APPENDIX

G

CAPACITY ANALYSIS WORKSHEETS
YEAR 2007 BACKGROUND TRAFFIC SITUATION

ZONING COMMISSION
District of Columbia
CASE NO.03-13
EXHIBIT NO.6B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*New Jersey Ave at I St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Background)*
Analysis Time Period	*AM Peak*		

Project Description *Arthur Capper Project*

East/West Street: *I Street, S.E.* | North/South Street: *New Jersey Avenue, S.E*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*139*	*141*	*0*	*0*	*99*	*44*
Peak-Hour Factor, PHF	*0.81*	*0.81*	*1.00*	*1.00*	*0.64*	*0.64*
Hourly Flow Rate, HFR	*171*	*174*	*0*	*0*	*154*	*68*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*58*	*0*	*104*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.79*	*1.00*	*0.79*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*73*	*0*	*131*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*171*						*204*	
C (m) (vph)	*1359*						*570*	
v/c	*0.13*						*0.36*	
95% queue length	*0.43*						*1.62*	
Control Delay	*8.0*						*14.8*	
LOS	*A*						*B*	
Approach Delay	–	–					*14.8*	
Approach LOS	–	–					*B*	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*New Jersey Ave at I St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Background)*
Analysis Time Period	*PM Peak*		

Project Description *Arthur Capper Project*

East/West Street: *I Street, S.E.* | North/South Street: *New Jersey Avenue, S.E*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*133*	*149*	*0*	*0*	*127*	*47*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*1.00*	*1.00*	*0.75*	*0.75*
Hourly Flow Rate, HFR	*154*	*173*	*0*	*0*	*169*	*62*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*75*	*0*	*124*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.81*	*1.00*	*0.81*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*92*	*0*	*153*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*154*						*245*	
C (m) (vph)	*1349*						*571*	
v/c	*0.11*						*0.43*	
95% queue length	*0.39*						*2.14*	
Control Delay	*8.0*						*16.0*	
LOS	*A*						*C*	
Approach Delay	–	–				*16.0*		
Approach LOS	–	–				*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*New Jersey Ave at K St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Background)*
Analysis Time Period	*AM Peak*		

Project Description	*Arthur Capper Project*
East/West Street:	*K Street, S.E.*
North/South Street:	*New Jersey Avenue, S.E.*
Intersection Orientation:	*North-South*
Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*2*	*226*	*28*	*25*	*175*	*3*
Peak-Hour Factor, PHF	*0.85*	*0.85*	*0.85*	*0.66*	*0.66*	*0.66*
Hourly Flow Rate, HFR	*2*	*265*	*32*	*37*	*265*	*4*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*6*	*45*	*56*	*5*	*12*	*3*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.46*	*0.46*	*0.46*
Hourly Flow Rate, HFR	*6*	*48*	*60*	*10*	*26*	*6*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*2*	*37*		*114*			*42*	
C (m) (vph)	*1306*	*1276*		*519*			*384*	
v/c	*0.00*	*0.03*		*0.22*			*0.11*	
95% queue length	*0.00*	*0.09*		*0.83*			*0.37*	
Control Delay	*7.8*	*7.9*		*13.9*			*15.5*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay	–	–	*13.9*			*15.5*		
Approach LOS	–	–	*B*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at K St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Background)*
Analysis Time Period	*PM Peak*		

Project Description	*Arthur Capper Project*
East/West Street:	*K Street, S.E.*
North/South Street:	*New Jersey Avenue, S.E.*
Intersection Orientation:	*North-South*
Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*3*	*250*	*34*	*32*	*210*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*3*	*263*	*35*	*34*	*223*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*4*	*31*	*32*	*13*	*17*	*4*
Peak-Hour Factor, PHF	*0.73*	*0.73*	*0.73*	*0.77*	*0.77*	*0.77*
Hourly Flow Rate, HFR	*5*	*42*	*43*	*16*	*22*	*5*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*3*	*34*		*90*			*43*	
C (m) (vph)	*1345*	*1275*		*524*			*398*	
v/c	*0.00*	*0.03*		*0.17*			*0.11*	
95% queue length	*0.01*	*0.08*		*0.62*			*0.36*	
Control Delay	*7.7*	*7.9*		*13.3*			*15.1*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay	--	--	*13.3*			*15.1*		
Approach LOS	--	--	*B*			*C*		

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ORGA

O.R. George & Associates, Inc

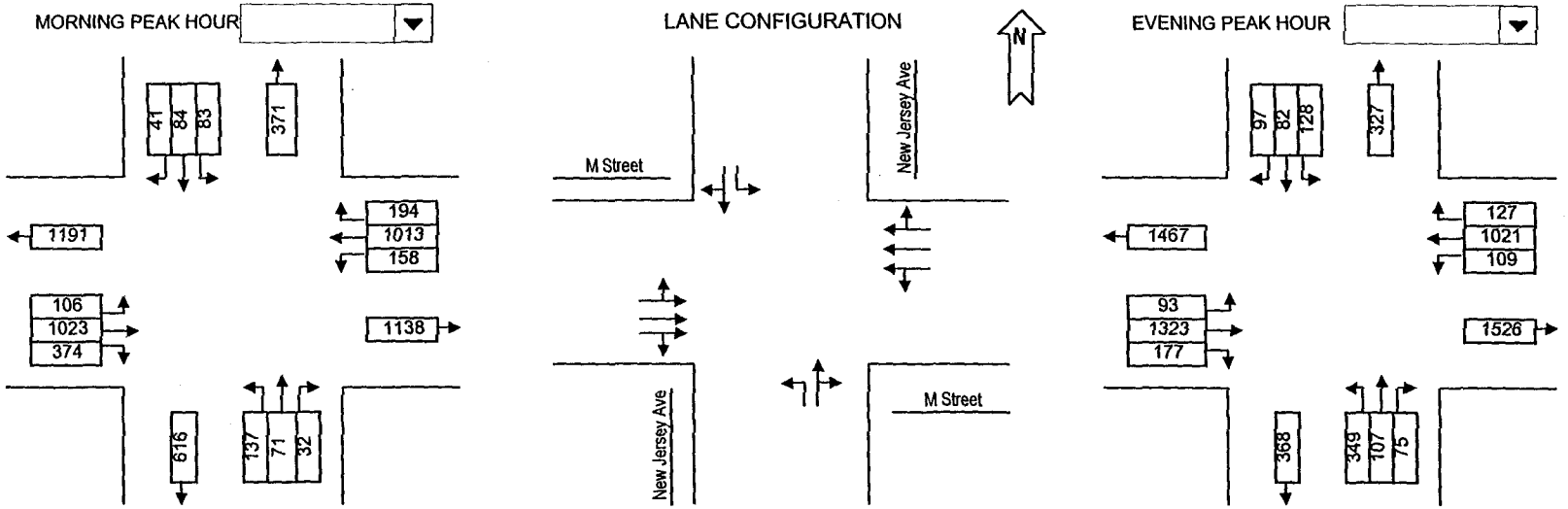
CRITICAL LANE VOLUME CAPACITY ANALYSIS

CONDITION: Background - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at New Jersey Avenue, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION

EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.60

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
NBTR+SBL	32	71	0	0	103	1.00	103	83	186	☐
										☐
SBTR+NBL	41	84	0	0	125	1.00	125	137	262	☑
										☐
EBRTL+WBL	374	1023	5	106	1927	0.40	771	158	929	☑
										☐
WBRTL+EBL	194	1013	5	158	1997	0.40	799	106	905	☐
										☐

Remarks:

☑ Critical Volume — Total CLV: 1191 — V/C

V/C = CLV / 1600 — LOS: C — 0.74

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
NBTR+SBL	75	107	0	0	182	1.00	182	128	310	☐
										☐
SBTR+NBL	97	82	0	0	179	1.00	179	349	528	☑
										☐
EBRTL+WBL	177	1323	5	93	1965	0.40	786	109	895	☑
										☐
WBRTL+EBL	127	1021	5	109	1693	0.40	677	93	770	☐
										☐

Remarks:

☑ Critical Volume — Total CLV: 1423 — V/C

V/C = CLV / 1600 — LOS: D — 0.89

HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	New Jersey Ave at M St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	02/12/2003	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	1	0	0	2	0
Lane group		LTR		DefL	TR			LTR		DefL	TR	
Volume, V (vph)	106	1023	374	158	1013	194	137	71	32	83	84	41
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0		2.0	2.0			2.0		2.0	2.0	
Extension of effective green, e		2.0		2.0	2.0			2.0		2.0	2.0	
Arrival type, AT		3		3	3			3		3	3	
Unit extension, UE		3.0		3.0	3.0			3.0		3.0	3.0	
Filtering/metering, I		1.000		1.000	1.000			1.000		1.000	1.000	
Initial unmet demand, Q_b		0.0		0.0	0.0			0.0		0.0	0.0	
Ped / Bike / RTOR volumes	0		0	0		0	0		0	0		0
Lane width		12.0		12.0	12.0			12.0		12.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0		0	0			0		0	0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 48.0	G =	G =	G =	G = 25.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25					Cycle Length, C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1671		176	1342			267		92	139	
Lane group capacity, c		2167		114	2114			408		349	564	
v/c ratio, X		0.77		1.54	0.63			0.65		0.26	0.25	

C-6

Total green ratio, g/C		0.60		0.60	0.60			0.31		0.31	0.31	
Uniform delay, d_1		11.9		16.0	10.3			23.8		20.6	20.5	
Progression factor, PF		1.000		1.000	1.000			1.000		1.000	1.000	
Delay calibration, k		0.50		0.50	0.50			0.50		0.50	0.50	
Incremental delay, d_2		2.7		283.4	1.5			7.9		1.8	1.0	
Initial queue delay, d_3												
Control delay		14.6		299.4	11.8			31.7		22.4	21.5	
Lane group LOS		B		F	B			C		C	C	
Approach delay	14.6			45.2			31.7			21.9		
Approach LOS	B			D			C			C		
Intersection delay	28.9						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	New Jersey Ave at M St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	02/12/2003	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	2	0	0	2	0
Lane group		LTR			LTR		DefL	TR		DefL	TR	
Volume, V (vph)	93	1323	177	109	1021	127	349	107	75	128	82	97
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0			2.0		2.0	2.0		2.0	2.0	
Extension of effective green, e		2.0			2.0		2.0	2.0		2.0	2.0	
Arrival type, AT		3			3		3	3		3	3	
Unit extension, UE		3.0			3.0		3.0	3.0		3.0	3.0	
Filtering/metering, I		1.000			1.000		1.000	1.000		1.000	1.000	
Initial unmet demand, Q_b		0.0			0.0		0.0	0.0		0.0	0.0	
Ped / Bike / RTOR volumes	0		0	0		0	0		0	0		0
Lane width		12.0			12.0		12.0	12.0		12.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0		0	0		0	0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 42.0	G =	G =	G =	G = 31.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25					Cycle Length, C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1770			1396		388	202		142	199	
Lane group capacity, c		1929			1759		466	691		465	676	
v/c ratio, X		0.92			0.79		0.83	0.29		0.31	0.29	

C-8

Total green ratio, g/C		0.52			0.52		0.39	0.39		0.39	0.39	
Uniform delay, d_1		17.4			15.5		22.2	16.9		17.0	16.9	
Progression factor, PF		1.000			1.000		1.000	1.000		1.000	1.000	
Delay calibration, k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental delay, d_2		8.5			3.8		15.9	1.1		1.7	1.1	
Initial queue delay, d_3												
Control delay		25.9			19.3		38.0	18.0		18.7	18.0	
Lane group LOS		C			B		D	B		B	B	
Approach delay	25.9			19.3			31.2			18.3		
Approach LOS	C			B			C			B		
Intersection delay	23.8						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	M St at 3rd St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	0	0	0	0	0
Lane group		LT			TR						LR	
Volume, V (vph)	64	933			1382	60				110		40
% Heavy vehicles, %HV	0	0			0	0				0		0
Peak-hour factor, PHF	0.90	0.90			0.90	0.90				0.90		0.90
Pretimed (P) or actuated (A)	P	P			P	P				P		P
Start-up lost time, l_1		2.0			2.0						2.0	
Extension of effective green, e		2.0			2.0						2.0	
Arrival type, AT		3			3						3	
Unit extension, UE		3.0			3.0						3.0	
Filtering/metering, I		1.000			1.000						1.000	
Initial unmet demand, Q_b		0.0			0.0						0.0	
Ped / Bike / RTOR volumes				0		0	0			0		0
Lane width		12.0			12.0						12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N		N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0						0	
Min. time for pedestrians, G_p				3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = 51.0	G =	G =	G =	G = 22.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1108			1603						166	
Lane group capacity, c		2487			3286						486	
v/c ratio, X		0.45			0.49						0.34	
Total green ratio, g/C		0.64			0.64						0.28	
Uniform delay, d_1		7.3			7.6						23.2	

G-10

Progression factor, PF		1.000			1.000						1.000	
Delay calibration, k		0.50			0.50						0.50	
Incremental delay, d_2		0.6			0.5						1.9	
Initial queue delay, d_3												
Control delay		7.9			8.1						25.1	
Lane group LOS		A			A						C	
Approach delay	7.9			8.1					25.1			
Approach LOS	A			A					C			
Intersection delay	9.0						Intersection LOS		A			

