

APPENDIX G

Internal Capture



Table G-1
Site Trip Generation Summary¹

Land Use	ITE Code	Size	Units	AM Peak Hour			PM Peak Hour			Weekday ADT
				IN	OUT	TOTAL	IN	OUT	TOTAL	
Apartment	220	1,800	DU's							
Vehicle Trips				177	709	886	655	353	1,008	10,968
Internal Capture				15	14	29	41	31	72	719
External Trips (Total - Internal)				162	695	857	614	322	936	10,249
Person Trips ²				207	888	1,095	785	411	1,196	13,096
Site Specific External Vehicle Trips ³				127	546	673	483	253	736	8,059
Condominium/Townhouse	230	1,800	DU's							
Vehicle Trips				89	432	521	431	212	643	7,489
Internal Capture				8	8	16	27	19	45	491
External Trips (Total - Internal)				81	424	505	404	193	598	6,998
Person Trips ²				104	541	645	516	247	763	8,942
Site Specific External Vehicle Trips ³				64	333	397	318	152	470	5,503
Supermarket	850	68,300	SF							
Vehicle Trips				135	87	222	352	338	690	6,983
Internal Capture				32	28	60	77	81	159	2,183
External Trips (Total - Internal)				103	59	162	275	257	531	4,800
TDM Reduction				21	12	33	55	51	106	960
External Vehicle Trips (External - Transit)				82	47	129	220	206	425	3,840
Specialty Retail Center	814⁴	34,800	SF							
Vehicle Trips				61	67	128	46	59	105	1,542
Internal Capture				15	21	36	13	19	32	601
External Trips (Total - Internal)				46	46	92	33	40	73	941
TDM Reduction				9	9	18	7	8	15	188
External Vehicle Trips (External - Transit)				37	37	74	26	32	58	753
Shopping Center	820	37,300	SF							
Vehicle Trips				53	34	87	157	170	327	3,577
Internal Capture				13	11	24	45	54	99	1,395
External Trips (Total - Internal)				40	23	63	112	116	228	2,182
TDM Reduction				8	5	13	22	23	45	436
External Vehicle Trips (External - Transit)				32	18	50	90	93	183	1,746
Total Development New Vehicle Trips				342	981	1,323	1,136	736	1,872	19,901

Notes:

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

² Based on a non-auto mode split of 10% and an average auto occupancy of 1.15.

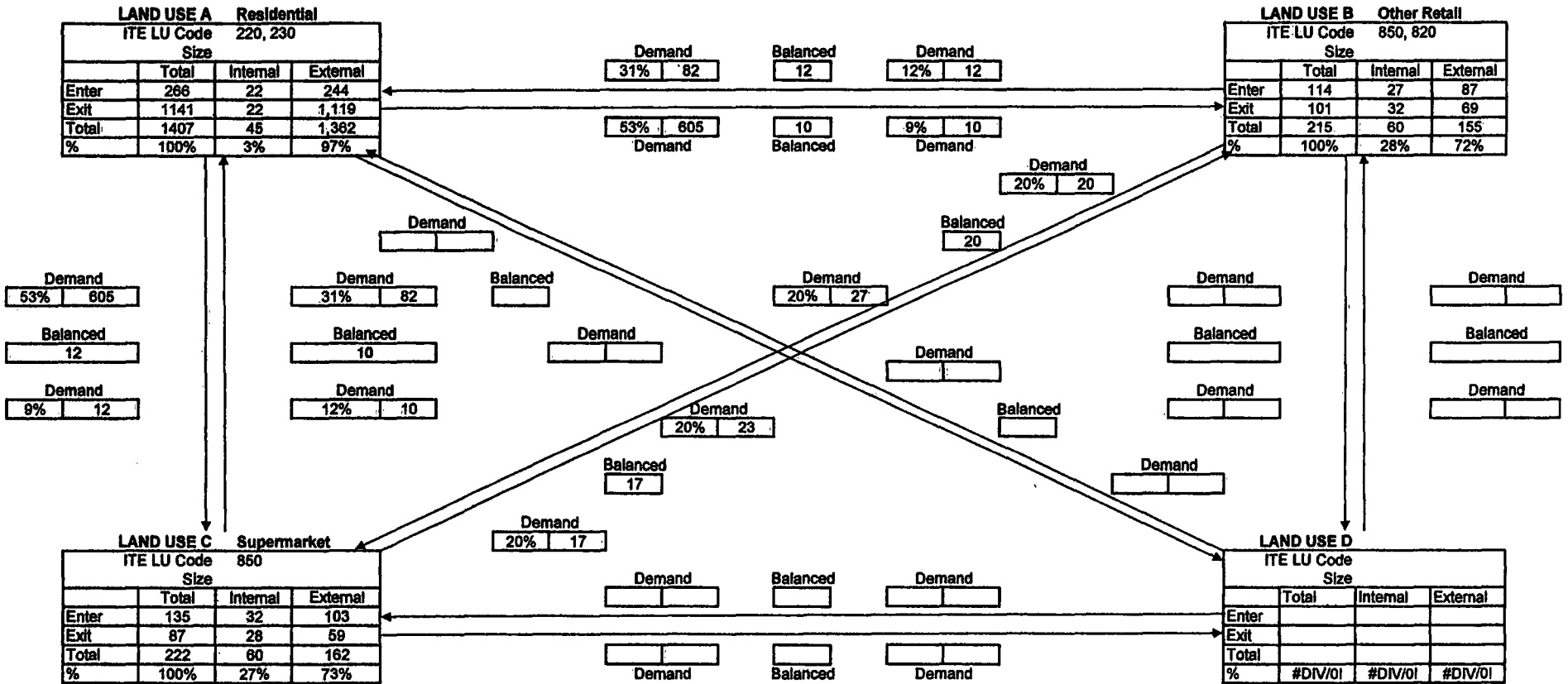
³ Based on a non-auto mode split of 20% and an average auto occupancy of 1.38.

⁴ AM Peak hour rate based on the PM peak hour rate of the adjacent street divided by the PM peak hour rate of the generator multiplied by the AM peak hour rate of the generator.

