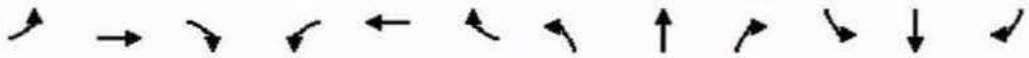


Existing Conditions
17: K Street WB & 24th Street

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	
Frpb, ped/bikes					1.00			1.00			0.98	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.99			1.00			0.97	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					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	
Frb, 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			4.0	
Lane Util. Factor		1.00			1.00			0.91			0.95	
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	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3185									4577	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3185									4577	
Volume (vph)	0	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
Frpb, ped/bikes	0.96	0.89				1.00
Flpb, ped/bikes	1.00	1.00				1.00
Frt	0.95	0.85				0.85
Flt Protected	1.00	1.00				1.00
Satd. Flow (prot)	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		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	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	
Intersection Summary						
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		↗↘	↑↑↑			
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			

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	0.56		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	9	
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				
Frb, 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					c0.11							
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								0.11				
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	
Frpb, ped/bikes		1.00	1.00			0.99	
Flpb, ped/bikes		1.00	1.00			1.00	
Frt		1.00	0.85			0.97	
Flt Protected		1.00	1.00			0.99	
Satd. Flow (prot)		4575	3124			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

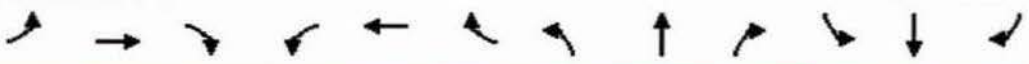
Existing Conditions
15: I Street & 22nd Street

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												

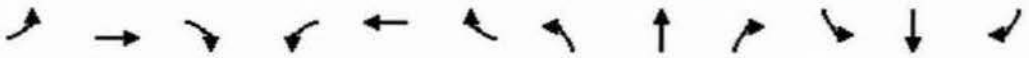
Existing Conditions
18: K Street EB & 24th Street

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	
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)		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												

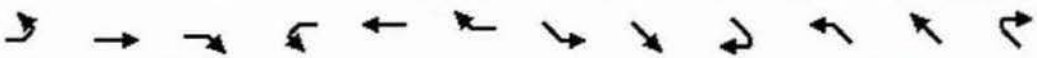
Existing Conditions
19: H Street & 23rd Street

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				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					1.00			1.00				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3185			4577				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3185			4577				
Volume (vph)	0	0	0	0	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	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3185									4577	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3185									4577	
Volume (vph)	0	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												

Appendix D

Pipeline Trip Generation Summary

Table D-1
Square 54
Trips Generated by Other Approved Developments ¹

Background Project	Trip Type/ Land Use	Development Program ⁴	Units	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
IMF 2 Headquarters	Office	649,350	S.F.	737	101	838	137	669	806
	Non-Auto Reduction ²	57%		<u>421</u>	<u>57</u>	<u>478</u>	<u>78</u>	<u>381</u>	<u>459</u>
	New Office Trips			316	44	360	59	288	347
	Existing PEPCO Building ²	420,000	S.F.	<u>202</u>	<u>29</u>	<u>231</u>	<u>38</u>	<u>181</u>	<u>219</u>
	Net New Office Trips			114	15	129	21	107	128
Columbia House Apartments I	Residential	142	D.U.	15	58	73	62	34	96
	Non-Auto Reduction ³	50%		<u>7</u>	<u>30</u>	<u>37</u>	<u>31</u>	<u>17</u>	<u>48</u>
	Net New Residential Trips			8	28	36	31	17	48
Columbia House Apartments II	Residential	213	D.U.	22	86	108	88	47	135
	Non-Auto Reduction ³	50%		<u>11</u>	<u>43</u>	<u>54</u>	<u>44</u>	<u>24</u>	<u>68</u>
	Net New Residential Trips			11	43	54	44	23	68
2425 L Street, NW ⁴	Luxury Condominiums	200	D.U.	14	47	61	37	23	60
	Retail	28,000	S.F.	<u>23</u>	<u>15</u>	<u>38</u>	<u>65</u>	<u>70</u>	<u>135</u>
				37	62	99	102	93	195
Total Other Approved Developments Trips				170	148	318	198	240	439