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	M St at 3rd St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	0	0	0	0	0
Lane group		LT			TR						LR	
Volume, V (vph)	112	1409			1198	94				44		31
% Heavy vehicles, %HV	0	0			0	0				0		0
Peak-hour factor, PHF	0.90	0.90			0.90	0.90				0.90		0.90
Pretimed (P) or actuated (A)	P	P			P	P				P		P
Start-up lost time, l_1		2.0			2.0						2.0	
Extension of effective green, e		2.0			2.0						2.0	
Arrival type, AT		3			3						3	
Unit extension, UE		3.0			3.0						3.0	
Filtering/metering, I		1.000			1.000						1.000	
Initial unmet demand, Q_b		0.0			0.0						0.0	
Ped / Bike / RTOR volumes				0		0	0			0		0
Lane width		12.0			12.0						12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N		N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0						0	
Min. time for pedestrians, G_p				3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = 51.0	G =	G =	G =	G = 22.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1690			1435						83	
Lane group capacity, c		2325			3271						479	
v/c ratio, X		0.73			0.44						0.17	
Total green ratio, g/C		0.64			0.64						0.28	
Uniform delay, d_1		9.8			7.3						22.1	

G-12

Progression factor, PF		1.000			1.000						1.000	
Delay calibration, k		0.50			0.50						0.50	
Incremental delay, d_2		2.0			0.4						0.8	
Initial queue delay, d_3												
Control delay		11.8			7.7						22.9	
Lane group LOS		B			A						C	
Approach delay	11.8			7.7					22.9			
Approach LOS	B			A					C			
Intersection delay	10.3						Intersection LOS		B			

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ORGA

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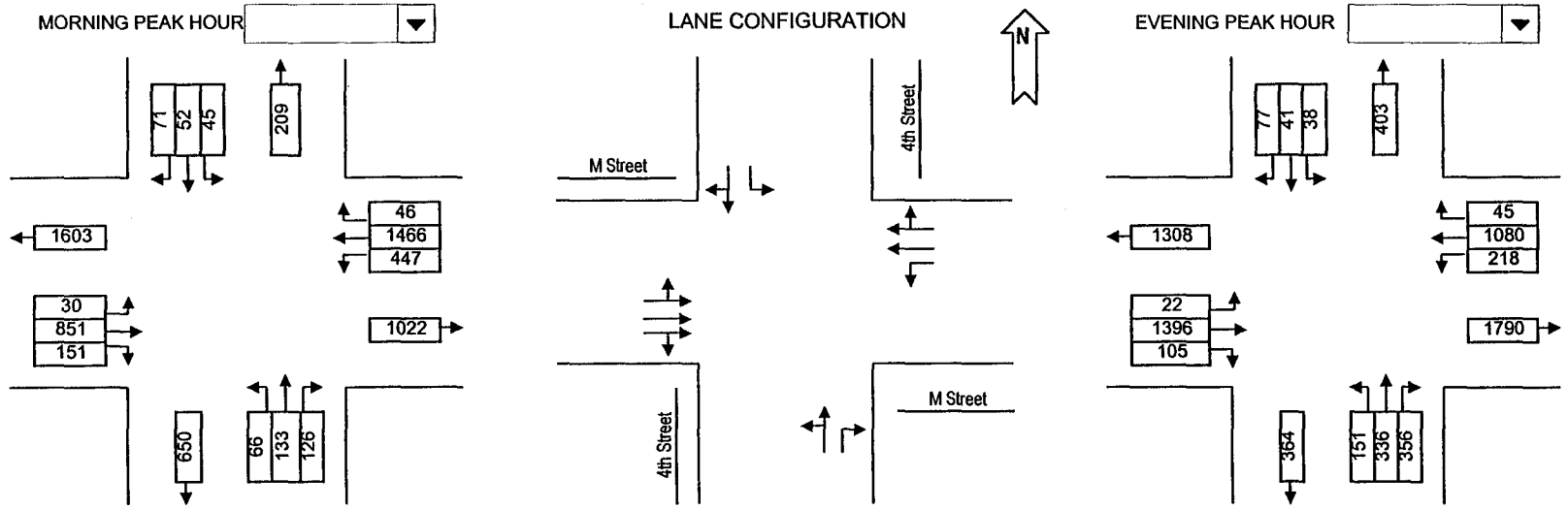
CRITICAL LANE VOLUME CAPACITY ANALYSIS

CONDITION: Background - Weekday
COMPUTED BY: ORGA
DATE: 3/11/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 4th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION

EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.60

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
NBTL+SBL	0	133	1	66	206	1.00	206	45	251	☑
										☐
SBTR+NBL	71	52	0	0	123	1.00	123	66	189	☐
										☐
EBRTL+WBL	151	851	5	30	1152	0.40	461	447	908	☑
										☐
WBTR+EBL	46	1466	0	0	1512	0.55	832	30	862	☐
										☐

Remarks:

☑ Critical Volume — Total CLV 1158 — V/C 0.72
V/C = CLV / 1600 — LOS C

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
NBTL+SBL	0	336	1	151	502	1.00	502	38	540	☑
										☐
SBTR+NBL	77	41	0	0	118	1.00	118	151	269	☐
										☐
EBRTL+WBL	105	1396	5	22	1611	0.40	644	218	862	☑
										☐
WBTR+EBL	45	1080	0	0	1125	0.55	619	22	641	☐
										☐

Remarks:

☑ Critical Volume — Total CLV 1403 — V/C 0.88
V/C = CLV / 1600 — LOS D

HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 4th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*02/12/2003*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Background)*
		Project ID	*Arthur Capper Development*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LTR*		*DefL*	*TR*			*LTR*			*LTR*	
Volume, V (vph)	*30*	*851*	*151*	*447*	*1466*	*46*	*66*	*133*	*126*	*45*	*52*	*71*
% Heavy vehicles, %HV	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Pretimed (P) or actuated (A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*		*2.0*	*2.0*			*2.0*			*2.0*	
Extension of effective green, e		*2.0*		*2.0*	*2.0*			*2.0*			*2.0*	
Arrival type, AT		*3*		*3*	*3*			*3*			*3*	
Unit extension, UE		*3.0*		*3.0*	*3.0*			*3.0*			*3.0*	
Filtering/metering, I		*1.000*		*1.000*	*1.000*			*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*		*0.0*	*0.0*			*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*		*12.0*	*12.0*			*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*		*0*	*0*			*0*			*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*			*3.2*		

Phasing	WB Only	EW Perm	03	04	NS Perm	06	07	08
Timing	G = *18.0*	G = *32.0*	G =	G =	G = *20.0*	G =	G =	G =
	Y =	Y = *4*	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1147*		*497*	*1680*			*361*			*187*	
Lane group capacity, c		*1710*		*504*	*1980*			*385*			*705*	
v/c ratio, X		*0.67*		*0.99*	*0.85*			*0.94*			*0.27*	
Total green ratio, g/C		*0.40*		*0.21*	*0.66*			*0.25*			*0.25*	

G-15

Uniform delay, d_1		19.7		20.3	10.4			29.4			24.1	
Progression factor, PF		1.000		1.000	1.000			1.000			1.000	
Delay calibration, k		0.50		0.50	0.50			0.50			0.50	
Incremental delay, d_2		2.1		36.8	4.8			32.6			0.9	
Initial queue delay, d_3												
Control delay		21.8		57.1	15.2			61.9			25.0	
Lane group LOS		C		E	B			E			C	
Approach delay	21.8			24.7			61.9			25.0		
Approach LOS	C			C			E			C		
Intersection delay	27.3						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	M St at 4th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	02/12/2003	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	2	0	0	2	0
Lane group		LTR		DefL	TR			LTR			LTR	
Volume, V (vph)	22	1396	105	218	1080	45	151	336	356	38	41	77
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0		2.0	2.0			2.0			2.0	
Extension of effective green, e		2.0		2.0	2.0			2.0			2.0	
Arrival type, AT		3		3	3			3			3	
Unit extension, UE		3.0		3.0	3.0			3.0			3.0	
Filtering/metering, I		1.000		1.000	1.000			1.000			1.000	
Initial unmet demand, Q_b		0.0		0.0	0.0			0.0			0.0	
Ped / Bike / RTOR volumes	0		0	0		0	0		0	0		0
Lane width		12.0		12.0	12.0			12.0			12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0		0	0			0			0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 10.0	G = 34.0	G =	G =	G = 26.0	G =	G =	G =
	Y =	Y = 4	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1692		242	1250			937			174	
Lane group capacity, c		1978		298	1490			930			731	
v/c ratio, X		0.86		0.81	0.84			1.01			0.24	
Total green ratio, g/C		0.43		0.11	0.59			0.32			0.32	

G-17

Uniform delay, d_1		20.8		17.4	13.4			27.0			19.8	
Progression factor, PF		1.000		1.000	1.000			1.000			1.000	
Delay calibration, k		0.50		0.50	0.50			0.50			0.50	
Incremental delay, d_2		5.0		20.9	5.8			31.4			0.8	
Initial queue delay, d_3												
Control delay		25.8		38.3	19.2			58.4			20.5	
Lane group LOS		C		D	B			E			C	
Approach delay	25.8			22.3			58.4			20.5		
Approach LOS	C			C			E			C		
Intersection delay	31.5						Intersection LOS			C		

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ORGA

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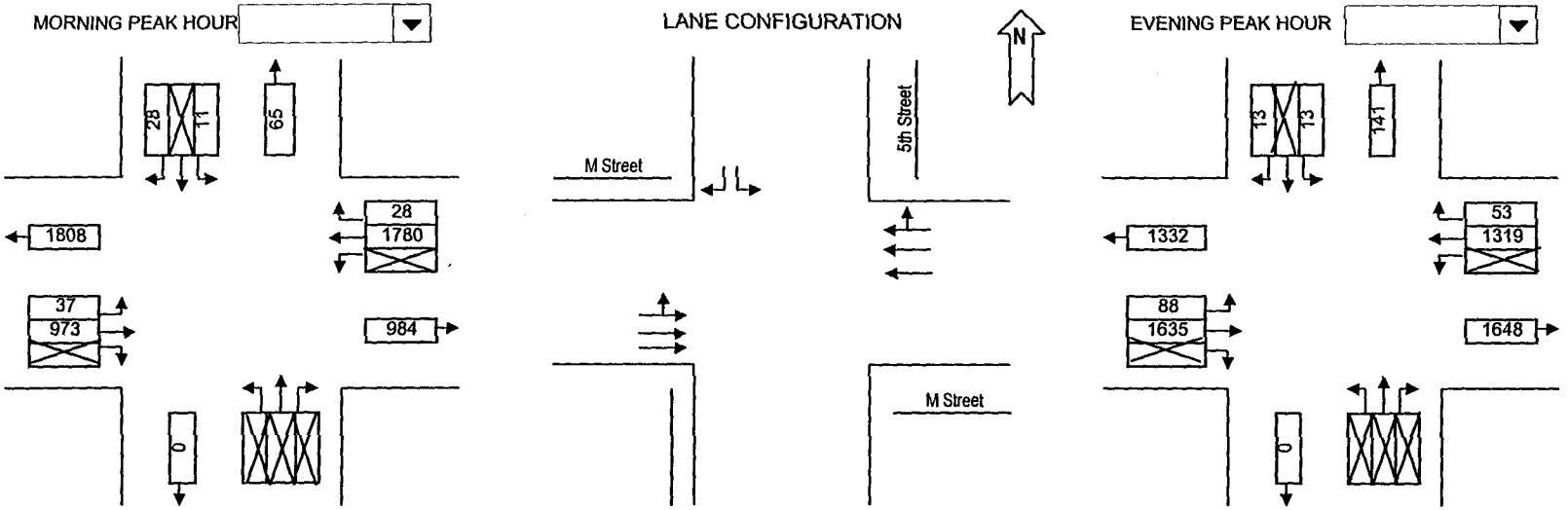
CRITICAL LANE VOLUME CAPACITY ANALYSIS

CONDITION: Background - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 5th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION

EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	11	11	1.00	11	0	11	☑
SBR	28-37	0	0	0	-9	1.00	-9	0	-9	☐
EBTL	0	973	5	37	1158	0.40	463	0	463	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	28	1780	0	0	1808	0.40	723	37	760	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 771 — V/C

V/C = CLV / 1600 — LOS A — 0.48

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts	Critical Lane Volume	
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	13	13	1.00	13	0	13	☑
SBR	13-88	0	0	0	0	1.00	0	0	0	☐
EBTL	0	1635	5	88	2075	0.40	830	0	830	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	53	1319	0	0	1372	0.40	549	88	637	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 843 — V/C