Analyst JMR
Date 7/20/06

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY**

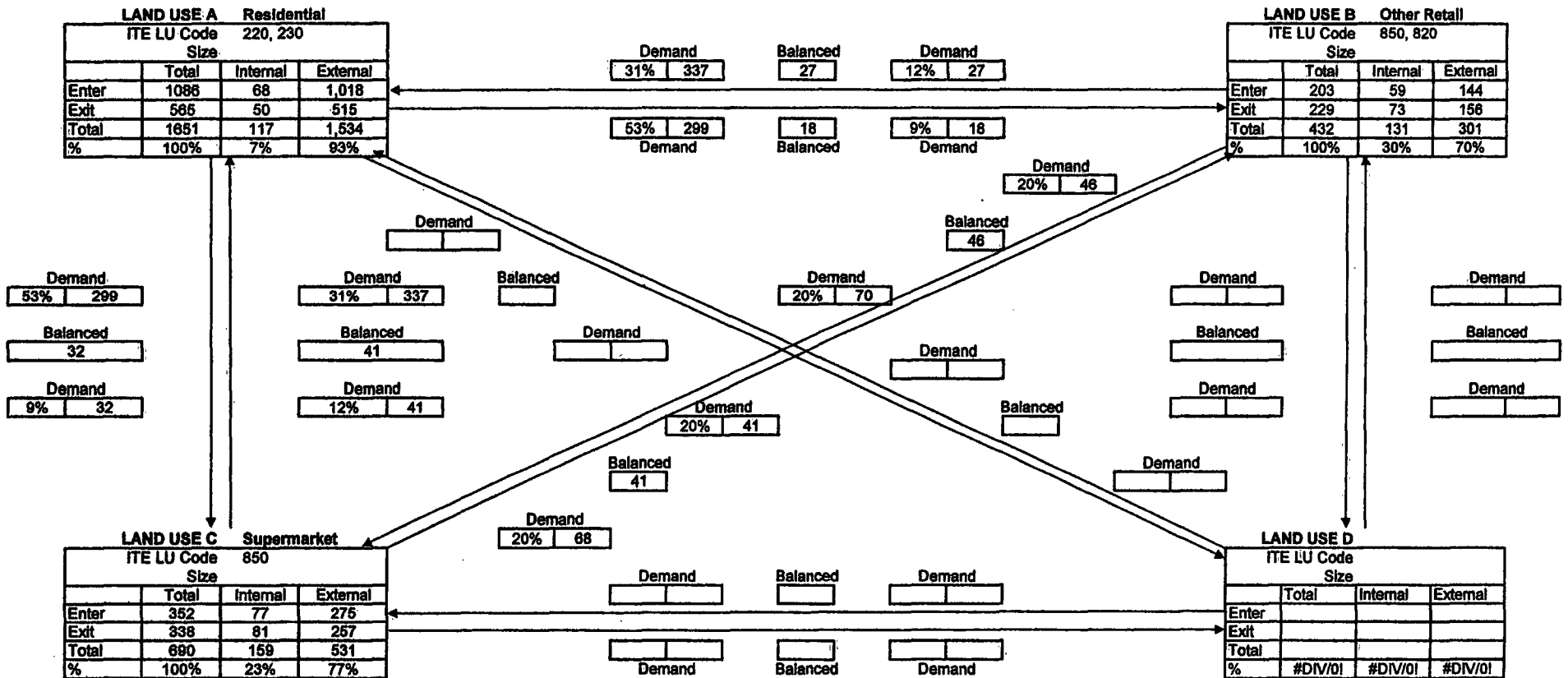
Job Number 3011
Time Period AM Peak



Analyst JMR
Date 7/20/08

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

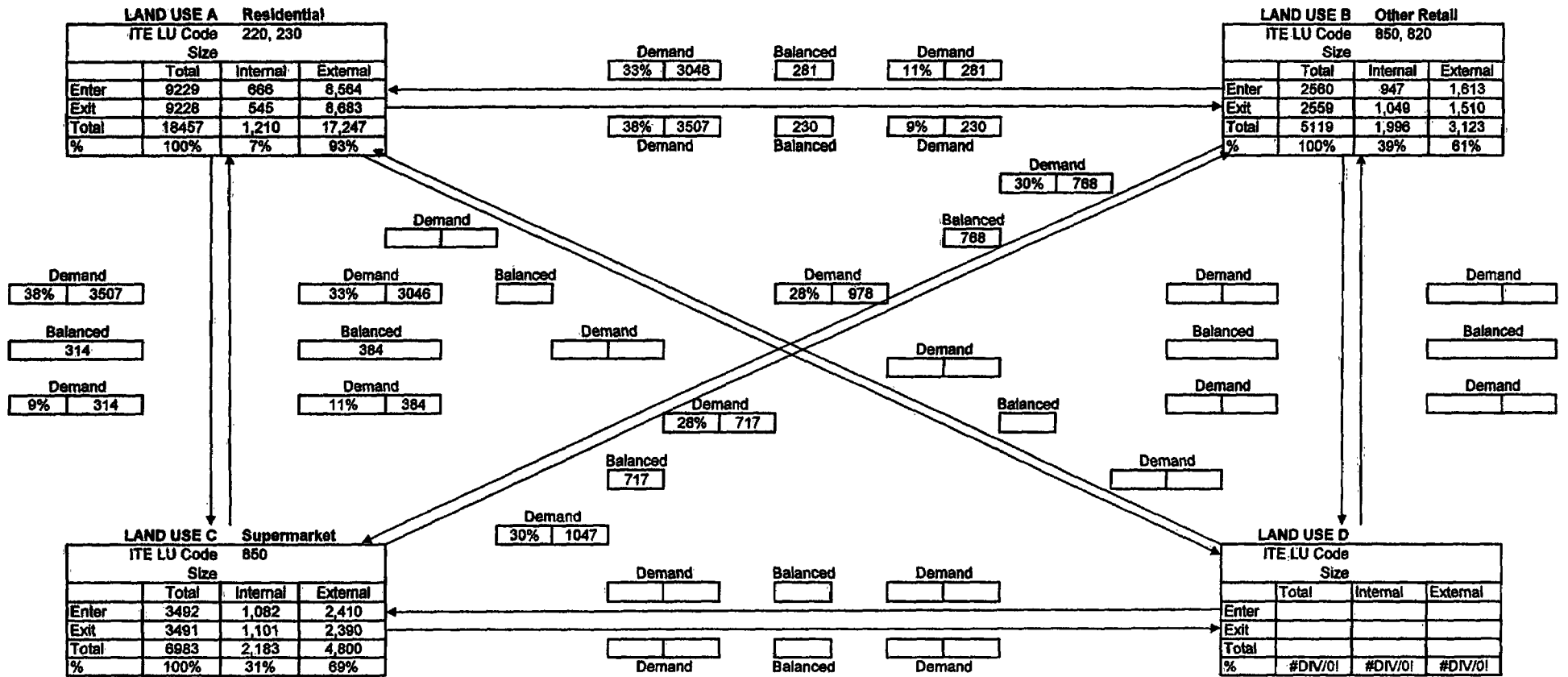
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Time Period PM Peak



