

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	
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)					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 Volume to Capacity ratio		0.27										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		36.7%										
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	
Frpb, 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				
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	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					HCM Level of Service		A			
HCM Volume to Capacity ratio		0.39										
Actuated Cycle Length (s)		100.0					Sum of lost time (s)		8.0			
Intersection Capacity Utilization		39.2%					ICU Level of Service		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				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)	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		c0.53				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		↑↑			↑↑↑	
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		
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)			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						
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			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰		↑↑↑			↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		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

										
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

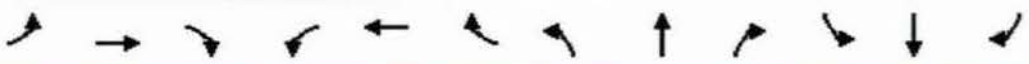
PM Peak Hour
5/20/06

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						HCM Level of Service		B		
HCM Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		100.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		123.0%						ICU Level of Service		H		
Analysis Period (min)		15										

c Critical Lane Group

Background Conditions
12: K Street WB & 22nd Street

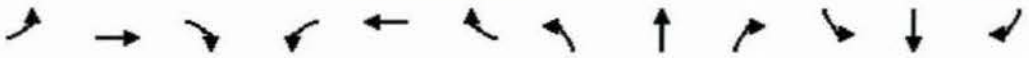
PM Peak Hour
5/20/06

												
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				
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			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								0.12				
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 Volume to Capacity ratio		0.25										
Actuated Cycle Length (s)		100.0							12.0			
Intersection Capacity Utilization		33.3%										
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	
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			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			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		96.5%			ICU Level of Service			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	
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	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												

Appendix F

Total Future Intersection Levels of Service

Total Future Conditions
1: Washington Circle & 23rd Street

AM Peak Hour
5/21/06

	→	↘	↙	←	↖	↗
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	0.99	0.85				0.85
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	4203	1029				3249
Flt Permitted	1.00	1.00				1.00
Satd. Flow (perm)	4203	1029				3249
Volume (vph)	1925	699	0	0	0	639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2092	760	0	0	0	695
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2304	548	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)	4203	1029				2404
v/s Ratio Prot	c0.55					
v/s Ratio Perm		0.53				0.21
v/c Ratio	0.55	0.53				0.29
Uniform Delay, d1	0.0	0.0				4.3
Progression Factor	1.00	1.00				1.64
Incremental Delay, d2	0.3	1.1				0.3
Delay (s)	0.3	1.1				7.3
Level of Service	A	A				A
Approach Delay (s)	0.4			0.0	7.3	
Approach LOS	A			A	A	
Intersection Summary						
HCM Average Control Delay		1.8		HCM Level of Service		A
HCM Volume to Capacity ratio		0.55				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		0.0
Intersection Capacity Utilization		71.4%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

Total Future Conditions
2: Washington Circle & New Hampshire Avenue

AM Peak Hour
5/21/06



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	2409	117	0	216
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2618	127	0	235
RTOR Reduction (vph)	0	0	123	27	0	0
Lane Group Flow (vph)	0	0	2496	100	0	235
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			c0.56	0.07		
v/s Ratio Perm						c0.21
v/c Ratio			0.85	0.09		0.43
Uniform Delay, d1			13.8	2.4		17.0
Progression Factor			1.00	1.00		1.00
Incremental Delay, d2			3.5	0.2		2.5
Delay (s)			17.2	2.5		19.5
Level of Service			B	A		B
Approach Delay (s)	0.0		16.6		19.5	
Approach LOS	A		B		B	
Intersection Summary						
HCM Average Control Delay			16.8		HCM Level of Service	B
HCM Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			87.6%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

Total Future Conditions
3: K Street EB & Washington Circle

AM Peak Hour
5/21/06

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		TT			TTT	
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	730	0	0	1796	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	793	0	0	1952	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	2064	994	2064			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2064	994	2064			
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)	43	221	242			
Direction, Lane #	EB 1	EB 2	SB 1	SB 2	SB 3	
Volume Total	397	397	651	651	651	
Volume Left	0	0	0	0	0	
Volume Right	397	397	0	0	0	
cSH	221	221	1700	1700	1700	
Volume to Capacity	1.79	1.79	0.38	0.38	0.38	
Queue Length 95th (ft)	685	685	0	0	0	
Control Delay (s)	412.4	412.4	0.0	0.0	0.0	
Lane LOS	F	F				
Approach Delay (s)	412.4		0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			119.2			
Intersection Capacity Utilization			81.7%	ICU Level of Service		D
Analysis Period (min)			15			