V/C = CLV / 1600 — LOS A — 0.53

CRITICAL LANE VOLUME CAPACITY ANALYSIS

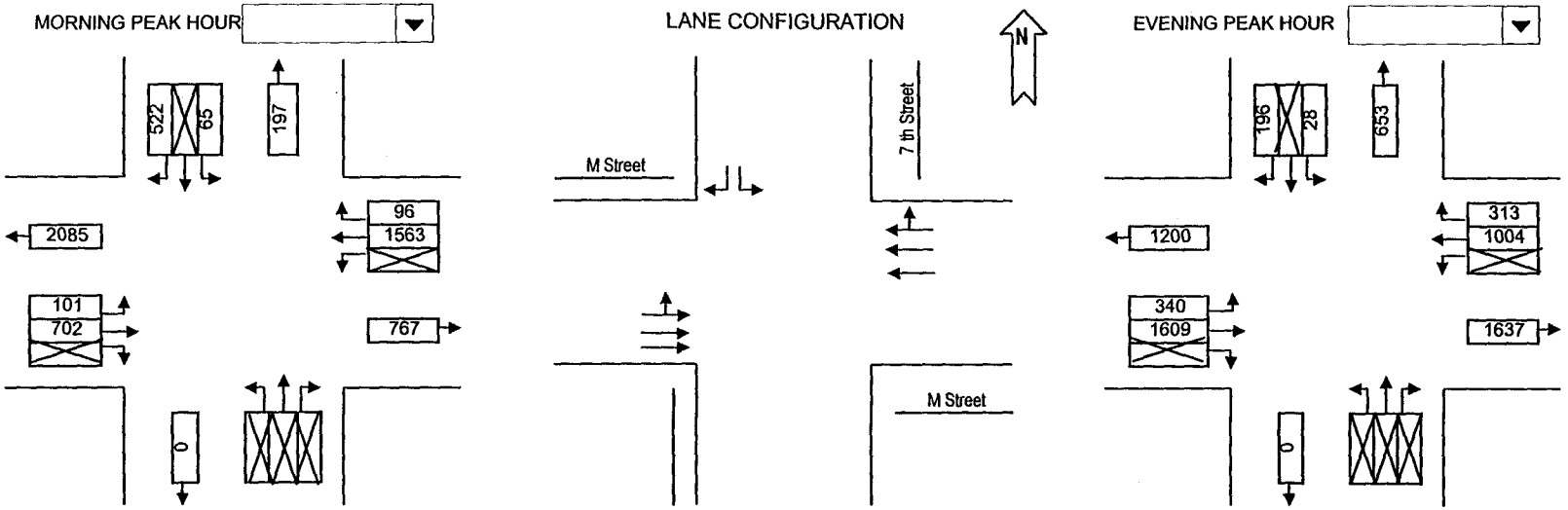
ORGA
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CONDITION: Background - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 7th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION

EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	65	65	1.00	65	0	65	☐
SBR	522-10	0	0	0	421	1.00	421	0	421	☑
EBTL	0	702	5	101	1207	0.40	483	0	483	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	96	1563	0	0	1659	0.40	664	101	765	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 1186 — V/C

V/C = CLV / 1600 — LOS C — 0.74

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	28	28	1.00	28	0	28	☑
SBR	196-34	0	0	0	-162	1.00	-162	0	-162	☐
EBTL	0	1609	5	340	3309	0.40	1324	0	1324	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	313	1004	5	0	1317	0.40	527	340	867	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 1352 — V/C

V/C = CLV / 1600 — LOS D — 0.84

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	M St at 8th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	0	0	1	1	1
Lane group		T			TR			LR		L	LTR	R
Volume, V (vph)		802			1365	0	2		1	642	3	264
% Heavy vehicles, %HV		0			0	0	0		0	0	0	0
Peak-hour factor, PHF		0.87			0.88	0.88	0.75		0.75	0.93	0.93	0.93
Pretimed (P) or actuated (A)		P			P	P	P		P	P	P	P
Start-up lost time, l_1		2.0			2.0			2.0		2.0	2.0	2.0
Extension of effective green, e		2.0			2.0			2.0		2.0	2.0	2.0
Arrival type, AT		3			3			3		3	3	3
Unit extension, UE		3.0			3.0			3.0		3.0	3.0	3.0
Filtering/metering, I		1.000			1.000			1.000		1.000	1.000	1.000
Initial unmet demand, Q_b		0.0			0.0			0.0		0.0	0.0	0.0
Ped / Bike / RTOR volumes				0		0	0		0	0		0
Lane width		12.0			12.0			12.0		12.0	12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0			0		0	0	0
Min. time for pedestrians,				3.2			3.2			3.2		

Phasing	Thru & RT	02	03	04	NS Perm	06	07	08
Timing	G = 36.0	G =	G =	G =	G = 37.0	G =	G =	G =
	Y = 3	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		922			1551			4		690	3	284
Lane group capacity, c		2334			2334			661		835	879	747
v/c ratio, X		0.40			0.66			0.01		0.83	0.00	0.38
Total green ratio, g/C		0.45			0.45			0.46		0.46	0.46	0.46
Uniform delay, d_1		14.7			17.3			11.6		18.7	11.6	14.0

G-21

Progression factor, PF		1.000			1.000			1.000		1.000	1.000	1.000
Delay calibration, k		0.50			0.50			0.50		0.50	0.50	0.50
Incremental delay, d_2		0.5			1.5			0.0		9.2	0.0	1.5
Initial queue delay, d_3												
Control delay		15.2			18.8			11.6		27.9	11.6	15.5
Lane group LOS		B			B			B		C	B	B
Approach delay	15.2			18.8			11.6			24.2		
Approach LOS	B			B			B			C		
Intersection delay	19.4						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	M St at 8th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	0	0	1	1	1
Lane group		T			TR			LR		L	LTR	R
Volume, V (vph)		1641			1042	0	1		2	319	1	159
% Heavy vehicles, %HV		0			0	0	0		0	0	0	0
Peak-hour factor, PHF		0.88			0.95	0.95	0.38		0.38	0.86	0.86	0.86
Pretimed (P) or actuated (A)		P			P	P	P		P	P	P	P
Start-up lost time, l_1		2.0			2.0			2.0		2.0	2.0	2.0
Extension of effective green, e		2.0			2.0			2.0		2.0	2.0	2.0
Arrival type, AT		3			3			3		3	3	3
Unit extension, UE		3.0			3.0			3.0		3.0	3.0	3.0
Filtering/metering, I		1.000			1.000			1.000		1.000	1.000	1.000
Initial unmet demand, Q_b		0.0			0.0			0.0		0.0	0.0	0.0
Ped / Bike / RTOR volumes				0		0	0		0	0		0
Lane width		12.0			12.0			12.0		12.0	12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0			0		0	0	0
Min. time for pedestrians,				3.2			3.2			3.2		

Phasing	Thru & RT	02	03	04	NS Perm	06	07	08
Timing	G = 36.0	G =	G =	G =	G = 37.0	G =	G =	G =
	Y = 3	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1865			1097			8		371	1	185
Lane group capacity, c		2334			2334			705		835	879	747
v/c ratio, X		0.80			0.47			0.01		0.44	0.00	0.25
Total green ratio, g/C		0.45			0.45			0.46		0.46	0.46	0.46
Uniform delay, d_1		18.9			15.3			11.6		14.5	11.6	13.1

G-23

Progression factor, PF		1.000			1.000			1.000		1.000	1.000	1.000
Delay calibration, k		0.50			0.50			0.50		0.50	0.50	0.50
Incremental delay, d_2		3.0			0.7			0.0		1.7	0.0	0.8
Initial queue delay, d_3												
Control delay		21.9			16.0			11.6		16.3	11.6	13.8
Lane group LOS		C			B			B		B	B	B
Approach delay	21.9			16.0			11.6			15.4		
Approach LOS	C			B			B			B		
Intersection delay	19.0						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	*Virginia Ave at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Background)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*1*	*0*
Lane group		*LTR*						*TR*		*L*	*T*	
Volume, V (vph)	*146*	*18*	*548*					*98*	*9*	*94*	*390*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.87*	*0.87*	*0.87*					*0.87*	*0.87*	*0.86*	*0.86*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*						*2.0*		*2.0*	*2.0*	
Extension of effective green, e		*2.0*						*2.0*		*2.0*	*2.0*	
Arrival type, AT		*3*						*3*		*3*	*3*	
Unit extension, UE		*3.0*						*3.0*		*3.0*	*3.0*	
Filtering/metering, I		*1.000*						*1.000*		*1.000*	*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*		*0.0*	*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*		*12.0*	*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*		*0*	*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *35.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*819*						*123*		*109*	*453*	
Lane group capacity, c		*1462*						*822*		*535*	*831*	
v/c ratio, X		*0.56*						*0.15*		*0.20*	*0.55*	
Total green ratio, g/C		*0.46*						*0.44*		*0.44*	*0.44*	
Uniform delay, d_1		*15.6*						*13.5*		*13.9*	*16.6*	

G-25

Progression factor, PF		1.000						1.000		1.000	1.000	
Delay calibration, k		0.50						0.50		0.50	0.50	
Incremental delay, d_2		1.6						0.4		0.9	2.6	
Initial queue delay, d_3												
Control delay		17.2						13.9		14.8	19.2	
Lane group LOS		B						B		B	B	
Approach delay	17.2						13.9			18.3		
Approach LOS	B						B			B		
Intersection delay	17.3						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2007 (Projected Background)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*1*	*0*
Lane group		*LTR*						*TR*		*L*	*T*	
Volume, V (vph)	*515*	*14*	*202*					*248*	*44*	*352*	*283*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.85*	*0.85*	*0.85*					*0.74*	*0.74*	*0.97*	*0.97*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*						*2.0*		*2.0*	*2.0*	
Extension of effective green, e		*2.0*						*2.0*		*2.0*	*2.0*	
Arrival type, AT		*3*						*3*		*3*	*3*	
Unit extension, UE		*3.0*						*3.0*		*3.0*	*3.0*	
Filtering/metering, I		*1.000*						*1.000*		*1.000*	*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*		*0.0*	*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*		*12.0*	*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*		*0*	*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *32.0*	G =	G =	G =	G = *40.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*860*						*394*		*363*	*292*	
Lane group capacity, c		*1337*						*931*		*398*	*950*	
v/c ratio, X		*0.64*						*0.42*		*0.91*	*0.31*	
Total green ratio, g/C		*0.40*						*0.50*		*0.50*	*0.50*	
Uniform delay, d_1		*19.4*						*12.7*		*18.4*	*11.8*	

G-27

Progression factor, PF		1.000						1.000			1.000	1.000												
Delay calibration, k		0.50						0.50			0.50	0.50												
Incremental delay, d_2		2.4						1.4			27.6	0.8												
Initial queue delay, d_3																								
Control delay		21.8						14.1			46.0	12.7												
Lane group LOS		C						B			D	B												
Approach delay	21.8						14.1			31.1														
Approach LOS	C						B			C														
Intersection delay	23.4						Intersection LOS			C														

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	Virginia Ave at 7th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	0	0	0	1	0	0	1	0
Lane group		LTR						TR			LT	
Volume, V (vph)	77	570	460					117	33	15	144	
% Heavy vehicles, %HV	0	0	0					0	0	0	0	
Peak-hour factor, PHF	0.84	0.84	0.84					0.80	0.80	0.73	0.73	
Pretimed (P) or actuated (A)	P	P	P					P	P	P	P	
Start-up lost time, l_1		2.0						2.0			2.0	
Extension of effective green, e		2.0						2.0			2.0	
Arrival type, AT		3						3			3	
Unit extension, UE		3.0						3.0			3.0	
Filtering/metering, I		1.000						1.000			1.000	
Initial unmet demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR volumes	0		0	0			0		0			
Lane width		12.0						12.0			12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0						0			0	
Min. time for pedestrians, G_p		3.2			3.2			3.2				

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 36.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25					Cycle Length, C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1319						187			218	
Lane group capacity, c		2242						830			829	
v/c ratio, X		0.59						0.23			0.26	
Total green ratio, g/C		0.46						0.45			0.45	
Uniform delay, d_1		15.9						13.5			13.7	

G-29

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		1.1						0.6			0.8	
Initial queue delay, d_3												
Control delay		17.0						14.1			14.5	
Lane group LOS		B						B			B	
Approach delay	17.0						14.1			14.5		
Approach LOS	B						B			B		
Intersection delay	16.4						Intersection LOS			B		

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Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		0.6						6.4			0.6	
Initial queue delay, d_3												
Control delay		14.9						24.8			13.8	
Lane group LOS		B						C			B	
Approach delay	14.9						24.8			13.8		
Approach LOS	B						C			B		
Intersection delay	18.4						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	Virginia Ave at 5th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	2	0	0	0	0	0	1	0	0	2	0
Lane group		LT						TR			LT	
Volume, V (vph)	6	50						141	32	194	1157	
% Heavy vehicles, %HV	0	0						0	0	0	0	
Peak-hour factor, PHF	0.77	0.77						0.83	0.83	0.90	0.90	
Pretimed (P) or actuated (A)	P	P						P	P	P	P	
Start-up lost time, l_1		2.0						2.0			2.0	
Extension of effective green, e		2.0						2.0			2.0	
Arrival type, AT		3						3			3	
Unit extension, UE		3.0						3.0			3.0	
Filtering/metering, I		1.000						1.000			1.000	
Initial unmet demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR volumes				0			0		0			
Lane width		12.0						12.0			12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0						0			0	
Min. time for pedestrians, G_p				3.2			3.2					

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = 15.0	G =	G =	G =	G = 15.0	G = 40.0	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y = 3	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		73						209			1502	
Lane group capacity, c		673						347			1792	
v/c ratio, X		0.11						0.60			0.84	
Total green ratio, g/C		0.19						0.19			0.50	
Uniform delay, d_1		27.0						29.8			17.2	