Analyst JMR
Date 7/20/06

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

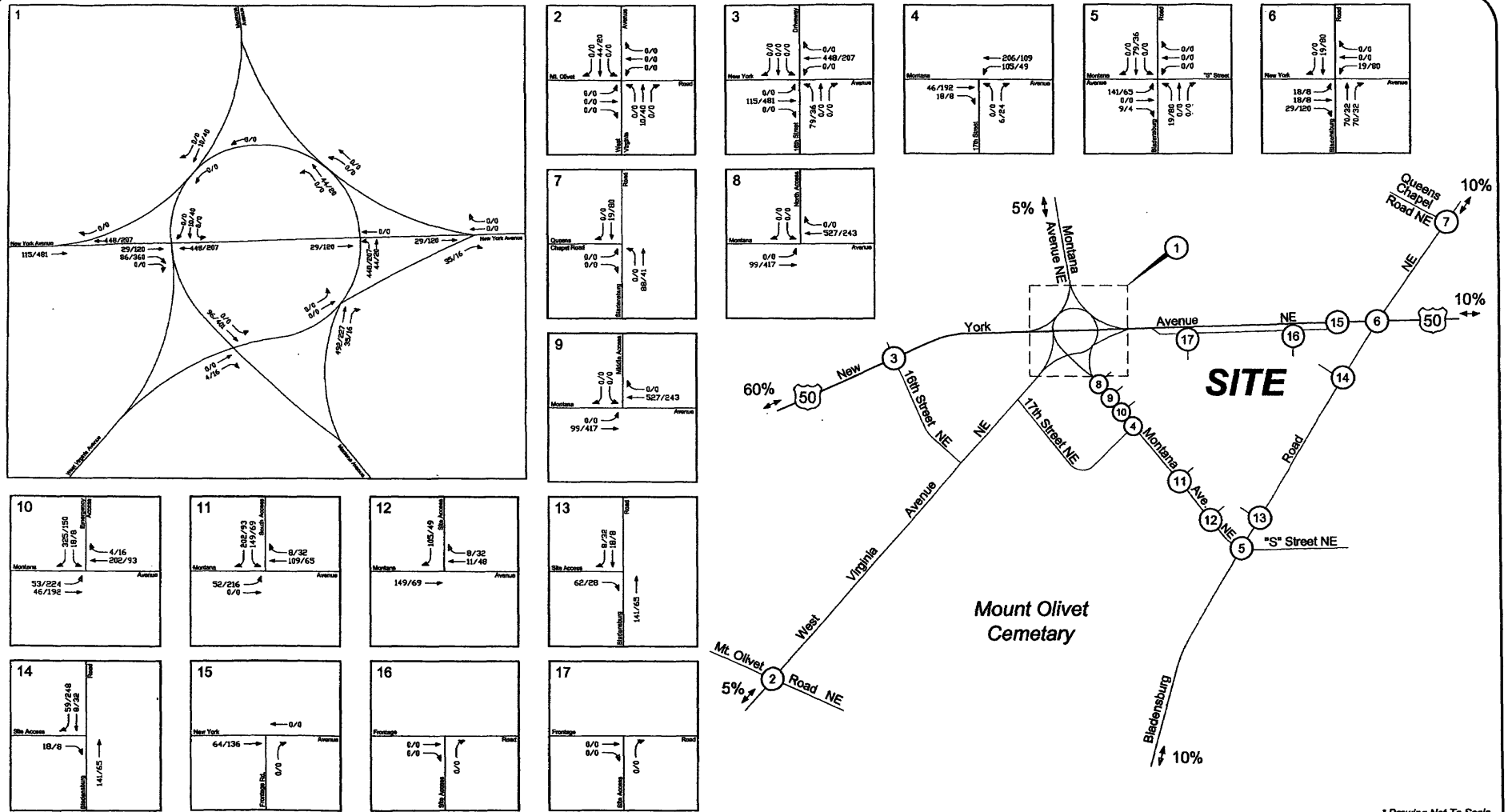
Job Number 3011
Time Period ADT



APPENDIX H

Site Trip Distribution and Assignments



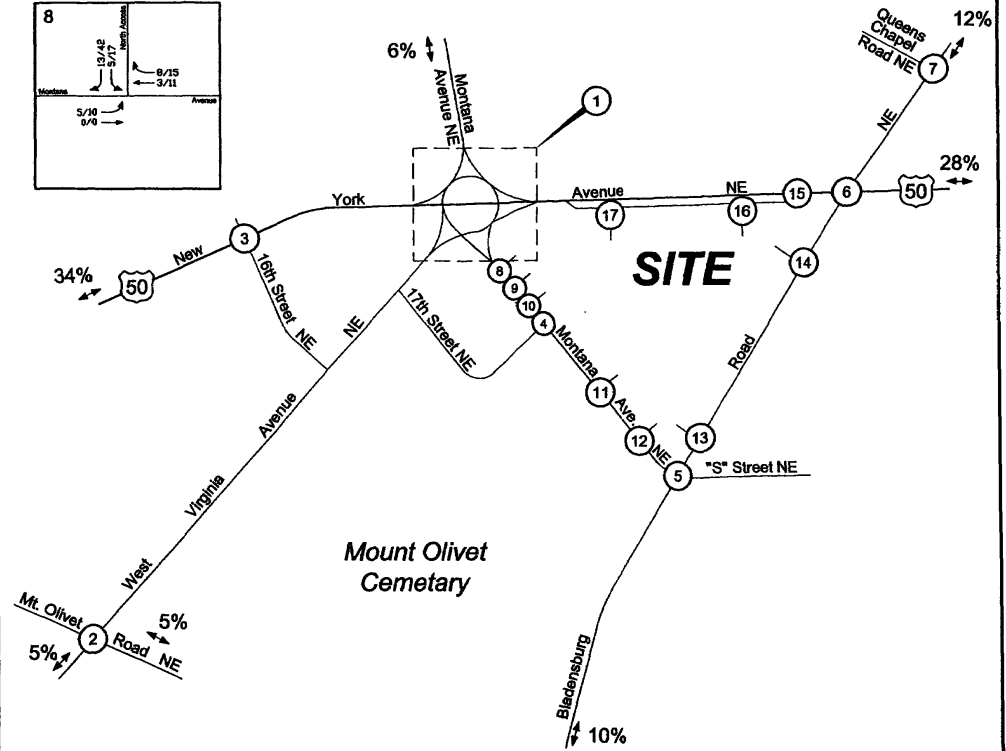
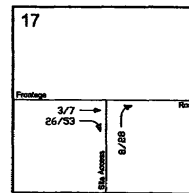
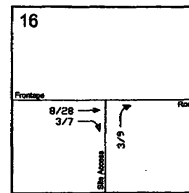
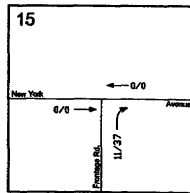
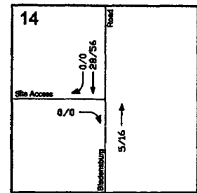
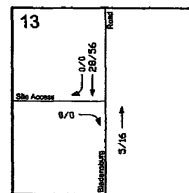
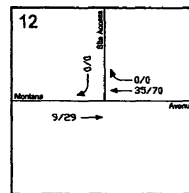
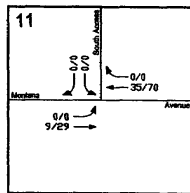
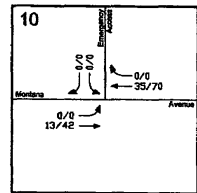
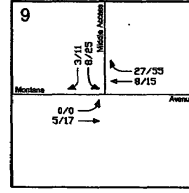
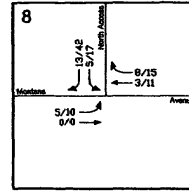
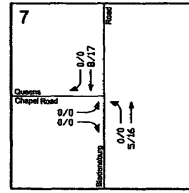
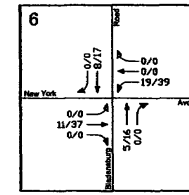
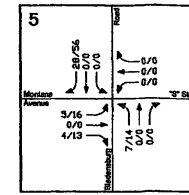
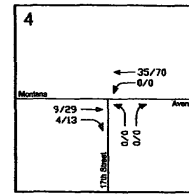
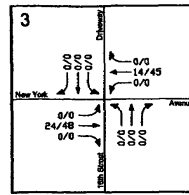
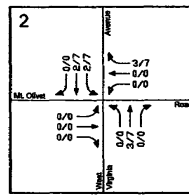
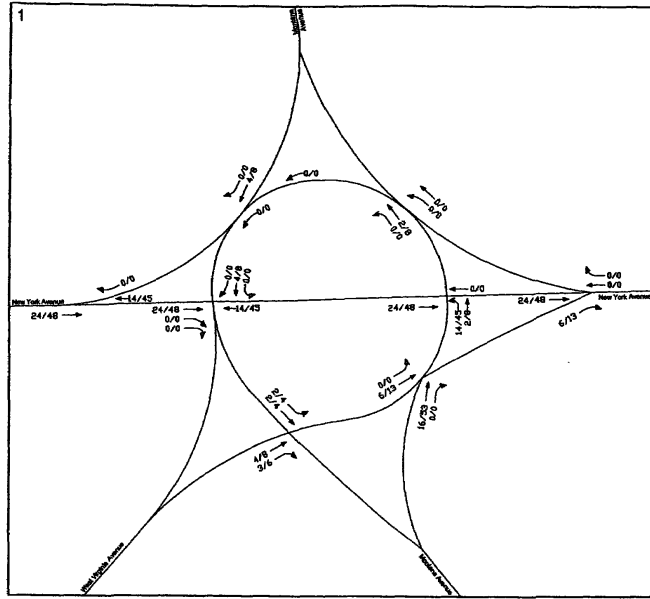


* Drawing Not To Scale

Figure H-1
Peak Hour Site Trips - Residential

AM Peak Hour
PM Peak Hour
000/000





* Drawing Not To Scale

Figure H-2
New Peak Hour Site Trips - Supermarket

AM Peak Hour
PM Peak Hour
North

Abdo New York Avenue
Washington, D.C.

WELLS & ASSOCIATES, LLC
TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

\\Pittsburgh-1\shared\Projects\3011 Abdo New York Avenue\Graphics\3011 Rpt Graphics.dwg\CUB

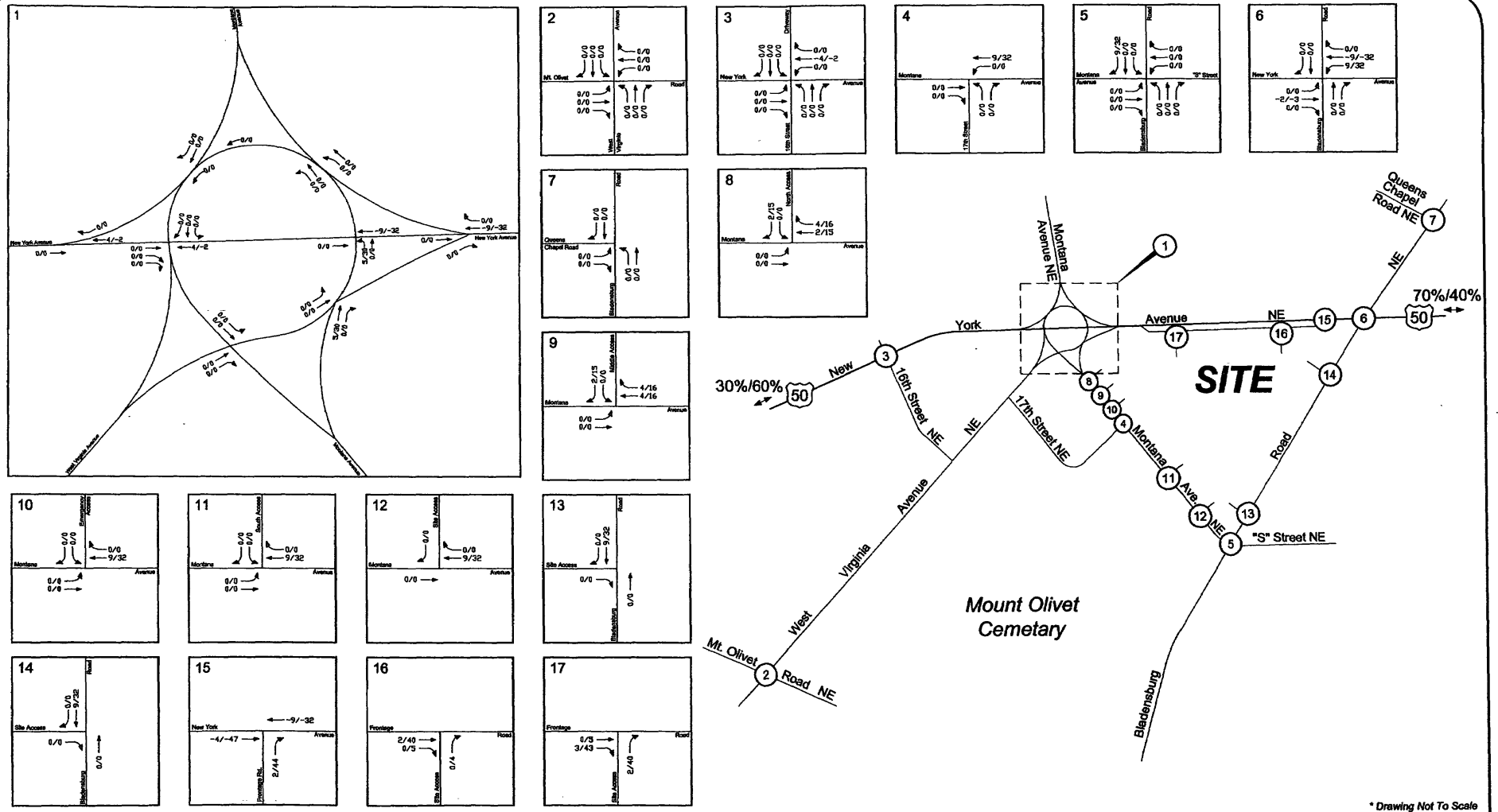
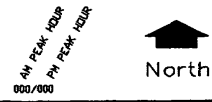