Total Future Conditions
5: Washington Circle & 23rd Street

AM Peak Hour
5/21/06



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	598	0	0	774
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	650	0	0	841
RTOR Reduction (vph)	0	0	0	0	0	191
Lane Group Flow (vph)	0	0	650	0	0	650
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						c0.20
v/c Ratio			0.11			0.27
Uniform Delay, d1			0.0			3.9
Progression Factor			1.00			1.00
Incremental Delay, d2			0.0			0.3
Delay (s)			0.0			4.2
Level of Service			A			A
Approach Delay (s)		0.0	0.0		4.2	
Approach LOS		A	A		A	
Intersection Summary						
HCM Average Control Delay			2.4		HCM Level of Service	A
HCM Volume to Capacity ratio			0.24			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			59.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Total Future Conditions
6: Washington Circle & New Hampshire Avenue

AM Peak Hour
5/21/06



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)			3772	1226		
Flt Permitted			1.00	1.00		
Satd. Flow (perm)			3772	1226		
Volume (vph)	0	0	598	1038	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	650	1128	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1214	564	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)			2678	920		
v/s Ratio Prot			c0.32	c0.46		
v/s Ratio Perm						
v/c Ratio			0.45	0.61		
Uniform Delay, d1			6.2	5.8		
Progression Factor			1.33	0.56		
Incremental Delay, d2			0.5	3.0		
Delay (s)			8.8	6.2		
Level of Service			A	A		
Approach Delay (s)		0.0	8.0		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM Average Control Delay			8.0		HCM Level of Service	A
HCM Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			59.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Total Future Conditions
7: K Street WB & Washington Circle

AM Peak Hour
5/21/06

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↰↰	↑↑↑			
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	310	1325	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	337	1440	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	1594	534			1563	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1594	534			1563	
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	23			100	
cM capacity (veh/h)	85	440			376	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4
Volume Total	168	168	360	360	360	360
Volume Left	0	0	0	0	0	0
Volume Right	168	168	0	0	0	0
cSH	440	440	1700	1700	1700	1700
Volume to Capacity	0.38	0.38	0.21	0.21	0.21	0.21
Queue Length 95th (ft)	44	44	0	0	0	0
Control Delay (s)	18.2	18.2	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	18.2		0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			44.1%		ICU Level of Service	A
Analysis Period (min)			15			

Total Future Conditions
9: I Street & 23rd Street

AM Peak Hour
5/21/06

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰		↑↑↑			↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frpb, ped/bikes	0.87		0.93			1.00
Flpb, ped/bikes	0.62		1.00			0.98
Frt	0.97		0.95			1.00
Flt Protected	0.96		1.00			0.98
Satd. Flow (prot)	744		4077			2903
Flt Permitted	0.96		1.00			0.52
Satd. Flow (perm)	744		4077			1544
Volume (vph)	68	21	681	300	235	417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	23	740	326	255	453
RTOR Reduction (vph)	12	0	79	0	0	0
Lane Group Flow (vph)	85	0	987	0	0	708
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		2609			988
v/s Ratio Prot			0.24			
v/s Ratio Perm	c0.11					c0.46
v/c Ratio	0.41		0.38			1.21dl
Uniform Delay, d1	29.3		8.5			12.0
Progression Factor	1.00		0.77			0.94
Incremental Delay, d2	5.9		0.4			3.8
Delay (s)	35.2		7.0			15.1
Level of Service	D		A			B
Approach Delay (s)	35.2		7.0			15.1
Approach LOS	D		A			B
Intersection Summary						
HCM Average Control Delay			11.5		HCM Level of Service	B
HCM Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			105.4%		ICU Level of Service	G
Analysis Period (min)			15			
dl Defacto Left Lane. Recode with 1 though lane as a left lane.						
c Critical Lane Group						

Total Future Conditions
10: F Street & 23rd Street

AM Peak Hour
5/21/06

										
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)		3011			3122			1393		908
Flt Permitted		0.87			0.75			0.99		1.00
Satd. Flow (perm)		2614			2351			1393		908
Volume (vph)	79	1132	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	1230	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	1468	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)		1516			1364			474		309
v/s Ratio Prot										
v/s Ratio Perm		0.56			0.24			0.07		0.00
v/c Ratio		0.97			0.41			0.19		0.00
Uniform Delay, d1		20.1			11.6			23.3		21.8
Progression Factor		0.23			0.62			1.00		1.00
Incremental Delay, d2		12.6			0.9			0.9		0.0
Delay (s)		17.2			8.0			24.2		21.8
Level of Service		B			A			C		C
Approach Delay (s)		17.2			8.0			24.1		
Approach LOS		B			A			C		
Intersection Summary										
HCM Average Control Delay		15.1			HCM Level of Service			B		
HCM Volume to Capacity ratio		0.68								
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										