Notes:

- ¹ Based on ITE, Trip Generation, 7th Edition.
- ² The PEPCO trip generation and non-auto reduction percentage for this development was obtained from "International Monetary Fund Headquarters 2 - Planned Unit Development Application"; dated May 11, 2001; prepared by O.R. George & Associates, Inc.
- ³ The non-auto reduction percentages were calculated based on information provided in the Developer Related Ridership Survey II, published by the Washington Metropolitan Area Transit Authority.
- ⁴ Information taken from the Wells & Associates Traffic Impact Study, "2425 L Street", dated May 1, 2003. Includes residential condo non-auto mode split of 45% and retail non-auto mode split of 50%.

Table D-2

Square 54

United States Institute of Peace Site Trip Generation

Use	Amount	Unit	Rate	AM Peak Hour			PM Peak Hour			
				In	Out	Total	Rate	In	Out	Total
<u>Existing Facility Location - 64 Employees</u>										
United State Institute of Peace ^{1,2}	64	persons	0.172	11	-	11	0.141	-	9	9
Total Site Generated Trips				11			- 9 9			
<u>Proposed Facility Location - 64 Employees</u>										
United State Institute of Peace ^{1,2}	64	persons	0.234	15	-	15	0.203	-	13	13
Total Forecasted Site Generated Trips				15			- 13 13			
<u>Proposed Facility Location - 259 Employees</u>										
United State Institute of Peace ^{2,3,4}	259	persons	0.234	61	-	61	0.203	-	53	53
Total New Forecasted Site Generated Trips ⁵				61 9 70			12 53 65			

Notes:

¹ Trip Generation rate based on stated arrivals/departures times from the Employee Survey Response of entire Institute of Peace staff (64 persons).

² Peak Hour of adjacent street is approximately from 8:00 - 9:00 AM and 5:00 - 6:00 PM.

³ Trip Generation "rate" calculated from Employee Survey Response incorporated to estimate trips for 280 Employees.

⁴ Calculated loaded rate includes mode split.

⁵ To account for AM outbound trips and PM inbound trips; directional distribution from the Institute of Transportation Engineers (ITE)

Lane Use Code 710 (General Office) was incorporated: AM Peak: 88% Inbound, 12% Outbound

PM Peak: 17% Inbound, 83% Outbound

Table D-3

Square 54

All-State Hotel Site Trip Generation Summary¹

Land Use	ITE Code	Size	Units	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
Hotel	310	147 Rooms							
Total				40	26	66	46	41	87
Internal Trips				-	-	-	-	-	-
External Trips (Total - Internal)				40	26	66	46	41	87
Non-auto Trips (25% reduction)				10	7	17	12	10	22
External Vehicle Trips (External - Transit)				30	19	49	34	31	65

Notes:

¹ Trips generated using Institute of Transportation Engineers (ITE) Trip Generation, Seventh Edition.