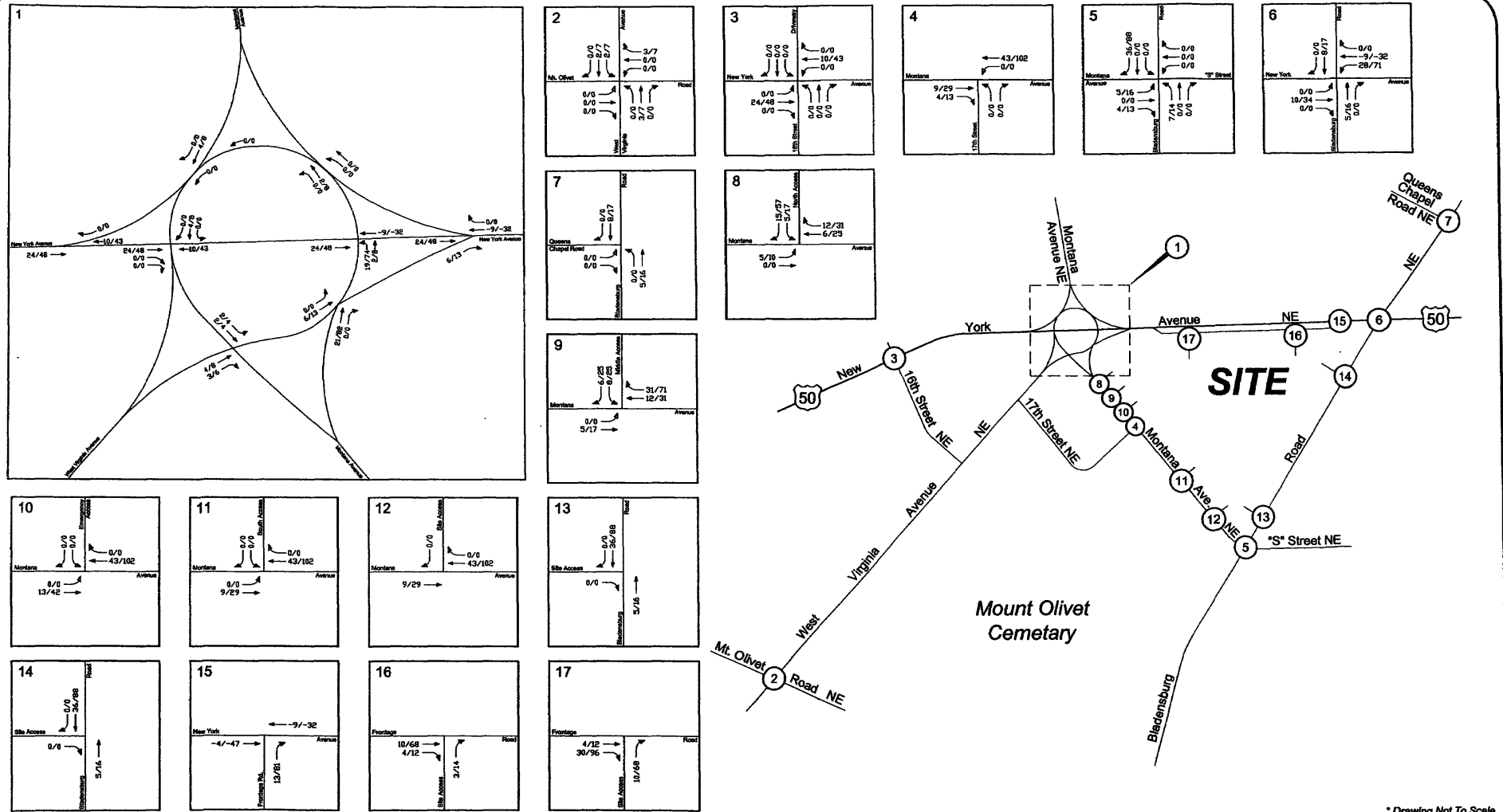
Figure H-3
Pass-by Peak Hour Site Trips - Supermarket

* Drawing Not To Scale



Abdo New York Avenue
Washington, D.C.

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* Drawing Not To Scale

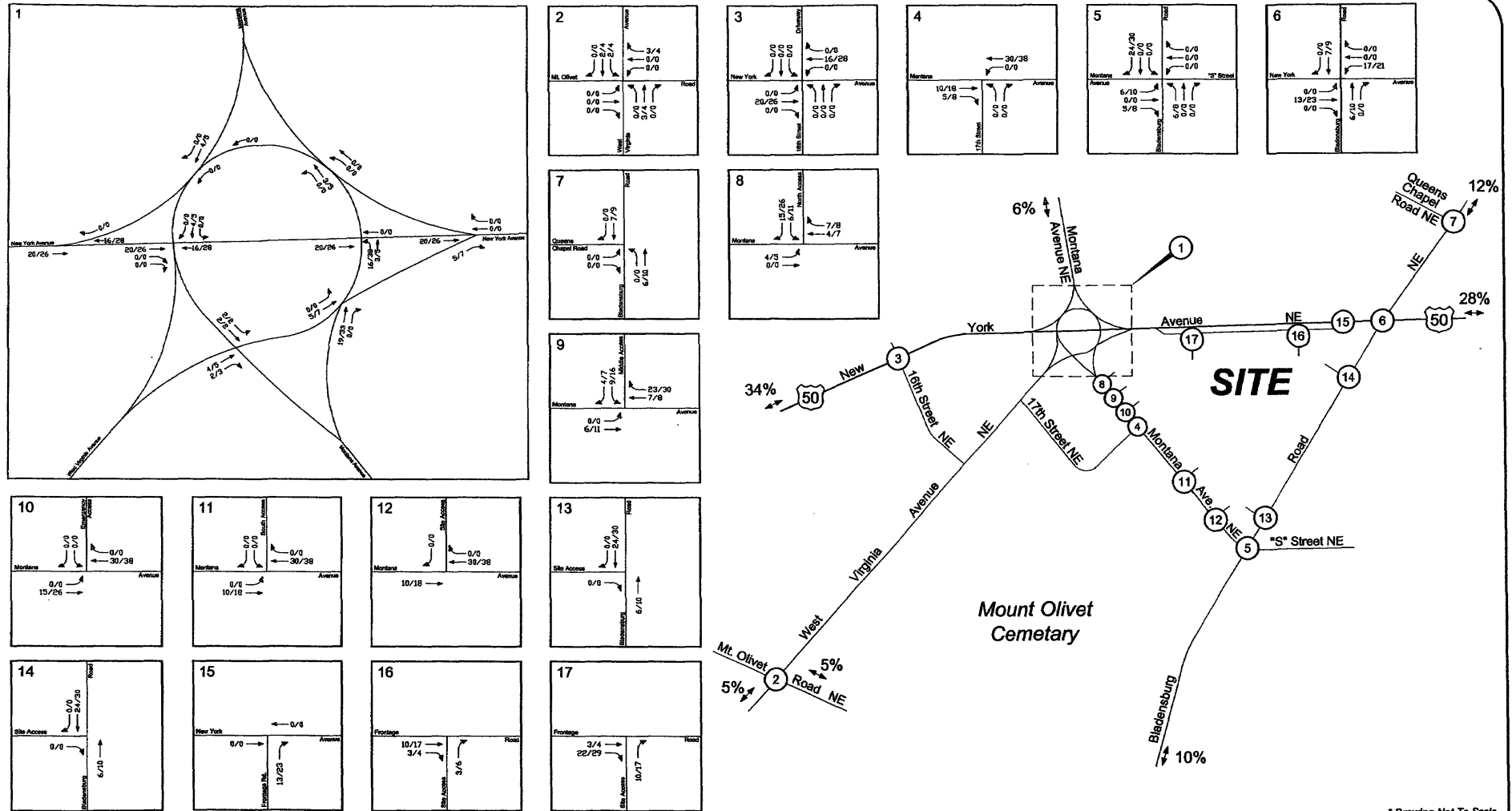
Figure H-4
Total Peak Hour Site Trips - Supermarket

AM PEAK HOUR
PM PEAK HOUR
000/000



Abdo New York Avenue
Washington, D.C.