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

AM Peak Hour
5/21/06

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		1.00	
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		2973	
Flt Permitted		0.99						1.00	1.00		0.67	
Satd. Flow (perm)		1386						3185	796		2005	
Volume (vph)	30	53	99	0	0	0	0	1296	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	1409	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	1409	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		1163	
v/s Ratio Prot		c0.12						c0.44				
v/s Ratio Perm									0.03		0.27	
v/c Ratio		0.35						0.76	0.05		0.46	
Uniform Delay, d1		24.7						15.8	9.1		12.0	
Progression Factor		1.00						1.00	1.00		0.17	
Incremental Delay, d2		2.0						3.0	0.2		1.2	
Delay (s)		26.8						18.9	9.3		3.2	
Level of Service		C						B	A		A	
Approach Delay (s)		26.8			0.0			18.6			3.2	
Approach LOS		C			A			B			A	
Intersection Summary												
HCM Average Control Delay		15.6						HCM Level of Service		B		
HCM Volume to Capacity ratio		0.61										
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

Total Future Conditions
12: K Street WB & 22nd Street

AM Peak Hour
5/21/06

												
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				
Frbp, 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			4421				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					2820			4421				
Volume (vph)	0	0	0	0	141	96	170	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	185	675	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	82	0	0	49	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	175	0	0	811	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			3006				
v/s Ratio Prot					c0.06							
v/s Ratio Perm								0.18				
v/c Ratio					0.30			0.27				
Uniform Delay, d1					33.3			6.3				
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			8.1				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)		4.0			
Intersection Capacity Utilization			33.8%				ICU Level of Service		A			
Analysis Period (min)			15									
c Critical Lane Group												

Total Future Conditions
13: K Street EB & 22nd Street

AM Peak Hour
5/21/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4↑						↑↑↑				
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						4563				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		3179						4563				
Volume (vph)	11	433	0	0	0	0	0	780	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	848	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	859	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								c0.19				
v/s Ratio Perm		0.15										
v/c Ratio		0.29						0.47				
Uniform Delay, d1		13.6						22.2				
Progression Factor		0.14						0.22				
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 Level of Service		A		
HCM Volume to Capacity ratio		0.37										
Actuated Cycle Length (s)		100.0						Sum of lost time (s)		12.0		
Intersection Capacity Utilization		40.8%						ICU Level of Service		A		
Analysis Period (min)		15										
c Critical Lane Group												

Total Future Conditions
14: Pennsylvania Avenue & 22nd Street

AM Peak Hour
5/21/06



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			1.00	
Satd. Flow (prot)		4576	3124			4407	
Flt Permitted		1.00	1.00			1.00	
Satd. Flow (perm)		4576	3124			4407	
Volume (vph)	2	1154	291	188	69	601	134
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	75	653	146
RTOR Reduction (vph)	0	0	116	0	0	30	0
Lane Group Flow (vph)	0	1256	404	0	0	844	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			1146	
v/s Ratio Prot		c0.12	0.13				
v/s Ratio Perm		0.15				0.19	
v/c Ratio		0.42	0.40			0.74	
Uniform Delay, d1		9.7	26.6			33.9	
Progression Factor		0.18	1.00			1.00	
Incremental Delay, d2		0.4	1.2			4.2	
Delay (s)		2.1	27.8			38.1	
Level of Service		A	C			D	
Approach Delay (s)		2.1				38.1	
Approach LOS		A				D	
Intersection Summary							
HCM Average Control Delay			19.0		HCM Level of Service		B
HCM Volume to Capacity ratio			0.51				
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

Total Future Conditions
15: I Street & 22nd Street

AM Peak Hour
5/21/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	446	142	0	0	33	30	31	501	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)	485	154	0	0	36	33	34	545	130	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2								
Volume Total (vph)	639	68	306	403								
Volume Left (vph)	485	0	34	0								
Volume Right (vph)	0	33	0	130								
Hadj (s)	0.19	-0.25	0.09	-0.19								
Departure Headway (s)	5.9	6.4	6.6	6.3								
Degree Utilization, x	1.05	0.12	0.56	0.71								
Capacity (veh/h)	599	540	541	558								
Control Delay (s)	73.6	10.3	16.5	22.0								
Approach Delay (s)	73.6	10.3	19.6									
Approach LOS	F	B	C									
Intersection Summary												
Delay			43.5									
HCM Level of Service			E									
Intersection Capacity Utilization			73.9%		ICU Level of Service					D		
Analysis Period (min)			15									