Appendix E

Background Future Intersection Levels of Service

Background Conditions
1: Washington Circle & 23rd Street

AM Peak Hour
5/20/06

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

Background Conditions
2: Washington Circle & New Hampshire Avenue

AM Peak Hour
5/20/06



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

c Critical Lane Group

Background Conditions
3: K Street EB & Washington Circle

AM Peak Hour
5/20/06

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗↘			↑↑↑	
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	693	0	0	1685	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	753	0	0	1832	0
Pedestrians	112			231		
Lane Width (ft)	12.0			0.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	9			0		
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				141		
pX, platoon unblocked						
vC, conflicting volume	1944	954	1944			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1944	954	1944			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	52	235	270			
Direction, Lane #	EB 1	EB 2	SB 1	SB 2	SB 3	
Volume Total	377	377	611	611	611	
Volume Left	0	0	0	0	0	
Volume Right	377	377	0	0	0	
cSH	235	235	1700	1700	1700	
Volume to Capacity	1.60	1.60	0.36	0.36	0.36	
Queue Length 95th (ft)	591	591	0	0	0	
Control Delay (s)	327.0	327.0	0.0	0.0	0.0	
Lane LOS	F	F				
Approach Delay (s)	327.0		0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			95.3			
Intersection Capacity Utilization			77.9%	ICU Level of Service		D
Analysis Period (min)			15			

Background Conditions
5: Washington Circle & 23rd Street

AM Peak Hour
5/20/06



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑↑			↑↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0			4.0
Lane Util. Factor			0.86			0.76
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	563	0	0	729
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	612	0	0	792
RTOR Reduction (vph)	0	0	0	0	0	198
Lane Group Flow (vph)	0	0	612	0	0	594
Confl. Peds. (#/hr)	131			131	151	3
Turn Type					custom	
Protected Phases			10 11			
Permitted Phases						1 3
Actuated Green, G (s)			100.0			75.0
Effective Green, g (s)			100.0			75.0
Actuated g/C Ratio			1.00			0.75
Clearance Time (s)						
Lane Grp Cap (vph)			5767			2405
v/s Ratio Prot			c0.11			
v/s Ratio Perm						c0.19
v/c Ratio			0.11			0.25
Uniform Delay, d1			0.0			3.8
Progression Factor			1.00			1.00
Incremental Delay, d2			0.0			0.2
Delay (s)			0.0			4.1
Level of Service			A			A
Approach Delay (s)		0.0	0.0		4.1	
Approach LOS		A	A		A	
Intersection Summary						
HCM Average Control Delay			2.3		HCM Level of Service	A
HCM Volume to Capacity ratio			0.22			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Background Conditions
6: Washington Circle & New Hampshire Avenue

AM Peak Hour
5/20/06



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑↑	↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0		
Lane Util. Factor			0.86	0.86		
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)			3761	1226		
Flt Permitted			1.00	1.00		
Satd. Flow (perm)			3761	1226		
Volume (vph)	0	0	563	1013	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	612	1101	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1162	551	0	0
Confl. Peds. (#/hr)	297			297	2	326
Turn Type			custom			
Protected Phases			7 9	4 6		
Permitted Phases						
Actuated Green, G (s)			71.0	75.0		
Effective Green, g (s)			71.0	75.0		
Actuated g/C Ratio			0.71	0.75		
Clearance Time (s)						
Lane Grp Cap (vph)			2670	920		
v/s Ratio Prot			c0.31	c0.45		
v/s Ratio Perm						
v/c Ratio			0.44	0.60		
Uniform Delay, d1			6.1	5.7		
Progression Factor			1.33	0.55		
Incremental Delay, d2			0.5	2.8		
Delay (s)			8.6	5.9		
Level of Service			A	A		
Approach Delay (s)		0.0	7.7		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM Average Control Delay			7.7		HCM Level of Service	A
HCM Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	4.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Background Conditions
7: K Street WB & Washington Circle