WELLS & ASSOCIATES, LLC
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* Drawing Not To Scale

Figure H-5
New Peak Hour Site Trips - Other Retail

AM PEAK HOUR
PM PEAK HOUR
900/000



Abdo New York Avenue
Washington, D.C.

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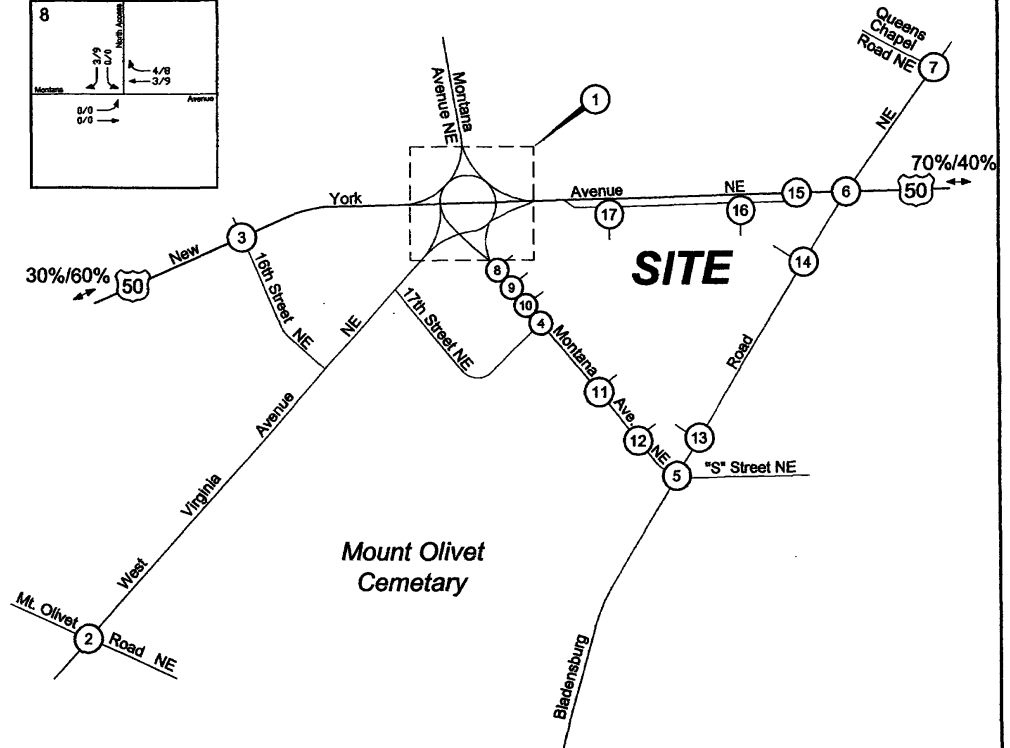
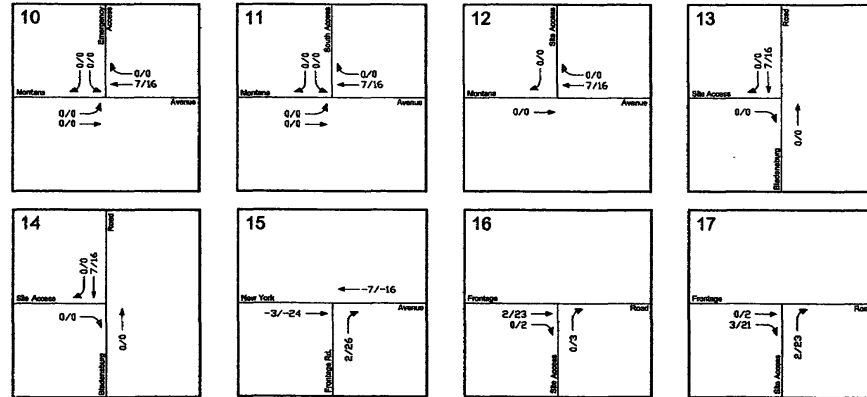


Figure H-6
Pass-by Peak Hour Site Trips — Other Retail

AM PEAK HOUR
PM PEAK HOUR
000/000



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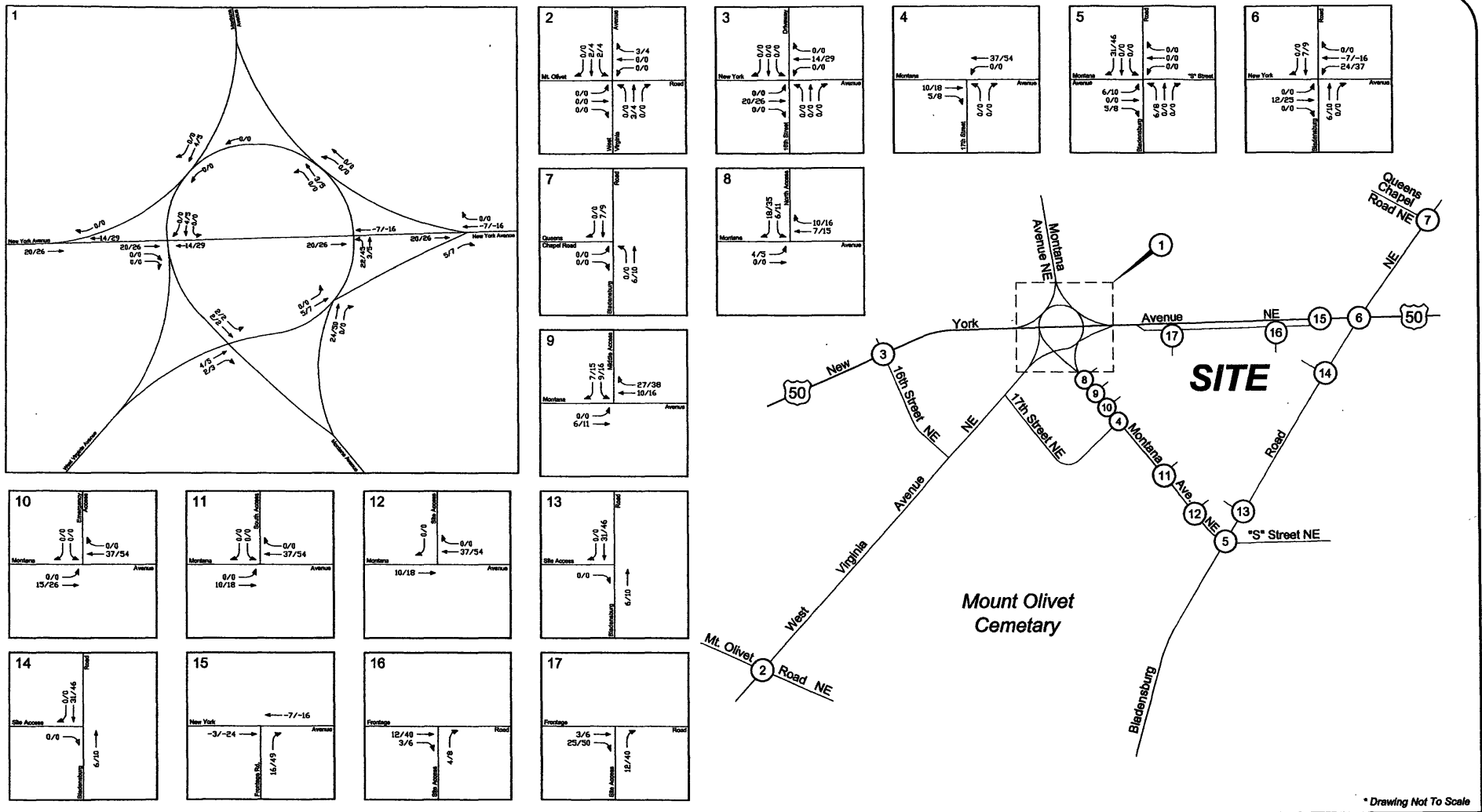