G-33

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		0.3						7.5			4.9	
Initial queue delay, d_3												
Control delay		27.3						37.3			22.1	
Lane group LOS		C						D			C	
Approach delay	27.3						37.3			22.1		
Approach LOS	C						D			C		
Intersection delay	24.1						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	Virginia Ave at 5th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Background)
		Project ID	Arthur Capper Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	2	0	0	0	0	0	1	0	0	2	0
Lane group		LT						TR			LT	
Volume, V (vph)	36	210						252	54	140	580	
% Heavy vehicles, %HV	0	0						0	0	0	0	
Peak-hour factor, PHF	0.84	0.92						0.69	0.69	0.90	0.90	
Pretimed (P) or actuated (A)	P	P						P	P	P	P	
Start-up lost time, l_1		2.0						2.0			2.0	
Extension of effective green, e		2.0						2.0			2.0	
Arrival type, AT		3						3			3	
Unit extension, UE		3.0						3.0			3.0	
Filtering/metering, I		1.000						1.000			1.000	
Initial unmet demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR volumes				0			0		0			
Lane width		12.0						12.0			12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0						0			0	
Min. time for pedestrians, G_p				3.2			3.2					

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = 18.0	G =	G =	G =	G = 26.0	G = 26.0	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y = 3	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		271						443			800	
Lane group capacity, c		806						603			1162	
v/c ratio, X		0.34						0.73			0.69	
Total green ratio, g/C		0.22						0.32			0.32	
Uniform delay, d_1		26.0						23.9			23.5	

G-35

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		1.1						7.8			3.3	
Initial queue delay, d_3												
Control delay		27.1						31.7			26.8	
Lane group LOS		C						C			C	
Approach delay	27.1						31.7			26.8		
Approach LOS	C						C			C		
Intersection delay	28.3						Intersection LOS			C		

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Alvin Powell*
Agency/Co.	*ORGA*
Date Performed	*1/23/03*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*Virginia Ave at 4th St*
Jurisdiction	*District of Columbia*
Analysis Year	*2003 (Existing)*

Project ID *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.*

North/South Street: *4th Street, S.E.*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*0*	*17*	*0*	*0*	*0*	*0*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*9*	*0*	*4*	*17*	*257*	*13*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*TR*				*LR*		*L*	*TR*
PHF	*0.57*				*0.65*		*0.87*	*0.87*
Flow Rate	*29*				*19*		*19*	309
% Heavy Vehicles	*0*				*0*		*0*	*0*
No. Lanes	*1*		*0*		*1*		*2*	
Geometry Group	*1*				*3a*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*				*0.7*		*1.0*	*0.0*
Prop. Right-Turns	*0.0*				*0.3*		*0.0*	*0.0*
Prop. Heavy Vehicle	*0.0*				0.0		*0.0*	*0.0*
hLT-adj	*0.2*	*0.2*			*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*			*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*			*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*4.70*				*4.70*		*4.70*	*4.70*

Departure Headway and Service Time

hd, initial value	*3.20*				*3.20*		*3.20*	*3.20*
x, initial	*0.03*				*0.02*		*0.02*	*0.27*
hd, final value	*4.70*				*4.70*		*4.70*	*4.70*
x, final value	*0.04*				*0.02*		*0.03*	*0.39*
Move-up time, m	*2.0*				*2.0*		*2.3*	
Service Time	*2.7*		*2.7*		*2.7*		*2.7*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*279*				*269*		*269*	*559*
Delay	*7.88*				*7.46*		*7.93*	*10.15*
LOS	*A*				*A*		*A*	*B*
Approach: Delay	*7.88*				*7.46*		*10.02*	
LOS	*A*				*A*		*B*	
Intersection Delay	*9.73*							
Intersection LOS	*A*							

G-37

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Alvin Powell*
Agency/Co.	*ORGA*
Date Performed	*1/23/03*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Virginia Ave at 4th St*
Jurisdiction	*District of Columbia*
Analysis Year	*2007 (Projected Background)*

Project ID *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* North/South Street: *4th Street, S.E.*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*0*	*97*	*4*	*0*	*0*	*0*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*11*	*0*	*12*	*75*	*160*	*9*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*TR*				*LR*		*L*	*TR*
PHF	*0.84*				*0.72*		*0.86*	*0.86*
Flow Rate	*119*				*31*		*87*	196
% Heavy Vehicles	*0*				*0*		*0*	*0*
No. Lanes	*1*		*0*		*1*		*2*	
Geometry Group	*1*				*3a*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*				*0.5*		*1.0*	*0.0*
Prop. Right-Turns	*0.0*				*0.5*		*0.0*	*0.1*
Prop. Heavy Vehicle	*0.0*				0.0		*0.0*	*0.0*
hLT-adj	*0.2*	*0.2*			*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*			*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*			*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*4.61*				*4.61*		*4.61*	*4.61*

Departure Headway and Service Time

hd, initial value	*3.20*				*3.20*		*3.20*	*3.20*
x, initial	*0.11*				*0.03*		*0.08*	*0.17*
hd, final value	*4.61*				*4.61*		*4.61*	*4.61*
x, final value	*0.15*				*0.04*		*0.13*	*0.26*
Move-up time, m	*2.0*				*2.0*		*2.3*	
Service Time	*2.6*		*2.6*		*2.6*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*369*				*281*		*337*	*446*
Delay	*8.43*				*7.57*		*8.81*	*9.17*
LOS	*A*				*A*		*A*	*A*
Approach: Delay	*8.43*				*7.57*		*9.06*	
LOS	*A*				*A*		*A*	
Intersection Delay	*8.78*							
Intersection LOS	*A*							

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*Virginia Ave at 3rd St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Background)*
Analysis Time Period	*AM Peak*		

Project Description *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* | North/South Street: *3rd Street, S.E.*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*9*	*262*	*128*	*85*	*288*	*15*
Peak-Hour Factor, PHF	*0.82*	*0.82*	*0.82*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*10*	*319*	*156*	*94*	*320*	*16*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*9*	*6*	*3*	*10*	*55*
Peak-Hour Factor, PHF	*0.63*	*0.63*	*0.63*	*0.71*	*0.71*	*0.71*
Hourly Flow Rate, HFR	*7*	*14*	*9*	*4*	*14*	*77*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*10*	*94*		*30*			*95*	
C (m) (vph)	*1235*	*1098*		*266*			*495*	
v/c	*0.01*	*0.09*		*0.11*			*0.19*	
95% queue length	*0.02*	*0.28*		*0.38*			*0.70*	
Control Delay	*7.9*	*8.6*		*20.2*			*14.0*	
LOS	*A*	*A*		*C*			*B*	
Approach Delay	–	–	*20.2*			*14.0*		
Approach LOS	–	–	*C*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 3rd St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Background)*
Analysis Time Period	*PM Peak*		

Project Description *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* | North/South Street: *3rd Street, S.E.*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*8*	*416*	*19*	*44*	*102*	*5*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.73*	*0.73*	*0.73*
Hourly Flow Rate, HFR	*8*	*442*	*20*	*60*	*139*	*6*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*4*	*3*	*16*	*33*	*18*	*1*
Peak-Hour Factor, PHF	*0.82*	*0.82*	*0.82*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*4*	*3*	*19*	*45*	*24*	*1*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*8*	*60*		*26*			*70*	
C (m) (vph)	*1450*	*1110*		*485*			*315*	
v/c	*0.01*	*0.05*		*0.05*			*0.22*	
95% queue length	*0.02*	*0.17*		*0.17*			*0.83*	
Control Delay	*7.5*	*8.4*		*12.8*			*19.7*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay	–	–	*12.8*			*19.7*		
Approach LOS	–	–	*B*			*C*		

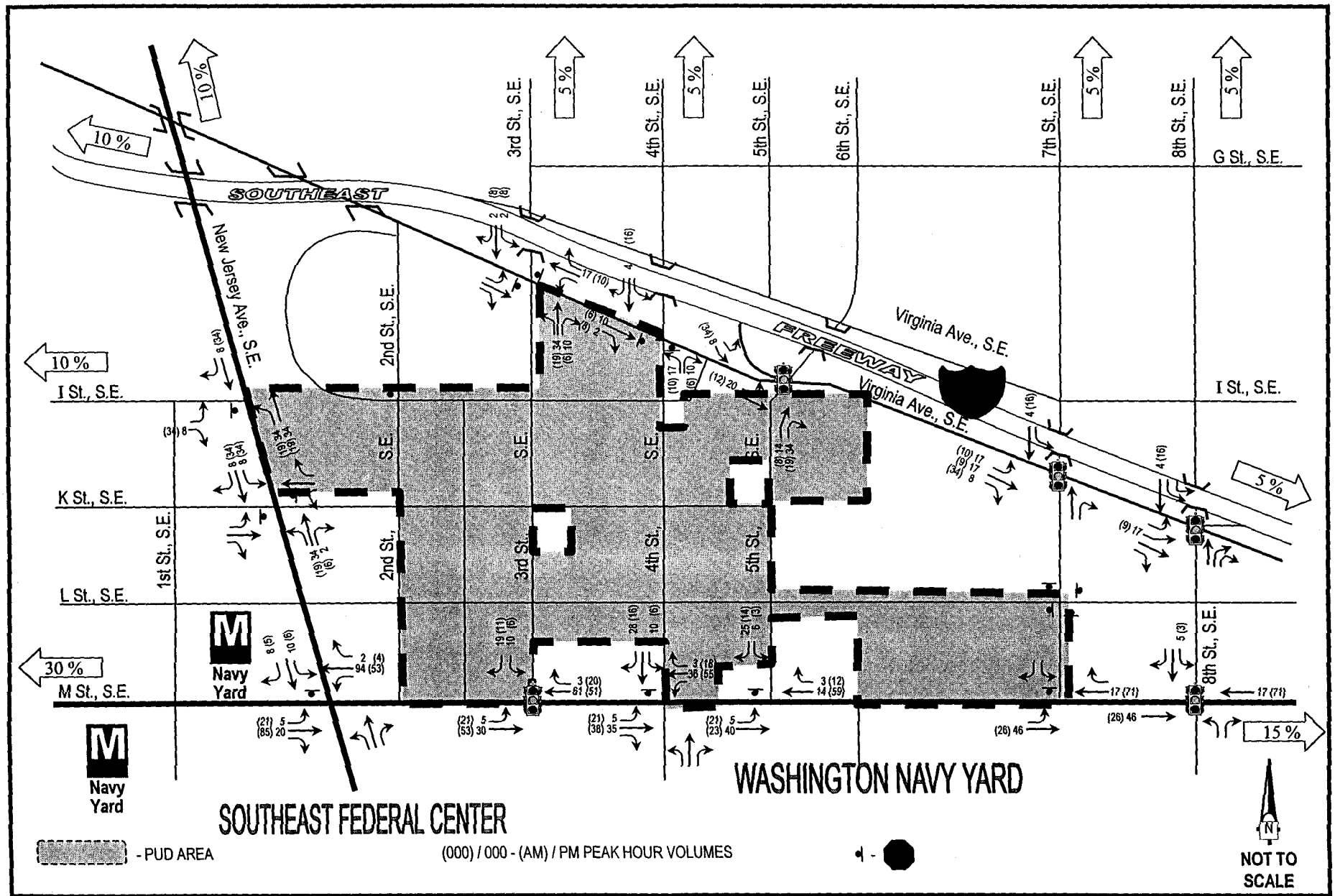
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APPENDIX

H

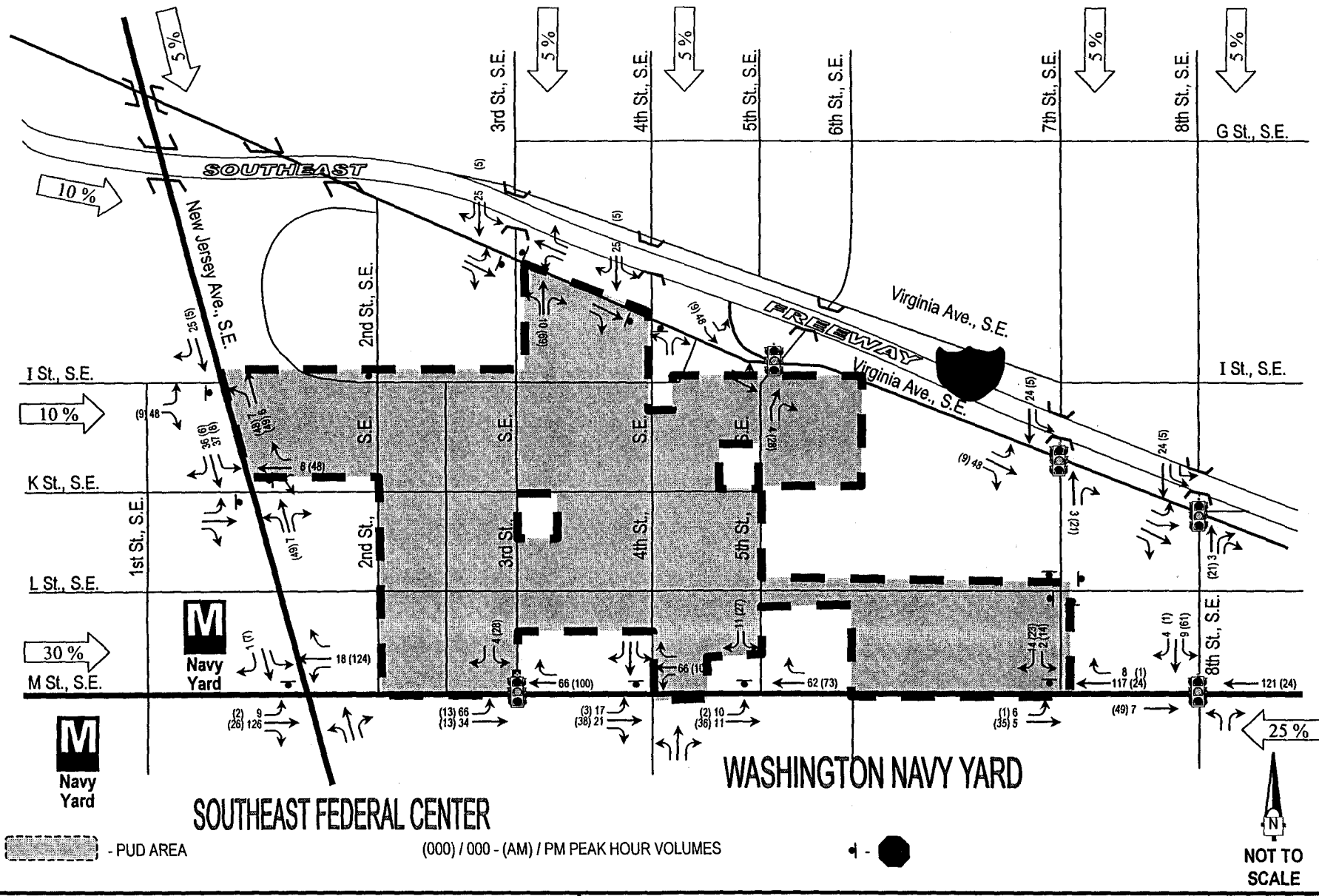
TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT
SHEETS – SUBJECT DEVELOPMENT