AM Peak Hour
5/20/06

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗↘	↑↑↑↑			
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	269	1308	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	292	1422	0	0	0
Pedestrians	123		31			51
Lane Width (ft)	12.0		12.0			0.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	10		3			0
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	144					
pX, platoon unblocked						
vC, conflicting volume	1576	529			1545	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1576	529			1545	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	34			100	
cM capacity (veh/h)	88	443			382	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4
Volume Total	146	146	355	355	355	355
Volume Left	0	0	0	0	0	0
Volume Right	146	146	0	0	0	0
cSH	443	443	1700	1700	1700	1700
Volume to Capacity	0.33	0.33	0.21	0.21	0.21	0.21
Queue Length 95th (ft)	36	36	0	0	0	0
Control Delay (s)	17.1	17.1	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	17.1		0.0			
Approach LOS	C					
Intersection Summary						
Average Delay	2.9					
Intersection Capacity Utilization	42.2%					
ICU Level of Service	A					
Analysis Period (min)	15					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WT		NTT			STT
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.91			0.95
Frpb, ped/bikes	0.87		0.94			1.00
Flpb, ped/bikes	0.62		1.00			0.99
Frt	0.97		0.96			1.00
Flt Protected	0.96		1.00			0.99
Satd. Flow (prot)	744		4152			2960
Flt Permitted	0.96		1.00			0.70
Satd. Flow (perm)	744		4152			2095
Volume (vph)	68	21	681	238	70	417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	23	740	259	76	453
RTOR Reduction (vph)	12	0	63	0	0	0
Lane Group Flow (vph)	85	0	936	0	0	529
Confl. Peds. (#/hr)	1177	1700		253	253	
Parking (#/hr)	3	3			3	3
Turn Type				Perm		
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	27.0		63.0			63.0
Effective Green, g (s)	28.0		64.0			64.0
Actuated g/C Ratio	0.28		0.64			0.64
Clearance Time (s)	5.0		5.0			5.0
Lane Grp Cap (vph)	208		2657			1341
v/s Ratio Prot			0.23			
v/s Ratio Perm	c0.11					c0.25
v/c Ratio	0.41		0.35			0.39
Uniform Delay, d1	29.3		8.4			8.7
Progression Factor	1.00		0.75			1.04
Incremental Delay, d2	5.9		0.3			0.8
Delay (s)	35.2		6.6			9.7
Level of Service	D		A			A
Approach Delay (s)	35.2		6.6			9.7
Approach LOS	D		A			A
Intersection Summary						
HCM Average Control Delay			9.3		HCM Level of Service	A
HCM Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			100.1%		ICU Level of Service	G
Analysis Period (min)			15			

c Critical Lane Group

											
Movement	NBL	NBT	NBR	SBL2	SBT	SBR	NWL	NWT	NWR	NWR2	
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0			4.0			4.0		4.0	
Lane Util. Factor		0.95			0.95			0.95		0.95	
Frpb, ped/bikes		0.97			0.99			0.94		0.67	
Flpb, ped/bikes		0.99			1.00			1.00		1.00	
Frt		0.98			1.00			0.94		0.85	
Flt Protected		1.00			1.00			0.99		1.00	
Satd. Flow (prot)		3002			3121			1393		908	
Flt Permitted		0.86			0.77			0.99		1.00	
Satd. Flow (perm)		2596			2407			1393		908	
Volume (vph)	79	1069	140	30	474	15	17	32	35	2	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	86	1162	152	33	515	16	18	35	38	2	
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	1	
Lane Group Flow (vph)	0	1400	0	0	562	0	0	91	0	1	
Confl. Peds. (#/hr)	404		447	447		404			137	447	
Turn Type	Perm			Perm			Perm			Perm	
Protected Phases		6			2			4			
Permitted Phases	6			2			4			4	
Actuated Green, G (s)		56.0			52.0			32.0		32.0	
Effective Green, g (s)		58.0			58.0			34.0		34.0	
Actuated g/C Ratio		0.58			0.58			0.34		0.34	
Clearance Time (s)		6.0			10.0			6.0		6.0	
Lane Grp Cap (vph)		1506			1396			474		309	
v/s Ratio Prot											
v/s Ratio Perm		c0.54			0.23			0.07		0.00	
v/c Ratio		0.93			0.40			0.19		0.00	
Uniform Delay, d1		19.1			11.5			23.3		21.8	
Progression Factor		0.25			0.71			1.00		1.00	
Incremental Delay, d2		8.6			0.8			0.9		0.0	
Delay (s)		13.4			9.0			24.2		21.8	
Level of Service		B			A			C		C	
Approach Delay (s)		13.4			9.0			24.1			
Approach LOS		B			A			C			
Intersection Summary											
HCM Average Control Delay		12.7			HCM Level of Service				B		
HCM Volume to Capacity ratio		0.66									
Actuated Cycle Length (s)		100.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization		139.9%			ICU Level of Service				H		
Analysis Period (min)		15									
c Critical Lane Group											