Figure H-7
Total Peak Hour Site Trips - Other Retail

APPENDIX I

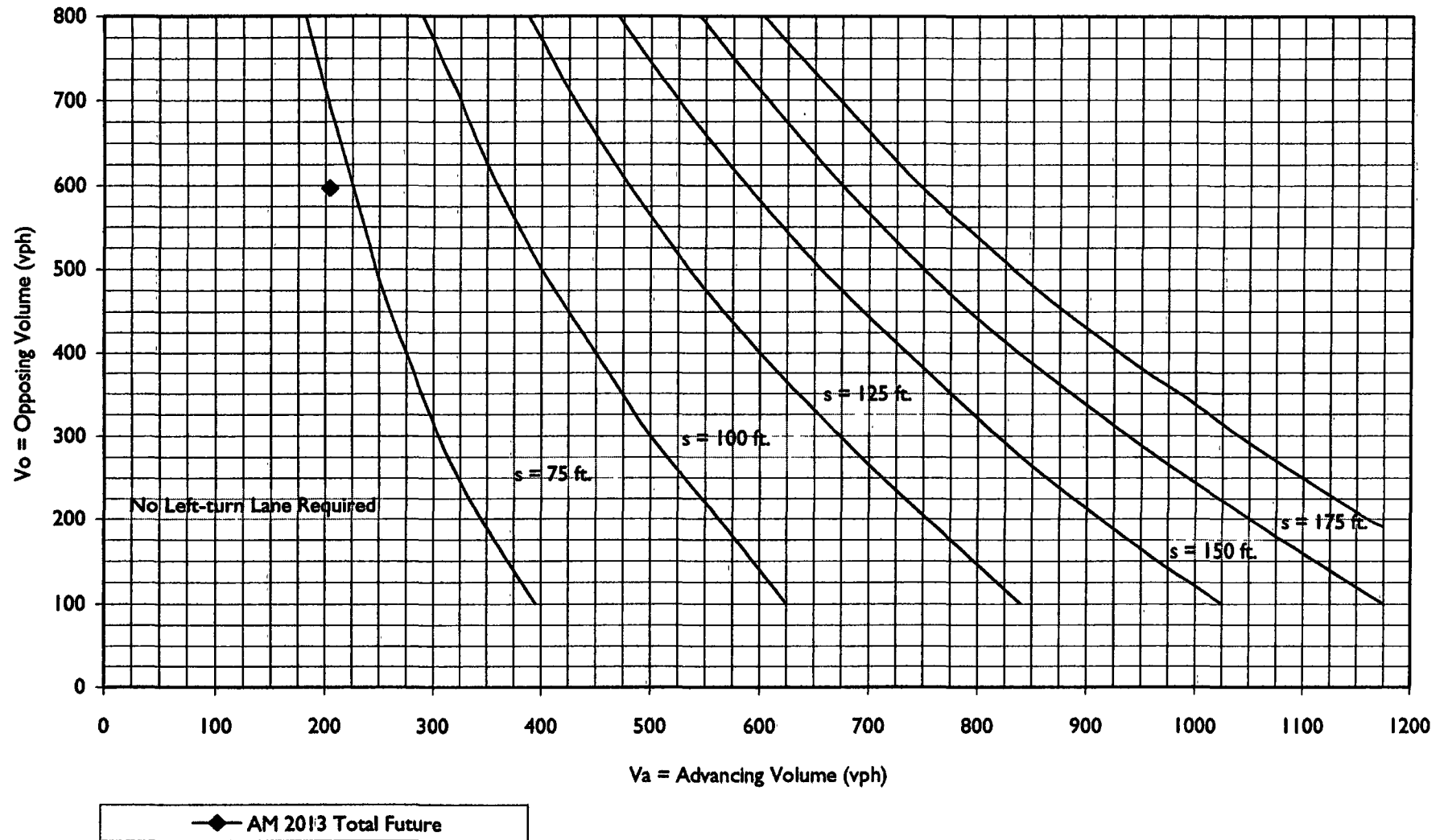
Turn Lane Analyses

JOB:	Abdo New York Avenue
JOB NUMBER:	3011
CALCULATED BY:	JMR
DATE:	7/20/2006
DESCRIPTION:	Montana Avenue/South Site Driveway Eastbound Left-turn Lane

Harmelink Chart for Left-Turn Lanes

[illegible]

3011 Abdo New York Avenue (20 percent transit/3,600 units)
Montana Avenue/South Site Driveway
Harmelink Charts for Left-Turn Lanes ($V = 40$ mph and $L = 20\%$)



APPENDIX J

2013 Total Future Capacity Analyses



HCM Signalized Intersection Capacity Analysis
1: New York Ave. & 16th Street

3011 Abdo New York Avenue

7/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕↕			↕↕↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	13	13	13
Total Lost time (s)	3.0			3.0			3.0			3.0		
Lane Util. Factor	0.91			0.91			1.00			1.00		
Frpb, ped/bikes	1.00			1.00			1.00			1.00		
Flpb, ped/bikes	1.00			1.00			1.00			1.00		
Frt	1.00			1.00			0.98			0.97		
Flt Protected	1.00			1.00			0.96			0.98		
Satd. Flow (prot)	4904			4914			1646			1831		
Flt Permitted	1.00			0.92			0.77			0.91		
Satd. Flow (perm)	4904			4498			1315			1709		
Volume (vph)	0	1595	23	18	3569	3	82	11	12	2	2	1
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
Adj. Flow (vph)	0	1772	26	20	3966	3	91	12	13	2	2	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1797	0	0	3989	0	0	111	0	0	5	0
Confl. Peds. (#/hr)	3			3			1			1		
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	2			2			4			4		
Permitted Phases	2			2			4			4		
Actuated Green, G (s)	75.4			75.4			13.6			13.6		
Effective Green, g (s)	77.4			77.4			16.6			16.6		
Actuated g/C Ratio	0.77			0.77			0.17			0.17		
Clearance Time (s)	5.0			5.0			6.0			6.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	3796			3481			218			284		
v/s Ratio Prot	0.37											
v/s Ratio Perm				c0.89			c0.08			0.00		
v/c Ratio	0.47			1.15			0.51			0.02		
Uniform Delay, d1	4.0			11.3			38.0			34.9		
Progression Factor	1.00			0.42			1.00			1.00		
Incremental Delay, d2	0.4			66.0			1.9			0.0		
Delay (s)	4.5			70.8			39.9			34.9		
Level of Service	A			E			D			C		
Approach Delay (s)	4.5			70.8			39.9			34.9		
Approach LOS	A			E			D			C		

Intersection Summary			
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: New York Ave. & Bladensburg Rd.

3011 Abdo New York Avenue
7/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	11	10	11	11	11	11	11	10	10	10
Total Lost time (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Util. Factor	0.97	0.91		0.97	0.91			0.91	0.91		0.91	0.91
Frt	1.00	0.99		1.00	1.00			1.00	0.85		0.98	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	3204	4883		3204	4910			3277	1393		3109	1345
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (perm)	3204	4883		3204	4910			3277	1393		3109	1345
Volume (vph)	241	1419	67	606	2918	24	0	453	273	0	632	529
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
Adj. Flow (vph)	268	1577	74	673	3242	27	0	503	303	0	702	588
RTOR Reduction (vph)	0	5	0	0	1	0	0	0	0	0	10	0
Lane Group Flow (vph)	268	1646	0	673	3268	0	0	503	303	0	785	495
Turn Type	Prot			Prot				pm+ov			pm+ov	
Protected Phases	5	2 5		1	6			4	1		8	5
Permitted Phases									4			8
Actuated Green, G (s)	7.0	32.0		30.0	54.0			21.0	51.0		21.0	28.0
Effective Green, g (s)	9.0	33.0		33.0	57.0			25.0	58.0		25.0	34.0
Actuated g/C Ratio	0.09	0.33		0.33	0.57			0.25	0.58		0.25	0.34
Clearance Time (s)	5.0			6.0	6.0			7.0	6.0		7.0	5.0
Lane Grp Cap (vph)	288	1611		1057	2799			819	850		777	498
v/s Ratio Prot	0.08	0.34		0.21	0.67			0.15	0.12		0.25	0.09
v/s Ratio Perm									0.10			0.28
v/c Ratio	0.93	1.02		0.64	1.17			0.61	0.36		1.01	0.99
Uniform Delay, d1	45.2	33.5		28.4	21.5			33.2	11.1		37.5	32.9
Progression Factor	0.90	0.57		1.00	1.00			1.13	1.36		0.55	0.40
Incremental Delay, d2	35.0	26.8		2.9	79.7			3.2	1.1		31.6	34.7
Delay (s)	75.5	45.8		31.3	101.2			40.6	16.3		52.1	47.9
Level of Service	E	D		C	F			D	B		D	D
Approach Delay (s)		50.0			89.2			31.5			50.5	
Approach LOS		D			F			C			D	
Intersection Summary												
HCM Average Control Delay	67.6			HCM Level of Service			E					
HCM Volume to Capacity ratio	1.10											
Actuated Cycle Length (s)	100.0			Sum of lost time (s)			6.0					
Intersection Capacity Utilization	96.9%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

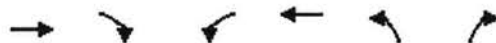
HCM Signalized Intersection Capacity Analysis
3: Mt. Olivet Rd. & West Virginia Ave.

