0.11				
v/c Ratio					0.63			0.15				
Uniform Delay, d1					38.0			4.7				
Progression Factor					1.00			0.01				
Incremental Delay, d2					5.9			0.1				
Delay (s)					43.9			0.1				
Level of Service					D			A				
Approach Delay (s)		0.0			43.9			0.1			0.0	
Approach LOS		A			D			A			A	

Intersection Summary

HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
13: K Street EB & 22nd Street

PM Peak Hour  
5/20/2006



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				
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)		3173						4561				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		3173						4561				
Volume (vph)	14	291	0	0	0	0	0	444	8	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)	15	316	0	0	0	0	0	483	9	0	0	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	327	0	0	0	0	0	490	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						2326				
v/s Ratio Prot								c0.11				
v/s Ratio Perm		0.10										
v/c Ratio		0.25						0.21				
Uniform Delay, d1		19.4						13.5				
Progression Factor		0.45						0.41				
Incremental Delay, d2		0.4						0.2				
Delay (s)		9.2						5.6				
Level of Service		A						A				
Approach Delay (s)		9.2			0.0			5.6			0.0	
Approach LOS		A			A			A			A	

Intersection Summary

HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
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			

Existing Conditions  
 14: Pennsylvania Avenue & 22nd Street

PM Peak Hour  
 5/20/2006



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	
Frbp, 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			4350	
Flt Permitted		1.00	1.00			0.99	
Satd. Flow (perm)		4575	3124			4350	
Volume (vph)	2	623	681	213	58	237	67
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	677	740	232	63	258	73
RTOR Reduction (vph)	0	0	43	0	0	37	0
Lane Group Flow (vph)	0	679	929	0	0	357	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			1610	
v/s Ratio Prot		c0.06	c0.30				
v/s Ratio Perm		0.09				0.08	
v/c Ratio		0.27	1.06			0.22	
Uniform Delay, d1		13.9	36.0			21.6	
Progression Factor		0.79	1.00			1.00	
Incremental Delay, d2		0.3	48.1			0.3	
Delay (s)		11.3	84.1			21.9	
Level of Service		B	F			C	
Approach Delay (s)		11.3				21.9	
Approach LOS		B				C	

Intersection Summary			
HCM Average Control Delay	48.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
15: I Street & 22nd Street

PM Peak Hour  
5/20/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↔				
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	43	68	0	0	223	92	48	222	70	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)	47	74	0	0	242	100	52	241	76	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total (vph)	121	342	173	197
Volume Left (vph)	47	0	52	0
Volume Right (vph)	0	100	0	76
Hadj (s)	0.11	-0.14	0.18	-0.24
Departure Headway (s)	5.4	4.9	5.9	5.4
Degree Utilization, x	0.18	0.46	0.28	0.30
Capacity (veh/h)	617	705	585	628
Control Delay (s)	9.6	12.0	9.9	9.5
Approach Delay (s)	9.6	12.0	9.7	
Approach LOS	A	B	A	

Intersection Summary			
Delay		10.7	
HCM Level of Service		B	
Intersection Capacity Utilization	60.7%		ICU Level of Service B
Analysis Period (min)		15	



Existing Conditions  
17: K Street WB & 24th Street

PM Peak Hour  
5/20/2006



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	
Frbp, 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			3145			1515	
Flt Permitted					1.00			0.57			1.00	
Satd. Flow (perm)					2993			1810			1515	
Volume (vph)	0	0	0	0	834	16	57	213	0	0	301	310
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	907	17	62	232	0	0	327	337
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	0	0	0	923	0	0	294	0	0	627	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			688			576	
v/s Ratio Prot					c0.31						c0.41	
v/s Ratio Perm								0.16				
v/c Ratio					0.57			0.94dl			1.09	
Uniform Delay, d1					15.3			22.9			31.0	
Progression Factor					0.31			0.69			0.40	
Incremental Delay, d2					1.2			1.9			42.9	
Delay (s)					6.0			17.7			55.4	
Level of Service					A			B			E	
Approach Delay (s)		0.0			6.0			17.7			55.4	
Approach LOS		A			A			B			E	