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

AM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0	4.0		4.0	
Lane Util. Factor		1.00						0.95	1.00		0.95	
Frpb, ped/bikes		0.90						1.00	0.56		1.00	
Flpb, ped/bikes		1.00						1.00	1.00		0.99	
Frt		0.93						1.00	0.85		1.00	
Flt Protected		0.99						1.00	1.00		0.99	
Satd. Flow (prot)		1386						3185	796		2971	
Flt Permitted		0.99						1.00	1.00		0.69	
Satd. Flow (perm)		1386						3185	796		2049	
Volume (vph)	30	53	99	0	0	0	0	1233	35	50	441	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	58	108	0	0	0	0	1340	38	54	479	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	165	0	0	0	0	0	1340	22	0	533	0
Confl. Peds. (#/hr)			188	188			404		447	447		404
Parking (#/hr)											3	3
Turn Type	custom							Perm		Perm		
Protected Phases	4	4						2			6	
Permitted Phases	4								2	6		
Actuated Green, G (s)		32.0						52.0	52.0		56.0	
Effective Green, g (s)		34.0						58.0	58.0		58.0	
Actuated g/C Ratio		0.34						0.58	0.58		0.58	
Clearance Time (s)		6.0						10.0	10.0		6.0	
Lane Grp Cap (vph)		471						1847	462		1188	
v/s Ratio Prot		c0.12						c0.42				
v/s Ratio Perm									0.03		0.26	
v/c Ratio		0.35						0.73	0.05		0.45	
Uniform Delay, d1		24.7						15.2	9.1		11.9	
Progression Factor		1.00						1.00	1.00		0.14	
Incremental Delay, d2		2.0						2.5	0.2		1.1	
Delay (s)		26.8						17.8	9.3		2.8	
Level of Service		C						B	A		A	
Approach Delay (s)		26.8			0.0			17.5			2.8	
Approach LOS		C			A			B			A	
Intersection Summary												
HCM Average Control Delay		14.7									B	
HCM Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		123.3%									H	
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
12: K Street WB & 22nd Street

AM Peak Hour
5/20/06

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑			↑↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0				
Lane Util. Factor					0.95			0.91				
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			4453				
Flt Permitted					1.00			0.99				
Satd. Flow (perm)					2820			4453				
Volume (vph)	0	0	0	0	141	96	128	621	0	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	153	104	139	675	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	82	0	0	31	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	175	0	0	783	0	0	0	0
Confl. Peds. (#/hr)			50	50			248					248
Parking (#/hr)					3	3						
Turn Type							Perm					
Protected Phases					1 3			2				
Permitted Phases							2					
Actuated Green, G (s)					24.0			68.0				
Effective Green, g (s)					21.0			68.0				
Actuated g/C Ratio					0.21			0.68				
Clearance Time (s)								4.0				
Lane Grp Cap (vph)					592			3028				
v/s Ratio Prot					c0.06							
v/s Ratio Perm								0.18				
v/c Ratio					0.30			0.26				
Uniform Delay, d1					33.3			6.2				
Progression Factor					1.00			0.00				
Incremental Delay, d2					1.3			0.2				
Delay (s)					34.5			0.2				
Level of Service					C			A				
Approach Delay (s)		0.0			34.5			0.2			0.0	
Approach LOS		A			C			A			A	
Intersection Summary												
HCM Average Control Delay			8.4				HCM Level of Service		A			
HCM Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)		4.0			
Intersection Capacity Utilization			32.8%				ICU Level of Service		A			
Analysis Period (min)			15									