O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers – Transportation Planners

APPENDIX H-1

Site Traffic Assignment (Residential)
Arthur Capper/Carrollsburg Dwellings- Planned Unit Development



O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers – Transportation Planners

APPENDIX H-2

Site Traffic Assignment (Office & Retail)
Arthur Capper/Carrollsburg Dwellings - Planned Unit Development

H-2

APPENDIX

I

CAPACITY ANALYSIS WORKSHEETS
YEAR 2007 TOTAL TRAFFIC SITUATION
(INCLUDING THE SUBJECT DEVELOPMENT)

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*New Jersey Ave at I St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Total)*
Analysis Time Period	*AM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*I Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*181*	*0*	*0*	*132*	*44*
Peak-Hour Factor, PHF	*0.81*	*0.81*	*1.00*	*1.00*	*0.64*	*0.64*
Hourly Flow Rate, HFR	*98*	*223*	*0*	*0*	*206*	*68*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*58*	*0*	*160*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.79*	*1.00*	*0.79*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*73*	*0*	*202*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*98*						*275*	
C (m) (vph)	*1301*						*633*	
v/c	*0.08*						*0.43*	
95% queue length	*0.24*						*2.20*	
Control Delay	*8.0*						*15.0-*	
LOS	*A*						*B*	
Approach Delay	--	--				*15.0-*		
Approach LOS	--	--				*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*New Jersey Ave at I St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Total)*
Analysis Time Period	*PM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*I Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*200*	*217*	*0*	*0*	*166*	*47*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*1.00*	*1.00*	*0.75*	*0.75*
Hourly Flow Rate, HFR	*232*	*252*	*0*	*0*	*221*	*62*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*75*	*0*	*167*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.81*	*1.00*	*0.81*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*92*	*0*	*206*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*232*						*298*	
C (m) (vph)	*1291*						*455*	
v/c	*0.18*						*0.65*	
95% queue length	*0.65*						*4.61*	
Control Delay	*8.4*						*26.7*	
LOS	*A*						*D*	
Approach Delay	–	–					*26.7*	
Approach LOS	–	–					*D*	

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I-2

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at K St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Total)*
Analysis Time Period	*AM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*K Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*4*	*267*	*30*	*70*	*219*	*3*
Peak-Hour Factor, PHF	*0.85*	*0.85*	*0.85*	*0.66*	*0.66*	*0.66*
Hourly Flow Rate, HFR	*4*	*314*	*35*	*106*	*331*	*4*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*12*	*47*	*96*	*7*	*14*	*5*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.46*	*0.46*	*0.46*
Hourly Flow Rate, HFR	*13*	*51*	*104*	*15*	*30*	*10*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*4*	*106*		*168*			*55*	
C (m) (vph)	*1236*	*1221*		*411*			*239*	
v/c	*0.00*	*0.09*		*0.41*			*0.23*	
95% queue length	*0.01*	*0.28*		*1.95*			*0.86*	
Control Delay	*7.9*	*8.2*		*19.7*			*24.5*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay	--	--	*19.7*			*24.5*		
Approach LOS	--	--	*C*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at K St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Total)*
Analysis Time Period	*PM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*K Street, S.E.*	North/South Street:	*New Jersey Avenue, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*5*	*318*	*40*	*74*	*250*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*5*	*334*	*42*	*78*	*265*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*7*	*33*	*99*	*15*	*19*	*6*
Peak-Hour Factor, PHF	*0.73*	*0.73*	*0.73*	*0.77*	*0.77*	*0.77*
Hourly Flow Rate, HFR	*9*	*45*	*135*	*19*	*24*	*7*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*5*	*78*		*189*			*50*	
C (m) (vph)	*1299*	*1194*		*495*			*252*	
v/c	*0.00*	*0.07*		*0.38*			*0.20*	
95% queue length	*0.01*	*0.21*		*1.77*			*0.72*	
Control Delay	*7.8*	*8.2*		*16.7*			*22.8*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay	--	--	*16.7*			*22.8*		
Approach LOS	--	--	*C*			*C*		

>

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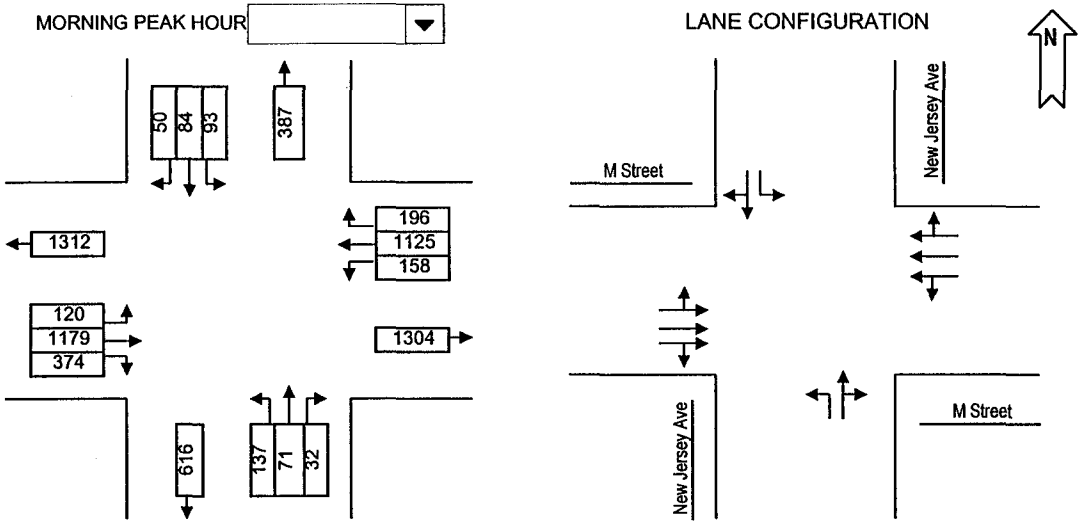
CRITICAL LANE VOLUME CAPACITY ANALYSIS

ORGA
O.R. George & Associates, Inc

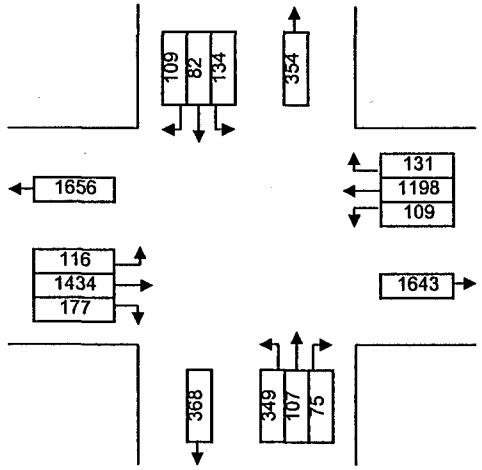
CONDITION: Total - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at New Jersey Avenue, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION



EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.60

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
NBTR+SBL	32	71	0	0	103	1.00	103	93	196	☐
										☐
SBTR+NBL	50	84	0	0	134	1.00	134	137	271	☑
										☐
EBRTL+WBL	374	1179	5	120	2153	0.40	861	158	1019	☑
										☐
WBRTL+EBL	196	1125	5	158	2111	0.40	844	120	964	☐
										☐

Remarks:

☑ Critical Volume — Total CLV: 1290 — V/C
V/C = CLV / 1600 — LOS: C — 0.81

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
NBTR+SBL	75	107	0	0	182	1.00	182	134	316	☐
										☐
SBTR+NBL	109	82	0	0	191	1.00	191	349	540	☑
										☐
EBRTL+WBL	177	1434	5	116	2191	0.40	876	109	985	☑
										☐
WBRTL+EBL	131	1198	5	109	1874	0.40	750	116	866	☐
										☐

Remarks:

☑ Critical Volume — Total CLV: 1525 — V/C
V/C = CLV / 1600 — LOS: E — 0.95

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*New Jersey Ave at M St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*02/12/2003*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Development*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LTR*		*DefL*	*TR*			*LTR*		*DefL*	*TR*	
Volume, V (vph)	*120*	*1179*	*374*	*158*	*1125*	*196*	*137*	*71*	*32*	*93*	*84*	*50*
% Heavy vehicles, %HV	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Pretimed (P) or actuated (A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*		*2.0*	*2.0*			*2.0*		*2.0*	*2.0*	
Extension of effective green, e		*2.0*		*2.0*	*2.0*			*2.0*		*2.0*	*2.0*	
Arrival type, AT		*3*		*3*	*3*			*3*		*3*	*3*	
Unit extension, UE		*3.0*		*3.0*	*3.0*			*3.0*		*3.0*	*3.0*	
Filtering/metering, I		*1.000*		*1.000*	*1.000*			*1.000*		*1.000*	*1.000*	
Initial unmet demand, Q_b		*0.0*		*0.0*	*0.0*			*0.0*		*0.0*	*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*		*12.0*	*12.0*			*12.0*		*12.0*	*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*		*0*	*0*			*0*		*0*	*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*			*3.2*		

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *48.0*	G =	G =	G =	G = *25.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*					Cycle Length, C = *80.0*			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1859*		*176*	*1468*			*267*		*103*	*149*	
Lane group capacity, c		*2091*		*95*	*2118*			*401*		*349*	*560*	
v/c ratio, X		*0.89*		*1.85*	*0.69*			*0.67*		*0.30*	*0.27*	
		0.60		*0.60*	*0.60*			*0.31*		*0.31*	*0.31*	

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Total green ratio, g/C												
Uniform delay, d_1		13.7		16.0	11.0			23.9		20.8	20.6	
Progression factor, PF		1.000		1.000	1.000			1.000		1.000	1.000	
Delay calibration, k		0.50		0.50	0.50			0.50		0.50	0.50	
Incremental delay, d_2		6.1		421.2	1.9			8.5		2.1	1.2	
Initial queue delay, d_3												
Control delay		19.9		437.2	12.8			32.3		23.0	21.8	
Lane group LOS		B		F	B			C		C	C	
Approach delay	19.9			58.3			32.3			22.3		
Approach LOS	B			E			C			C		
Intersection delay	36.5						Intersection LOS			D		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	New Jersey Ave at M St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	02/12/2003	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Total)
		Project ID	Arthur Capper Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	2	0	0	2	0
Lane group		LTR			LTR		DefL	TR		DefL	TR	
Volume, V (vph)	116	1434	177	109	1198	131	349	107	75	134	82	109
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0			2.0		2.0	2.0		2.0	2.0	
Extension of effective green, e		2.0			2.0		2.0	2.0		2.0	2.0	
Arrival type, AT		3			3		3	3		3	3	
Unit extension, UE		3.0			3.0		3.0	3.0		3.0	3.0	
Filtering/metering, I		1.000			1.000		1.000	1.000		1.000	1.000	
Initial unmet demand, Q_b		0.0			0.0		0.0	0.0		0.0	0.0	
Ped / Bike / RTOR volumes	0		0	0		0	0		0	0		0
Lane width		12.0			12.0		12.0	12.0		12.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0		0	0		0	0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 48.0	G =	G =	G =	G = 25.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1919			1598		388	202		149	212	
Lane group capacity, c		2089			2031		365	557		371	543	
v/c ratio, X		0.92			0.79		1.06	0.36		0.40	0.39	
		0.60			0.60		0.31	0.31		0.31	0.31	