Intersection Summary

HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	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

Existing Conditions  
18: K Street EB & 24th Street

PM Peak Hour  
5/20/2006



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	
Frbp, 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)		2948						1626			1673	
Flt Permitted		0.98						1.00			0.99	
Satd. Flow (perm)		2948						1626			1660	
Volume (vph)	95	203	4	0	0	0	0	175	35	10	301	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)	103	221	4	0	0	0	0	190	38	11	327	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	327	0	0	0	0	0	221	0	0	338	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)		1445						553			648	
v/s Ratio Prot								0.14			c0.03	
v/s Ratio Perm		0.11									c0.18	
v/c Ratio		0.23						0.40			0.52	
Uniform Delay, d1		14.6						25.2			23.4	
Progression Factor		1.00						1.00			0.11	
Incremental Delay, d2		0.4						2.1			0.3	
Delay (s)		15.0						27.3			3.0	
Level of Service		B						C			A	
Approach Delay (s)		15.0			0.0			27.3			3.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
19: H Street & 23rd Street

PM Peak Hour  
5/20/2006

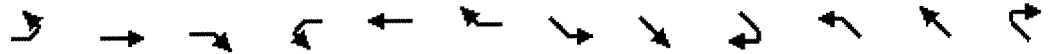


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕↕			↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.91			0.95	
Frbp, ped/bikes		0.96			0.97			0.98			0.99	
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)		1450			1518			4419			3107	
Flt Permitted		0.97			0.97			0.90			0.94	
Satd. Flow (perm)		1408			1483			3988			2921	
Volume (vph)	12	29	99	18	118	105	10	373	36	25	1216	74
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)	13	32	108	20	128	114	11	405	39	27	1322	80
RTOR Reduction (vph)	0	15	0	0	28	0	0	11	0	0	4	0
Lane Group Flow (vph)	0	138	0	0	234	0	0	444	0	0	1425	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)		380			400			2592			1899	
v/s Ratio Prot												
v/s Ratio Perm		0.10			0.16			0.11			0.49	
v/c Ratio		0.36			0.59			0.17			0.75	
Uniform Delay, d1		29.5			31.6			6.9			12.0	
Progression Factor		1.00			1.00			0.85			0.42	
Incremental Delay, d2		2.7			6.2			0.1			1.4	
Delay (s)		32.2			37.8			6.0			6.4	
Level of Service		C			D			A			A	
Approach Delay (s)		32.2			37.8			6.0			6.4	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
20: K Street WB & Pennsylvania Avenue

PM Peak Hour  
5/20/2006



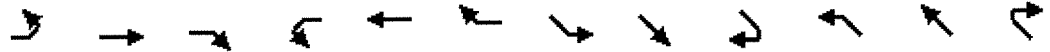
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					↑↑			↑↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0				
Lane Util. Factor					0.95			0.91				
Frbp, ped/bikes					1.00			1.00				
Flpb, ped/bikes					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	850	0	0	894	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	924	0	0	972	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	924	0	0	972	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					c0.29			c0.21				
v/s Ratio Perm												
v/c Ratio					0.56			0.53				
Uniform Delay, d1					16.2			22.9				
Progression Factor					0.92			0.07				
Incremental Delay, d2					1.3			0.1				
Delay (s)					16.2			1.7				
Level of Service					B			A				
Approach Delay (s)		0.0			16.2			1.7			0.0	
Approach LOS		A			B			A			A	

Intersection Summary

HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Existing Conditions  
25: K Street EB & Pennsylvania Avenue

PM Peak Hour  
5/20/2006



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	305	0	0	0	0	0	0	0	0	739	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	332	0	0	0	0	0	0	0	0	803	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	332	0	0	0	0	0	0	0	0	803	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		c0.10									c0.18	
v/s Ratio Perm												
v/c Ratio		0.31									0.30	
Uniform Delay, d1		24.3									10.7	
Progression Factor		0.97									0.09	
Incremental Delay, d2		0.7									0.1	
Delay (s)		24.3									1.1	
Level of Service		C									A	
Approach Delay (s)		24.3			0.0			0.0			1.1	
Approach LOS		C			A			A			A	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			