3011 Abdo New York Avenue
7/11/2006

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		3.0			3.0			3.0		3.0	3.0	
Lane Util. Factor		0.95			0.95			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.99			0.98			0.98		1.00	1.00	
Flt Protected		0.99			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3230			3165			3055		1650	3135	
Flt Permitted		0.68			0.84			0.53		0.46	1.00	
Satd. Flow (perm)		2223			2657			1631		791	3135	
Volume (vph)	53	400	44	62	675	104	62	241	36	132	506	4
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
Adj. Flow (vph)	59	444	49	69	750	116	69	268	40	147	562	4
RTOR Reduction (vph)	0	7	0	0	11	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	545	0	0	924	0	0	368	0	147	566	0
Confl. Peds. (#/hr)	20		35	35		20			6	6		
Bus Blockages (#/hr)	0	0	0	0	8	8	0	0	0	0	0	0
Parking (#/hr)								0	0		0	0
Turn Type	Perm			Perm			Perm			custom		
Protected Phases		4			8			2		1	6	1
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.0			38.0			34.0		50.0	52.0	
Effective Green, g (s)		40.0			40.0			36.0		51.0	54.0	
Actuated g/C Ratio		0.40			0.40			0.36		0.51	0.54	
Clearance Time (s)		5.0			5.0			5.0		2.0		
Lane Grp Cap (vph)		889			1063			587		532	1693	
v/s Ratio Prot										0.04	c0.18	
v/s Ratio Perm		0.25			c0.35			c0.23		0.10		
v/c Ratio		0.61			0.87			0.96dl		0.28	0.33	
Uniform Delay, d1		23.8			27.6			26.5		13.3	12.9	
Progression Factor		1.00			1.00			1.00		1.04	1.18	
Incremental Delay, d2		3.1			9.6			5.0		1.1	0.5	
Delay (s)		27.0			37.2			31.5		15.0	15.7	
Level of Service		C			D			C		B	B	
Approach Delay (s)		27.0			37.2			31.5			15.6	
Approach LOS		C			D			C			B	
Intersection Summary												
HCM Average Control Delay		28.2										
HCM Volume to Capacity ratio		0.69										
Actuated Cycle Length (s)		100.0								9.0		
Intersection Capacity Utilization		119.1%										
Analysis Period (min)		15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane. c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
4: Montana Ave. & 17th Street

3011 Abdo New York Avenue
7/11/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	↩
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	171	38	321	493	3	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	190	42	357	548	3	44
Pedestrians					10	
Lane Width (ft)					10.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)				851		
pX, platoon unblocked						
vC, conflicting volume			242		1482	221
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			242		1482	221
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			73		97	95
cM capacity (veh/h)			1315		100	813
Direction Lane #	EB 1	WB 1	NB 1			
Volume Total	232	904	48			
Volume Left	0	357	3			
Volume Right	42	0	44			
cSH	1700	1315	542			
Volume to Capacity	0.14	0.27	0.09			
Queue Length 95th (ft)	0	28	7			
Control Delay (s)	0.0	5.6	12.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	5.6	12.3			
Approach LOS			B			
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization		69.1%		ICU Level of Service		C
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis
5: Montana Ave. & Bladensburg Rd.

3011 Abdo New York Avenue
7/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	10	10	11	11	11	11	11	11
Total Lost time (s)		3.0	3.0		3.0			3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00			0.91			0.91	
Frpb, ped/bikes		1.00	0.98		1.00			1.00			1.00	
Flpb, ped/bikes		1.00	1.00		1.00			1.00			1.00	
Frt		1.00	0.85		0.99			1.00			0.97	
Flt Protected		0.95	1.00		0.97			0.99			1.00	
Satd. Flow (prot)		1713	1356		1497			4812			4745	
Flt Permitted		0.69	1.00		0.80			0.68			0.94	
Satd. Flow (perm)		1233	1356		1230			3300			4455	
Volume (vph)	181	4	116	34	27	5	171	545	6	3	1137	301
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
Adj. Flow (vph)	201	4	129	38	30	6	190	606	7	3	1263	334
RTOR Reduction (vph)	0	0	94	0	3	0	0	1	0	0	48	0
Lane Group Flow (vph)	0	205	35	0	71	0	0	802	0	0	1552	0
Confl. Peds. (#/hr)	2		3	3		2	5		1	1		5
Bus Blockages (#/hr)	0	0	0	0	0	0	0	6	6	0	0	0
Parking (#/hr)			0	1	1	1						
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		24.0	24.0		24.0			64.0			35.0	
Effective Green, g (s)		27.0	27.0		27.0			67.0			38.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.67			0.38	
Clearance Time (s)		6.0	6.0		6.0			6.0			6.0	
Lane Grp Cap (vph)		333	366		332			2604			1693	
v/s Ratio Prot								c0.08				
v/s Ratio Perm		c0.17	0.03		0.06			0.13			c0.35	
v/c Ratio		0.62	0.10		0.21			0.31			0.92	
Uniform Delay, d1		32.0	27.3		28.3			6.9			29.5	
Progression Factor		1.00	1.00		1.00			1.00			0.65	
Incremental Delay, d2		8.3	0.5		1.5			0.3			6.7	
Delay (s)		40.2	27.9		29.8			7.2			26.1	
Level of Service		D	C		C			A			C	
Approach Delay (s)		35.4			29.8			7.2			26.1	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM Average Control Delay			21.9				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			112.5%				ICU Level of Service			H		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: Queens Chapel Rd. & Bladensburg Rd.

3011 Abdo New York Avenue
7/11/2006

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	10	10	10
Total Lost time (s)	3.0			3.0	3.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.93			1.00	0.97	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1637			4698	4611	
Flt Permitted	0.98			0.65	1.00	
Satd. Flow (perm)	1637			3092	4611	
Volume (vph)	118	121	159	618	935	219
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	131	134	177	687	1039	243
RTOR Reduction (vph)	36	0	0	0	38	0
Lane Group Flow (vph)	229	0	0	864	1244	0
Turn Type		pm+pt				
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	21.0			68.0	40.0	
Effective Green, g (s)	24.0			70.0	41.0	
Actuated g/C Ratio	0.24			0.70	0.41	
Clearance Time (s)	6.0			5.0	4.0	
Lane Grp Cap (vph)	393			2582	1891	
v/s Ratio Prot	c0.14			c0.09	c0.27	
v/s Ratio Perm				0.15		
v/c Ratio	0.58			0.33	0.66	
Uniform Delay, d1	33.6			5.9	23.8	
Progression Factor	1.00			0.14	1.00	
Incremental Delay, d2	6.2			0.3	1.8	
Delay (s)	39.7			1.1	25.6	
Level of Service	D			A	C	
Approach Delay (s)	39.7			1.1	25.6	
Approach LOS	D			A	C	
Intersection Summary						
HCM Average Control Delay		18.4		HCM Level of Service		B
HCM Volume to Capacity ratio		0.53				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)		6.0
Intersection Capacity Utilization		62.1%		ICU Level of Service		B
Analysis Period (min)		15				
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
7: New York Ave. & Montana Ave.