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Total green ratio, g/C												
Uniform delay, d_1		14.3			12.1		27.5	21.3		21.6	21.5	
Progression factor, PF		1.000			1.000		1.000	1.000		1.000	1.000	
Delay calibration, k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental delay, d_2		8.0			3.2		64.8	1.8		3.2	2.1	
Initial queue delay, d_3												
Control delay		22.2			15.3		92.3	23.1		24.8	23.6	
Lane group LOS		C			B		F	C		C	C	
Approach delay	22.2			15.3			68.6			24.1		
Approach LOS	C			B			E			C		
Intersection delay	26.0						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 3rd St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Lane group	*DefL*	*T*			*TR*						*LR*	
Volume, V (vph)	*135*	*997*			*1509*	*63*				*124*		*59*
% Heavy vehicles, %HV	*0*	*0*			*0*	*0*				*0*		*0*
Peak-hour factor, PHF	*0.90*	*0.90*			*0.90*	*0.90*				*0.90*		*0.90*
Pretimed (P) or actuated (A)	*P*	*P*			*P*	*P*				*P*		*P*
Start-up lost time, l_1	*2.0*	*2.0*			*2.0*						*2.0*	
Extension of effective green, e	*2.0*	*2.0*			*2.0*						*2.0*	
Arrival type, AT	*3*	*3*			*3*						*3*	
Unit extension, UE	*3.0*	*3.0*			*3.0*						*3.0*	
Filtering/metering, I	*1.000*	*1.000*			*1.000*						*1.000*	
Initial unmet demand, Q_b	*0.0*	*0.0*			*0.0*						*0.0*	
Ped / Bike / RTOR volumes				*0*		*0*	*0*			*0*		*0*
Lane width	*12.0*	*12.0*			*12.0*						*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B	*0*	*0*			*0*						*0*	
Min. time for pedestrians, G_p				*3.2*			*3.2*			*3.2*		

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = *51.0*	G =	G =	G =	G = *22.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v	*150*	*1108*			*1747*						*204*	
Lane group capacity, c	*115*	*2301*			*3287*						*483*	
v/c ratio, X	*1.30*	*0.48*			*0.53*						*0.42*	
Total green ratio, g/C	*0.64*	*0.64*			*0.64*						*0.28*	
Uniform delay, d_1	*14.5*	*7.6*			*7.9*						*23.8*	

I-10

Progression factor, PF	1.000	1.000			1.000						1.000	
Delay calibration, k	0.50	0.50			0.50						0.50	
Incremental delay, d_2	186.3	0.7			0.6						2.7	
Initial queue delay, d_3												
Control delay	200.8	8.3			8.6						26.5	
Lane group LOS	F	A			A						C	
Approach delay	31.3			8.6				26.5				
Approach LOS	C			A				C				
Intersection delay	18.6						Intersection LOS	B				

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 3rd St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Lane group		*LT*			*TR*						*LR*	
Volume, V (vph)	*146*	*1475*			*1349*	*114*				*78*		*42*
% Heavy vehicles, %HV	*0*	*0*			*0*	*0*				*0*		*0*
Peak-hour factor, PHF	*0.90*	*0.90*			*0.90*	*0.90*				*0.90*		*0.90*
Pretimed (P) or actuated (A)	*P*	*P*			*P*	*P*				*P*		*P*
Start-up lost time, l_1		*2.0*			*2.0*						*2.0*	
Extension of effective green, e		*2.0*			*2.0*						*2.0*	
Arrival type, AT		*3*			*3*						*3*	
Unit extension, UE		*3.0*			*3.0*						*3.0*	
Filtering/metering, I		*1.000*			*1.000*						*1.000*	
Initial unmet demand, Q_b		*0.0*			*0.0*						*0.0*	
Ped / Bike / RTOR volumes				*0*		*0*	*0*			*0*		*0*
Lane width		*12.0*			*12.0*						*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*			*0*						*0*	
Min. time for pedestrians, G_p				*3.2*			*3.2*			*3.2*		

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = *51.0*	G =	G =	G =	G = *22.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1801*			*1626*						*134*	
Lane group capacity, c		*2160*			*3268*						*482*	
v/c ratio, X		*0.83*			*0.50*						*0.28*	
Total green ratio, g/C		*0.64*			*0.64*						*0.28*	
Uniform delay, d_1		*11.2*			*7.7*						*22.8*	

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Progression factor, PF		1.000			1.000						1.000	
Delay calibration, k		0.50			0.50						0.50	
Incremental delay, d_2		4.0			0.5						1.4	
Initial queue delay, d_3												
Control delay		15.2			8.2						24.2	
Lane group LOS		B			A						C	
Approach delay	15.2			8.2					24.2			
Approach LOS	B			A					C			
Intersection delay	12.4						Intersection LOS		B			

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CRITICAL LANE VOLUME CAPACITY ANALYSIS

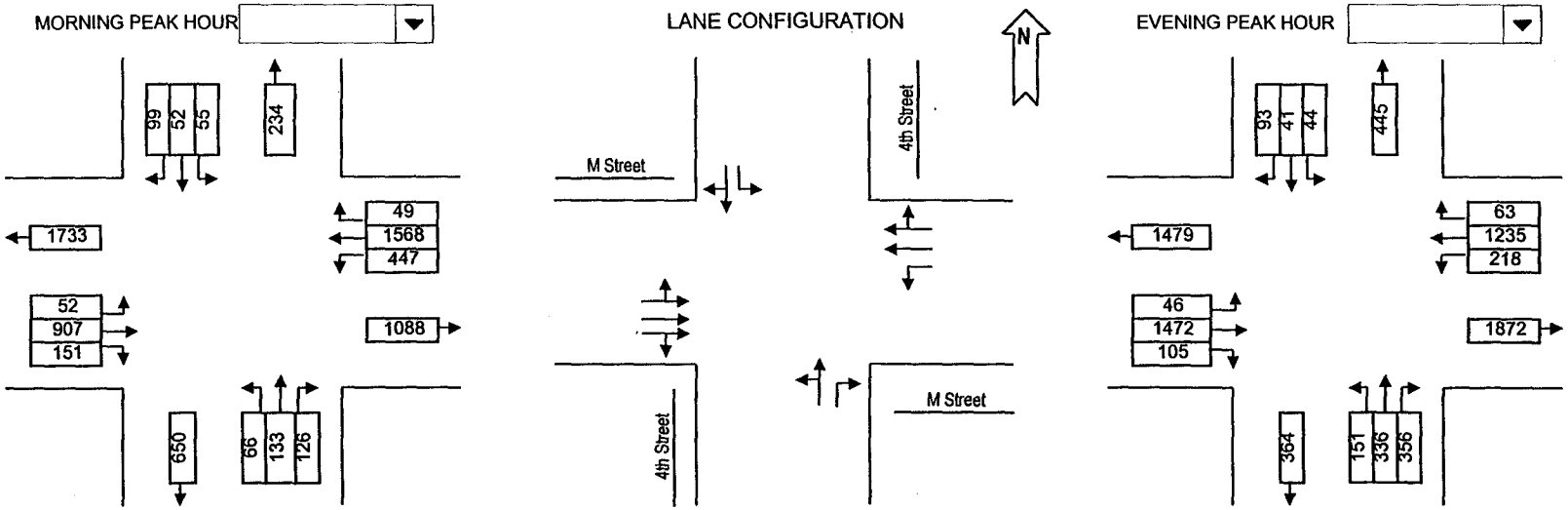
ORGA
O.R. George & Associates, Inc

CONDITION: Total - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 4th Street, SE, Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION

EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.60

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
NBTL+SBL	0	133	1	66	206	1.00	206	55	261	☑
										☐
SBTR+NBL	99	52	0	0	151	1.00	151	66	217	☐
										☐
EBRTL+WBL	151	907	5	52	1318	0.40	527	447	974	☑
										☐
WBTR+EBL	49	1568	0	0	1617	0.55	889	52	941	☐
										☐

Remarks:

☑ Critical Volume — Total CLV: 1235 — V/C
V/C = CLV / 1600 — LOS: C — 0.77

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
NBTL+SBL	0	336	1	151	502	1.00	502	44	546	☑
										☐
SBTR+NBL	93	41	0	0	134	1.00	134	151	285	☐
										☐
EBRTL+WBL	105	1472	5	46	1702	0.40	681	218	899	☑
										☐
WBTR+EBL	63	1235	0	0	1298	0.55	714	46	760	☐
										☐

Remarks:

☑ Critical Volume — Total CLV: 1445 — V/C
V/C = CLV / 1600 — LOS: D — 0.90

H1-I

HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 4th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*02/12/2003*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Development*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LTR*		*DefL*	*TR*			*LTR*			*LTR*	
Volume, V (vph)	*52*	*907*	*151*	*447*	*1568*	*49*	*66*	*133*	*126*	*55*	*52*	*99*
% Heavy vehicles, %HV	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Pretimed (P) or actuated (A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*		*2.0*	*2.0*			*2.0*			*2.0*	
Extension of effective green, e		*2.0*		*2.0*	*2.0*			*2.0*			*2.0*	
Arrival type, AT		*3*		*3*	*3*			*3*			*3*	
Unit extension, UE		*3.0*		*3.0*	*3.0*			*3.0*			*3.0*	
Filtering/metering, I		*1.000*		*1.000*	*1.000*			*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*		*0.0*	*0.0*			*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*		*12.0*	*12.0*			*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*		*0*	*0*			*0*			*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*			*3.2*		

Phasing	WB Only	EW Perm	03	04	NS Perm	06	07	08
Timing	G = *18.0*	G = *32.0*	G =	G =	G = *20.0*	G =	G =	G =
	Y =	Y = *4*	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1234*		*497*	*1796*			*361*			*229*	
Lane group capacity, c		*1560*		*486*	*1947*			*359*			*688*	
v/c ratio, X		*0.79*		*1.02*	*0.92*			*1.01*			*0.33*	
Total green ratio, g/C		*0.40*		*0.21*	*0.66*			*0.25*			*0.25*	

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Uniform delay, d_1		21.1		22.0	11.7			30.0			24.5	
Progression factor, PF		1.000		1.000	1.000			1.000			1.000	
Delay calibration, k		0.50		0.50	0.50			0.50			0.50	
Incremental delay, d_2		4.2		46.7	8.8			48.9			1.3	
Initial queue delay, d_3												
Control delay		25.2		68.7	20.5			78.9			25.8	
Lane group LOS		C		E	C			E			C	
Approach delay	25.2			30.9			78.9			25.8		
Approach LOS	C			C			E			C		
Intersection delay	33.2						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	M St at 4th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	02/12/2003	Jurisdiction	District of Columbia
Time Period	PM Peak	Analysis Year	2007 (Projected Total)
		Project ID	Arthur Capper Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	2	0	0	2	0
Lane group		LTR		DefL	TR			LTR			LTR	
Volume, V (vph)	46	1472	105	218	1235	63	151	336	356	44	41	93
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0		2.0	2.0			2.0			2.0	
Extension of effective green, e		2.0		2.0	2.0			2.0			2.0	
Arrival type, AT		3		3	3			3			3	
Unit extension, UE		3.0		3.0	3.0			3.0			3.0	
Filtering/metering, I		1.000		1.000	1.000			1.000			1.000	
Initial unmet demand, Q_b		0.0		0.0	0.0			0.0			0.0	
Ped / Bike / RTOR volumes	0		0	0		0	0		0	0		0
Lane width		12.0		12.0	12.0			12.0			12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0		0	0			0			0	
Min. time for pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 10.0	G = 34.0	G =	G =	G = 26.0	G =	G =	G =
	Y =	Y = 4	Y =	Y =	Y = 3	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		1804		242	1442			937			198	
Lane group capacity, c		1830		298	1431			917			703	
v/c ratio, X		0.99		0.81	1.01			1.02			0.28	
Total green ratio, g/C		0.43		0.11	0.59			0.32			0.32	

I-M

Uniform delay, d_1		22.8		17.8	16.5			27.0			20.1	
Progression factor, PF		1.000		1.000	1.000			1.000			1.000	
Delay calibration, k		0.50		0.50	0.50			0.50			0.50	
Incremental delay, d_2		17.9		20.9	25.7			35.3			1.0	
Initial queue delay, d_3												
Control delay		40.7		38.8	42.2			62.3			21.1	
Lane group LOS		D		D	D			E			C	
Approach delay	40.7			41.7			62.3			21.1		
Approach LOS	D			D			E			C		
Intersection delay	44.6						Intersection LOS			D		

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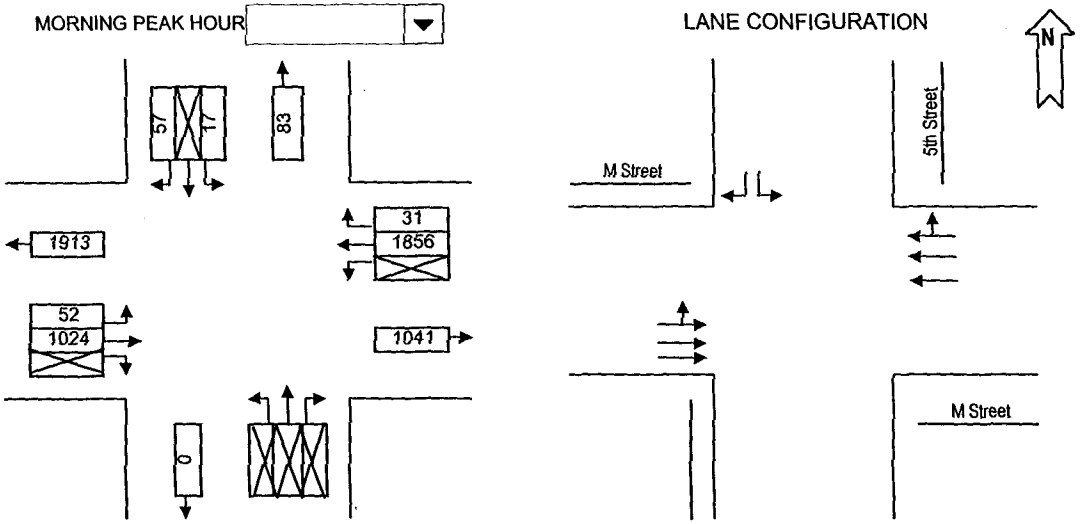
CRITICAL LANE VOLUME CAPACITY ANALYSIS