c Critical Lane Group

Background Conditions
13: K Street EB & 22nd Street

AM Peak Hour
5/20/06

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
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						4562				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		3179						4562				
Volume (vph)	11	433	0	0	0	0	0	739	12	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	471	0	0	0	0	0	803	13	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	481	0	0	0	0	0	814	0	0	0	0
Confl. Peds. (#/hr)	50		50	50		50	248		50	50		248
Turn Type	Perm											
Protected Phases		4 6						5				
Permitted Phases	4 6											
Actuated Green, G (s)		52.0						40.0				
Effective Green, g (s)		52.0						40.0				
Actuated g/C Ratio		0.52						0.40				
Clearance Time (s)								4.0				
Lane Grp Cap (vph)		1653						1825				
v/s Ratio Prot								c0.18				
v/s Ratio Perm		0.15										
v/c Ratio		0.29						0.45				
Uniform Delay, d1		13.6						21.9				
Progression Factor		0.14						0.23				
Incremental Delay, d2		0.4						0.6				
Delay (s)		2.3						5.6				
Level of Service		A						A				
Approach Delay (s)		2.3			0.0			5.6			0.0	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM Average Control Delay		4.4						HCM Level of Service		A		
HCM Volume to Capacity ratio		0.36										
Actuated Cycle Length (s)		100.0						Sum of lost time (s)		12.0		
Intersection Capacity Utilization		39.9%						ICU Level of Service		A		
Analysis Period (min)		15										
c Critical Lane Group												

Background Conditions
14: Pennsylvania Avenue & 22nd Street

AM Peak Hour
5/20/06



Movement	EBL	EBT	WBR	WBR2	NBL	NBT	NBR
Lane Configurations		↑↑↑	↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	
Lane Util. Factor		0.91	0.76			0.91	
Frpb, ped/bikes		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00			1.00	
Frt		1.00	0.85			0.98	
Flt Protected		1.00	1.00			1.00	
Satd. Flow (prot)		4576	3124			4450	
Flt Permitted		1.00	1.00			1.00	
Satd. Flow (perm)		4576	3124			4450	
Volume (vph)	2	1154	291	188	52	560	84
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1254	316	204	57	609	91
RTOR Reduction (vph)	0	0	116	0	0	18	0
Lane Group Flow (vph)	0	1256	404	0	0	739	0
Confl. Peds. (#/hr)	34		16	34	16		21
Parking (#/hr)			3	3			
Turn Type	custom		custom		Perm		
Protected Phases	9	7 9	7			8	
Permitted Phases	7				8		
Actuated Green, G (s)		64.0	32.0			24.0	
Effective Green, g (s)		62.0	32.0			26.0	
Actuated g/C Ratio		0.62	0.32			0.26	
Clearance Time (s)			4.0			6.0	
Lane Grp Cap (vph)		3020	1000			1157	
v/s Ratio Prot		0.12	0.13				
v/s Ratio Perm		0.15				0.17	
v/c Ratio		0.42	0.40			0.64	
Uniform Delay, d1		9.7	26.6			32.8	
Progression Factor		0.18	1.00			1.00	
Incremental Delay, d2		0.4	1.2			2.7	
Delay (s)		2.2	27.8			35.5	
Level of Service		A	C			D	
Approach Delay (s)		2.2				35.5	
Approach LOS		A				D	
Intersection Summary							
HCM Average Control Delay			17.4		HCM Level of Service		B
HCM Volume to Capacity ratio			0.48				
Actuated Cycle Length (s)			100.0		Sum of lost time (s)		8.0
Intersection Capacity Utilization			79.3%		ICU Level of Service		D
Analysis Period (min)			15				

c Critical Lane Group

Background Conditions
15: I Street & 22nd Street

AM Peak Hour
5/20/06

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