ORGA
O. R. George & Associates, Inc

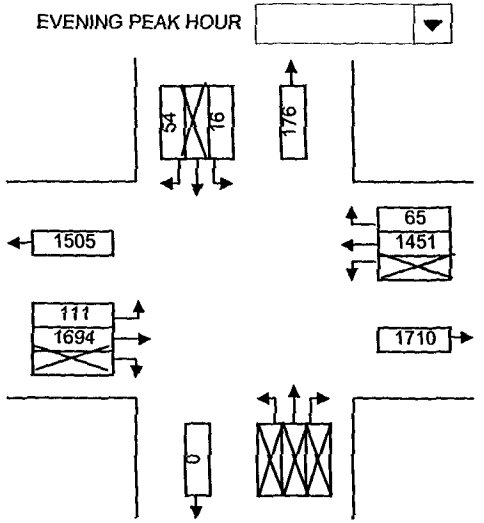
CONDITION: Total - Weekday
COMPUTED BY: ORGA
DATE: 3/7/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 5th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION



EVENING PEAK HOUR



Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.60

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
										☐
										☐
SBL	0	0	0	17	17	1.00	17	0	17	☑
SBR	57-52	0	0	0	5	1.00	5	0	5	☐
EBTL	0	1024	5	52	1284	0.40	514	0	514	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	31	1856	0	0	1887	0.40	755	52	807	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 824 — V/C

V/C = CLV / 1600 — LOS A — 0.51

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
										☐
										☐
SBL	0	0	0	16	16	1.00	16	0	16	☑
SBR	54-111	0	0	0	-57	1.00	-57	0	-57	☐
EBTL	0	1694	5	111	2249	0.40	900	0	900	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	65	1451	0	0	1516	0.40	606	111	717	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 916 — V/C

V/C = CLV / 1600 — LOS A — 0.57

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ORGA

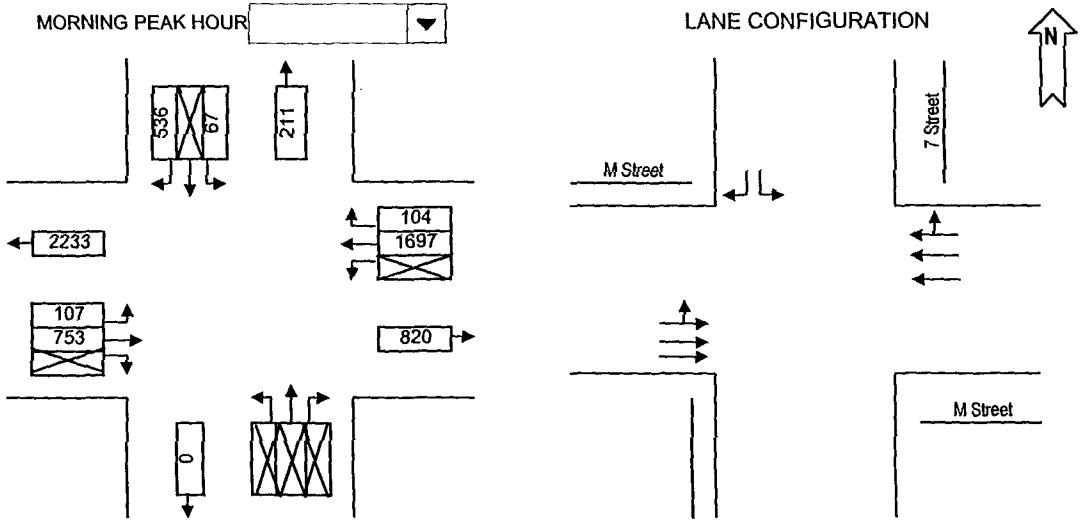
O.R. George & Associates, Inc

CRITICAL LANE VOLUME CAPACITY ANALYSIS

CONDITION: Total - Weekday
COMPUTED BY: ORGA
DATE: 2/13/03
DESIGN YEAR: 2007
LOCATION: M Street, SE at 7th Street, SE Washington, DC

MORNING PEAK HOUR

LANE CONFIGURATION



EVENING PEAK HOUR

Phasing (ϕ)

Intersection Control: Signal ☐ Stop ☑ Ways ☐

RTOR: NB ☐ SB ☐ EB ☐ WB ☐

Washington D.C.

No. of Lanes	Lane Use Factor
1	= 1.00
2	= 0.55
3	= 0.40
4	= 0.30
Dble. L.T.	= 0.55

Service Levels	Critical Lane Vol. Total
A =	≤ 1,000
B =	1,001 — 1,150
C =	1,151 — 1,300
D =	1,301 — 1,450
E =	1,451 — 1,600
F =	> 1,600

Opposing T+R Volume (Vph)	PCE
≤ 199	1.1
≤ 599	2.0
≤ 799	3.0
≤ 999	4.0
≥ 1000	5.0

ϕ Morning Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	67	0	1.00	67	0	67	☐
SBR	429	0	0	0	429	1.00	429	0	429	☑
EBTL	0	753	5	107	1288	0.40	515	0	515	☐
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	104	1697	0	0	1801	0.40	720	107	827	☑
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 1256 — V/C

V/C = CLV / 1600 — LOS C — 0.79

ϕ Evening Movement	Right	Thru	PCE	Left	Volume (1)	Lane Factor (2)	Lane Volume (1)X(2)	Oppo-sing Lefts		Critical Lane Volume
	0	0	0	0	0	0.00	0	0	0	☐
	0	0	0	0	0	0.00	0	0	0	☐
SBL	0	0	0	42	42	1.00	42	0	42	☑
SBR	219-34	0	0	0	-122	1.00	-122	0	-122	☐
EBTL	0	1670	5	341	3375	0.40	1350	0	1350	☑
	0	0	0	0	0	0.00	0	0	0	☐
WBTR+EBL	314	1099	0	0	1413	0.40	565	341	906	☐
	0	0	0	0	0	1.00	0	0	0	☐

Remarks:

☑ Critical Volume — Total CLV 1392 — V/C

V/C = CLV / 1600 — LOS D — 0.87

HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	Alvin Powell	Intersection	M St at 8th St
Agency or Co.	ORGA	Area Type	All other areas
Date Performed	1/23/03	Jurisdiction	District of Columbia
Time Period	AM Peak	Analysis Year	2007 (Projected Total)
		Project ID	Arthur Capper

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	3	0	0	3	0	0	0	0	1	1	1
Lane group		T			TR			LR		L	LTR	R
Volume, V (vph)		855			1503	0	2		1	657	3	268
% Heavy vehicles, %HV		0			0	0	0		0	0	0	0
Peak-hour factor, PHF		0.87			0.88	0.88	0.75		0.75	0.93	0.93	0.93
Pretimed (P) or actuated (A)		P			P	P	P		P	P	P	P
Start-up lost time, l_1		2.0			2.0			2.0		2.0	2.0	2.0
Extension of effective green, e		2.0			2.0			2.0		2.0	2.0	2.0
Arrival type, AT		3			3			3		3	3	3
Unit extension, UE		3.0			3.0			3.0		3.0	3.0	3.0
Filtering/metering, I		1.000			1.000			1.000		1.000	1.000	1.000
Initial unmet demand, Q_b		0.0			0.0			0.0		0.0	0.0	0.0
Ped / Bike / RTOR volumes				0		0	0		0	0		0
Lane width		12.0			12.0			12.0		12.0	12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0			0			0		0	0	0
Min. time for pedestrians,				3.2			3.2			3.2		

Phasing	Thru & RT	02	03	04	NS Perm	06	07	08
Timing	G = 36.0	G =	G =	G =	G = 37.0	G =	G =	G =
	Y = 3	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		983			1708			4		706	3	288
Lane group capacity, c		2334			2334			661		835	879	747
v/c ratio, X		0.42			0.73			0.01		0.85	0.00	0.39
Total green ratio, g/C		0.45			0.45			0.46		0.46	0.46	0.46
Uniform delay, d_1		14.9			18.0			11.6		19.0	11.6	14.1

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Progression factor, PF		1.000			1.000			1.000		1.000	1.000	1.000
Delay calibration, k		0.50			0.50			0.50		0.50	0.50	0.50
Incremental delay, d_2		0.6			2.1			0.0		10.3	0.0	1.5
Initial queue delay, d_3												
Control delay		15.5			20.1			11.6		29.3	11.6	15.6
Lane group LOS		B			C			B		C	B	B
Approach delay	15.5			20.1			11.6			25.2		
Approach LOS	B			C			B			C		
Intersection delay	20.3						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*M St at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*1*	*1*	*1*
Lane group		*T*			*TR*			*LR*		*L*	*LTR*	*R*
Volume, V (vph)		*1716*			*1137*	*0*	*1*		*2*	*383*	*1*	*160*
% Heavy vehicles, %HV		*0*			*0*	*0*	*0*		*0*	*0*	*0*	*0*
Peak-hour factor, PHF		*0.88*			*0.95*	*0.95*	*0.38*		*0.38*	*0.86*	*0.86*	*0.86*
Pretimed (P) or actuated (A)		*P*			*P*	*P*	*P*		*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	*2.0*
Extension of effective green, e		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	*2.0*
Arrival type, AT		*3*			*3*			*3*		*3*	*3*	*3*
Unit extension, UE		*3.0*			*3.0*			*3.0*		*3.0*	*3.0*	*3.0*
Filtering/metering, I		*1.000*			*1.000*			*1.000*		*1.000*	*1.000*	*1.000*
Initial unmet demand, Q_b		*0.0*			*0.0*			*0.0*		*0.0*	*0.0*	*0.0*
Ped / Bike / RTOR volumes				*0*		*0*	*0*		*0*	*0*		*0*
Lane width		*12.0*			*12.0*			*12.0*		*12.0*	*12.0*	*12.0*
Parking / Grade / Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*			*0*			*0*		*0*	*0*	*0*
Min. time for pedestrians,				*3.2*			*3.2*			*3.2*		

Phasing	Thru & RT	02	03	04	NS Perm	06	07	08
Timing	G = *36.0*	G =	G =	G =	G = *37.0*	G =	G =	G =
	Y = *3*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*					Cycle Length, C = *80.0*			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1950*			*1197*			*8*		*445*	*1*	*186*
Lane group capacity, c		*2334*			*2334*			*705*		*835*	*879*	*747*
v/c ratio, X		*0.84*			*0.51*			*0.01*		*0.53*	*0.00*	*0.25*
Total green ratio, g/C		*0.45*			*0.45*			*0.46*		*0.46*	*0.46*	*0.46*
Uniform delay, d_1		*19.4*			*15.7*			*11.6*		*15.3*	*11.6*	*13.1*

I-23

Progression factor, PF		1.000			1.000			1.000		1.000	1.000	1.000
Delay calibration, k		0.50			0.50			0.50		0.50	0.50	0.50
Incremental delay, d_2		3.7			0.8			0.0		2.4	0.0	0.8
Initial queue delay, d_3												
Control delay		23.1			16.5			11.6		17.8	11.6	13.9
Lane group LOS		C			B			B		B	B	B
Approach delay	23.1			16.5			11.6			16.6		
Approach LOS	C			B			B			B		
Intersection delay	19.9						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	*Virginia Ave at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*1*	*0*
Lane group		*LTR*						*TR*		*L*	*TR*	
Volume, V (vph)	*163*	*18*	*548*					*101*	*9*	*94*	*418*	*0*
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.87*	*0.87*	*0.87*					*0.87*	*0.87*	*0.86*	*0.86*	*0.86*
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*						*2.0*		*2.0*	*2.0*	
Extension of effective green, e		*2.0*						*2.0*		*2.0*	*2.0*	
Arrival type, AT		*3*						*3*		*3*	*3*	
Unit extension, UE		*3.0*						*3.0*		*3.0*	*3.0*	
Filtering/metering, I		*1.000*						*1.000*		*1.000*	*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*		*0.0*	*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*	*0*		*0*
Lane width		*12.0*						*12.0*		*12.0*	*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*		*0*	*0*	
Min. time for pedestrians, G_p	*3.2*			*3.2*			*3.2*			*3.2*		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *35.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*838*						*126*		*109*	*486*	
Lane group capacity, c		*1465*						*823*		*532*	*831*	
v/c ratio, X		*0.57*						*0.15*		*0.20*	*0.58*	
Total green ratio, g/C		*0.46*						*0.44*		*0.44*	*0.44*	
Uniform delay, d_1		*15.7*						*13.6*		*13.9*	*17.0*	

I-15

Progression factor, PF		1.000						1.000		1.000	1.000	
Delay calibration, k		0.50						0.50		0.50	0.50	
Incremental delay, d_2		1.6						0.4		0.9	3.0	
Initial queue delay, d_3												
Control delay		17.3						14.0		14.8	20.0+	
Lane group LOS		B						B		B	C	
Approach delay	17.3						14.0			19.1		
Approach LOS	B						B			B		
Intersection delay	17.7						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	*Virginia Ave at 8th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*1*	*0*
Lane group		*LTR*						*TR*		*L*	*T*	
Volume, V (vph)	*524*	*14*	*202*					*269*	*44*	*352*	*304*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.85*	*0.85*	*0.85*					*0.74*	*0.74*	*0.97*	*0.97*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	*P*
Start-up lost time, l_1		*2.0*						*2.0*		*2.0*	*2.0*	
Extension of effective green, e		*2.0*						*2.0*		*2.0*	*2.0*	
Arrival type, AT		*3*						*3*		*3*	*3*	
Unit extension, UE		*3.0*						*3.0*		*3.0*	*3.0*	
Filtering/metering, I		*1.000*						*1.000*		*1.000*	*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*		*0.0*	*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*		*12.0*	*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*		*0*	*0*	
Min. time for pedestrians, G_p		*3.2*			*3.2*			*3.2*				

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *35.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*870*						*423*		*363*	*313*	
Lane group capacity, c		*1546*						*816*		*296*	*831*	
v/c ratio, X		*0.56*						*0.52*		*1.23*	*0.38*	
Total green ratio, g/C		*0.46*						*0.44*		*0.44*	*0.44*	
Uniform delay, d_1		*15.6*						*16.4*		*22.5*	*15.2*	

I-27

Progression factor, PF		1.000						1.000		1.000	1.000	
Delay calibration, k		0.50						0.50		0.50	0.50	
Incremental delay, d_2		1.5						2.3		128.1	1.3	
Initial queue delay, d_3												
Control delay		17.1						18.7		150.6	16.5	
Lane group LOS		B						B		F	B	
Approach delay	17.1						18.7			88.5		
Approach LOS	B						B			F		
Intersection delay	42.0						Intersection LOS			D		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 7th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Lane group		*LTR*						*TR*			*LT*	
Volume, V (vph)	*94*	*587*	*516*					*118*	*35*	*15*	*172*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.84*	*0.84*	*0.84*					*0.80*	*0.80*	*0.73*	*0.73*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p		*3.2*			*3.2*			*3.2*				

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *36.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =

Duration of Analysis, T = *0.25* | Cycle Length, C = *80.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1425*						*191*			*257*	
Lane group capacity, c		*2235*						*828*			*832*	
v/c ratio, X		*0.64*						*0.23*			*0.31*	
Total green ratio, g/C		*0.46*						*0.45*			*0.45*	
Uniform delay, d_1		*16.4*						*13.5*			*14.1*	

I-29

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		1.4						0.7			1.0	
Initial queue delay, d_3												
Control delay		17.8						14.2			15.0	
Lane group LOS		B						B			B	
Approach delay	17.8						14.2			15.0		
Approach LOS	B						B			B		
Intersection delay	17.0						Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 7th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*3*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Lane group		*LTR*						*TR*			*LT*	
Volume, V (vph)	*108*	*602*	*180*					*467*	*67*	*14*	*120*	
% Heavy vehicles, %HV	*0*	*0*	*0*					*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.84*	*0.84*	*0.84*					*0.80*	*0.80*	*0.73*	*0.73*	
Pretimed (P) or actuated (A)	*P*	*P*	*P*					*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes	*0*		*0*	*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p		*3.2*			*3.2*			*3.2*				

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = *37.0*	G =	G =	G =	G = *36.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y =	Y =	Y =
Duration of Analysis, T = *0.25*						Cycle Length, C = *80.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*1060*						*668*			*183*	
Lane group capacity, c		*2313*						*841*			*793*	
v/c ratio, X		*0.46*						*0.79*			*0.23*	
Total green ratio, g/C		*0.46*						*0.45*			*0.45*	
Uniform delay, d_1		*14.7*						*18.8*			*13.5*	

I-31

Progression factor, PF		*1.000*						*1.000*			*1.000*	
Delay calibration, k		*0.50*						*0.50*			*0.50*	
Incremental delay, d_2		*0.7*						*7.6*			*0.7*	
Initial queue delay, d_3												
Control delay		*15.3*						*26.5*			*14.2*	
Lane group LOS		*B*						*C*			*B*	
Approach delay	*15.3*						*26.5*			*14.2*		
Approach LOS	*B*						*C*			*B*		
Intersection delay	*19.1*						Intersection LOS			*B*		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 5th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*AM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LT*						*TR*			*LT*	
Volume, V (vph)	*26*	*50*						*156*	*69*	*194*	*1213*	
% Heavy vehicles, %HV	*0*	*0*						*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.77*	*0.77*						*0.83*	*0.83*	*0.90*	*0.90*	
Pretimed (P) or actuated (A)	*P*	*P*						*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes				*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p				*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = *15.0*	G =	G =	G =	G = *15.0*	G = *40.0*	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y = *3*	Y =	Y =

Duration of Analysis, T = *0.25* | Cycle Length, C = *80.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*99*						*271*			*1564*	
Lane group capacity, c		*665*						*341*			*1793*	
v/c ratio, X		*0.15*						*0.79*			*0.87*	
Total green ratio, g/C		*0.19*						*0.19*			*0.50*	
Uniform delay, d_1		*27.2*						*31.0*			*17.7*	

I-33

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		0.5						17.2			6.2	
Initial queue delay, d_3												
Control delay		27.6						48.3			23.9	
Lane group LOS		C						D			C	
Approach delay	27.6						48.3			23.9		
Approach LOS	C						D			C		
Intersection delay	27.5						Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	*Alvin Powell*	Intersection	*Virginia Ave at 5th St*
Agency or Co.	*ORGA*	Area Type	*All other areas*
Date Performed	*1/23/03*	Jurisdiction	*District of Columbia*
Time Period	*PM Peak*	Analysis Year	*2007 (Projected Total)*
		Project ID	*Arthur Capper Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*2*	*0*
Lane group		*LT*						*TR*			*LT*	
Volume, V (vph)	*48*	*210*						*267*	*94*	*140*	*623*	
% Heavy vehicles, %HV	*0*	*0*						*0*	*0*	*0*	*0*	
Peak-hour factor, PHF	*0.84*	*0.92*						*0.69*	*0.69*	*0.90*	*0.90*	
Pretimed (P) or actuated (A)	*P*	*P*						*P*	*P*	*P*	*P*	
Start-up lost time, l_1		*2.0*						*2.0*			*2.0*	
Extension of effective green, e		*2.0*						*2.0*			*2.0*	
Arrival type, AT		*3*						*3*			*3*	
Unit extension, UE		*3.0*						*3.0*			*3.0*	
Filtering/metering, I		*1.000*						*1.000*			*1.000*	
Initial unmet demand, Q_b		*0.0*						*0.0*			*0.0*	
Ped / Bike / RTOR volumes				*0*			*0*		*0*			
Lane width		*12.0*						*12.0*			*12.0*	
Parking / Grade / Parking	*N*	*0*	*N*	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking maneuvers, N_m												
Buses stopping, N_B		*0*						*0*			*0*	
Min. time for pedestrians, G_p				*3.2*			*3.2*					

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = *18.0*	G =	G =	G =	G = *26.0*	G = *26.0*	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *3*	Y = *3*	Y =	Y =

Duration of Analysis, T = *0.25* Cycle Length, C = *80.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		*285*						*523*			*848*	
Lane group capacity, c		*804*						*596*			*1163*	
v/c ratio, X		*0.35*						*0.88*			*0.73*	
Total green ratio, g/C		*0.22*						*0.32*			*0.32*	
Uniform delay, d_1		*26.1*						*25.5*			*23.9*	

I-35

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		1.2						16.6			4.0	
Initial queue delay, d_3												
Control delay		27.3						42.1			27.9	
Lane group LOS		C						D			C	
Approach delay	27.3						42.1			27.9		
Approach LOS	C						D			C		
Intersection delay	32.3						Intersection LOS			C		

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Alvin Powell*
Agency/Co.	*ORGA*
Date Performed	*1/23/03*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*Virginia Ave at 4th St*
Jurisdiction	*District of Columbia*
Analysis Year	*2007 (Projected Total)*

Project ID *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* North/South Street: *4th Street, S.E.*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*0*	*27*	*8*	*0*	*0*	*0*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*26*	*0*	*14*	*17*	*286*	*15*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*TR*				*LR*		*L*	*TR*
PHF	*0.57*				*0.65*		*0.87*	*0.87*
Flow Rate	*61*				*61*		*19*	345
% Heavy Vehicles	*0*				*0*		*0*	*0*
No. Lanes	*1*		*0*		*1*		*2*	
Geometry Group	*1*				*3a*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*				*0.7*		*1.0*	*0.0*
Prop. Right-Turns	*0.2*				*0.3*		*0.0*	*0.0*
Prop. Heavy Vehicle	*0.0*				0.0		*0.0*	*0.0*
hLT-adj	*0.2*	*0.2*			*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*			*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*			*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*4.75*				*4.75*		*4.75*	*4.75*

Departure Headway and Service Time

hd, initial value	*3.20*				*3.20*		*3.20*	*3.20*
x, initial	*0.05*				*0.05*		*0.02*	*0.31*
hd, final value	*4.75*				*4.75*		*4.75*	*4.75*
x, final value	*0.08*				*0.08*		*0.03*	*0.45*
Move-up time, m	*2.0*				*2.0*		*2.3*	
Service Time	*2.7*		*2.7*		*2.7*		*2.7*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*311*				*311*		*269*	*595*
Delay	*8.16*				*7.84*		*8.05*	*11.09*
LOS	*A*				*A*		*A*	*B*
Approach: Delay	*8.16*				*7.84*		*10.93*	
LOS	*A*				*A*		*B*	
Intersection Delay	*10.20*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Alvin Powell*
Agency/Co.	*ORGA*
Date Performed	*1/23/03*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Virginia Ave at 4th St*
Jurisdiction	*District of Columbia*
Analysis Year	*2007 (Projected Total)*

Project ID *Arthur Capper Project*

East/West Street: *Virginia Avenue, S.E.* North/South Street: *4th Street, S.E.*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*0*	*103*	*9*	*0*	*0*	*0*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*21*	*0*	*18*	*75*	*181*	*11*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*TR*				*LR*		*L*	*TR*
PHF	*0.84*				*0.72*		*0.86*	*0.86*
Flow Rate	*132*				*53*		*87*	*222*
% Heavy Vehicles	*0*				*0*		*0*	*0*
No. Lanes	*1*		*0*		*1*		*2*	
Geometry Group	*1*				*3a*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Prop. Left-Turns	*0.0*				*0.5*		*1.0*	*0.0*
Prop. Right-Turns	*0.1*				*0.5*		*0.0*	*0.1*
Prop. Heavy Vehicle	*0.0*				*0.0*		*0.0*	*0.0*
hLT-adj	*0.2*	*0.2*			*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*			*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*			*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*4.69*				*4.69*		*4.69*	*4.69*

Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
hd, initial value	*3.20*				*3.20*		*3.20*	*3.20*
x, initial	*0.12*				*0.05*		*0.08*	*0.20*
hd, final value	*4.69*				*4.69*		*4.69*	*4.69*
x, final value	*0.17*				*0.07*		*0.13*	*0.30*
Move-up time, m	*2.0*				*2.0*		*2.3*	
Service Time	*2.7*		*2.7*		*2.7*		*2.7*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*382*				*303*		*337*	*472*
Delay	*8.66*				*7.84*		*8.89*	*9.60*
LOS	*A*				*A*		*A*	*A*
Approach: Delay	*8.66*				*7.84*		*9.40*	
LOS	*A*				*A*		*A*	
Intersection Delay	*9.03*							
Intersection LOS	*A*							

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*Virginia Ave at 3rd St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Total)*
Analysis Time Period	*AM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*Virginia Avenue, S.E.*	North/South Street:	*3rd Street, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*11*	*306*	*138*	*87*	*315*	*17*
Peak-Hour Factor, PHF	*0.82*	*0.82*	*0.82*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*13*	*373*	*168*	*96*	*350*	*18*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*7*	*11*	*23*	*5*	*12*	*57*
Peak-Hour Factor, PHF	*0.63*	*0.63*	*0.63*	*0.71*	*0.71*	*0.71*
Hourly Flow Rate, HFR	*11*	*17*	*36*	*7*	*16*	*80*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*13*	*96*		*64*			*103*	
C (m) (vph)	*1202*	*1038*		*292*			*416*	
v/c	*0.01*	*0.09*		*0.22*			*0.25*	
95% queue length	*0.03*	*0.30*		*0.82*			*0.96*	
Control Delay	*8.0*	*8.8*		*20.8*			*16.5*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay	–	–	*20.8*			*16.5*		
Approach LOS	–	–	*C*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst		Intersection	*Virginia Ave at 3rd St*
Agency/Co.	*ORGA*	Jurisdiction	*District of Columbia*
Date Performed	*1/23/03*	Analysis Year	*2007 (Projected Total)*
Analysis Time Period	*PM Peak*		
Project Description	*Arthur Capper Project*		
East/West Street:	*Virginia Avenue, S.E.*	North/South Street:	*3rd Street, S.E.*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*504*	*25*	*52*	*115*	*7*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.73*	*0.73*	*0.73*
Hourly Flow Rate, HFR	*10*	*536*	*26*	*71*	*157*	*9*
Percent Heavy Vehicles	*0*	–	–	*0*	–	–
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*6*	*5*	*26*	*35*	*20*	*3*
Peak-Hour Factor, PHF	*0.82*	*0.82*	*0.82*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*7*	*6*	*31*	*48*	*27*	*4*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*10*	*71*		*44*			*79*	
C (m) (vph)	*1424*	*1019*		*397*			*249*	
v/c	*0.01*	*0.07*		*0.11*			*0.32*	
95% queue length	*0.02*	*0.22*		*0.37*			*1.31*	
Control Delay	*7.5*	*8.8*		*15.2*			*26.0*	
LOS	*A*	*A*		*C*			*D*	
Approach Delay	–	–		*15.2*			*26.0*	
Approach LOS	–	–		*C*			*D*	

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