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	WBT	WBR	SWL	SWR	
Lane Configurations		↑↑↑	↑↑↑			↑	
Sign Control		Free	Free		Yield		
Grade		0%	0%		0%		
Volume (veh/h)	0	1743	3902	0	0	30	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	0	1937	4336	0	0	33	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type					None		
Median storage veh							
Upstream signal (ft)		746	106				
pX, platoon unblocked	0.30				0.36	0.30	
vC, conflicting volume	4336				4981	1445	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	7519				6993	0	
tC, single (s)	4.1				6.8	6.9	
tC, 2 stage (s)							
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				100	90	
cM capacity (veh/h)	0				0	320	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SW 1
Volume Total	646	646	646	1445	1445	1445	33
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	33
cSH	1700	1700	1700	1700	1700	1700	320
Volume to Capacity	0.38	0.38	0.38	0.85	0.85	0.85	0.10
Queue Length 95th (ft)	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	17.5
Lane LOS							C
Approach Delay (s)	0.0			0.0			17.5
Approach LOS							C
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization			85.4%		ICU Level of Service		E
Analysis Period (min)			15				

	→	↗	←	↘	↓	↓
Movement	EBT	EBR	WBT	SBL2	SBL	SBT
Lane Configurations	↑↑↑		↑↑↑			↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	10	10	12
Total Lost time (s)	3.0		3.0			3.0
Lane Util. Factor	0.91		0.91			0.95
Frt	0.97		1.00			1.00
Flt Protected	1.00		1.00			0.98
Satd. Flow (prot)	4791		4916			3486
Flt Permitted	1.00		1.00			0.98
Satd. Flow (perm)	4791		4916			3486
Volume (vph)	1449	294	3902	116	66	412
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1610	327	4336	129	73	458
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1937	0	4336	0	0	660
Turn Type				custom		custom
Protected Phases	2		2 3			4
Permitted Phases				4	4	
Actuated Green, G (s)	54.0		69.0			20.0
Effective Green, g (s)	55.0		71.0			23.0
Actuated g/C Ratio	0.55		0.71			0.23
Clearance Time (s)	4.0					6.0
Lane Grp Cap (vph)	2635		3490			802
v/s Ratio Prot	0.40		0.88			
v/s Ratio Perm						0.19
v/c Ratio	0.74		1.24			0.82
Uniform Delay, d1	17.0		14.5			36.6
Progression Factor	1.02		0.44			1.00
Incremental Delay, d2	1.7		109.3			9.3
Delay (s)	19.0		115.7			45.9
Level of Service	B		F			D
Approach Delay (s)	19.0		115.7			45.9
Approach LOS	B		F			D
Intersection Summary						
HCM Average Control Delay			82.0		HCM Level of Service	F
HCM Volume to Capacity ratio			1.14			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	6.0
Intersection Capacity Utilization			98.7%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑						↔			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)		3.0						3.0			
Lane Util. Factor		0.95						0.97			
Frt		0.99						1.00			
Flt Protected		1.00						0.95			
Satd. Flow (prot)		3273						3204			
Flt Permitted		1.00						0.95			
Satd. Flow (perm)		3273						3204			
Volume (vph)	0	139	9	0	0	0	129	230	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
Adj. Flow (vph)	0	154	10	0	0	0	143	256	0	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	159	0	0	0	0	0	366	0	0	0
Turn Type							Split				
Protected Phases		6					5 8	5 8			
Permitted Phases											
Actuated Green, G (s)		15.0						75.0			
Effective Green, g (s)		17.0						77.0			
Actuated g/C Ratio		0.17						0.77			
Clearance Time (s)		5.0									
Lane Grp Cap (vph)		556						2467			
v/s Ratio Prot		c0.05						c0.11			
v/s Ratio Perm											
v/c Ratio		0.29						0.15			
Uniform Delay, d1		36.2						3.0			
Progression Factor		0.83						1.63			
Incremental Delay, d2		0.9						0.1			
Delay (s)		31.0						4.9			
Level of Service		C						A			
Approach Delay (s)		31.0			0.0			4.9		0.0	
Approach LOS		C			A			A		A	
Intersection Summary											
HCM Average Control Delay		12.5					HCM Level of Service		B		
HCM Volume to Capacity ratio		0.17									
Actuated Cycle Length (s)		100.0					Sum of lost time (s)		6.0		
Intersection Capacity Utilization		39.6%					ICU Level of Service		A		
Analysis Period (min)		15									
c Critical Lane Group											

HCM Signalized Intersection Capacity Analysis
10: West Virginia Ave. & Montana Ave.

3011 Abdo New York Avenue
7/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	10	10	10	10	10	10
Total Lost time (s)	3.0	3.0						3.0				
Lane Util. Factor	0.95	0.95						0.95				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	0.96						1.00				
Satd. Flow (prot)	1569	1583						3280				
Flt Permitted	0.95	0.96						1.00				
Satd. Flow (perm)	1569	1583						3280				
Volume (vph)	250	18	0	0	0	0	0	727	35	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
Adj. Flow (vph)	278	20	0	0	0	0	0	808	39	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	145	153	0	0	0	0	0	844	0	0	0	0
Turn Type	Perm											
Protected Phases	6								8			
Permitted Phases	6											
Actuated Green, G (s)	76.0	76.0							12.0			
Effective Green, g (s)	77.0	77.0							17.0			
Actuated g/C Ratio	0.77	0.77							0.17			
Clearance Time (s)	4.0	4.0							8.0			
Lane Grp Cap (vph)	1208	1219							558			
v/s Ratio Prot									c0.26			
v/s Ratio Perm	0.09	0.10										
v/c Ratio	0.12	0.13							1.51			
Uniform Delay, d1	2.9	2.9							41.5			
Progression Factor	0.31	0.31							1.00			
Incremental Delay, d2	0.2	0.2							239.5			
Delay (s)	1.1	1.1							281.0			
Level of Service	A	A							F			
Approach Delay (s)			1.1		0.0				281.0		0.0	
Approach LOS			A		A				F		A	
Intersection Summary												
HCM Average Control Delay			208.2		HCM Level of Service				F			
HCM Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)				6.0			
Intersection Capacity Utilization			51.6%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
11: New York Ave. & Montana Ave.

3011 Abdo New York Avenue
7/11/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑↑				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	10	10	10	10	10	10
Total Lost time (s)		3.0			3.0			3.0				
Lane Util. Factor		0.91			0.91			0.95				
Frt		1.00			1.00			1.00				
Flt Protected		1.00			1.00			0.97				
Satd. Flow (prot)		4916			4916			3207				
Flt Permitted		1.00			1.00			0.97				
Satd. Flow (perm)		4916			4916			3207				
Volume (vph)	0	1565	0	0	3316	0	586	391	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
Adj. Flow (vph)	0	1739	0	0	3684	0	651	434	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1739	0	0	3684	0	0	1085	0	0	0	0
Turn Type							Split					
Protected Phases		2			2		4	4				
Permitted Phases												
Actuated Green, G (s)		60.0			60.0			29.0				
Effective Green, g (s)		62.0			62.0			32.0				
Actuated g/C Ratio		0.62			0.62			0.32				
Clearance Time (s)		5.0			5.0			6.0				
Lane Grp Cap (vph)		3048			3048			1026				
v/s Ratio Prot		0.35			0.75			0.34				
v/s Ratio Perm												
v/c Ratio		0.57			1.21			1.23dl				
Uniform Delay, d1		11.2			19.0			34.0				
Progression Factor		0.09			0.51			1.05				
Incremental Delay, d2		0.5			94.2			28.5				
Delay (s)		1.5			103.9			64.2				
Level of Service		A			F			E				
Approach Delay (s)		1.5			103.9			64.2			0.0	
Approach LOS		A			F			E			A	
Intersection Summary												
HCM Average Control Delay		69.9			HCM Level of Service			E				
HCM Volume to Capacity ratio		1.16										
Actuated Cycle Length (s)		100.0			Sum of lost time (s)			6.0				
Intersection Capacity Utilization		103.2%			ICU Level of Service			G				
Analysis Period (min)		15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
12: New York Ave. &

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SER	NEL	NER
Lane Configurations		↑↑↑			↑↑↑					↑
Sign Control		Free			Free		Stop		Yield	
Grade		0%			0%		0%		0%	
Volume (veh/h)	0	1565	0	0	3316	119	0	0	0	53
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1739	0	0	3684	132	0	0	0	59
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type							None		None	
Median storage (veh)										
Upstream signal (ft)		122								
pX, platoon unblocked				0.79			0.79	0.79	0.79	0.79
vC, conflicting volume	3817			1739			4389	5489	5556	580
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	3817			1408			4753	6142	6226	0
tC, single (s)	4.1			4.1			7.5	6.5	6.5	6.9
tC, 2 stage (s)										
tF (s)	2.2			2.2			3.5	4.0	4.0	3.3
p0 queue free %	100			100			100	100	100	93
cM capacity (veh/h)	52			381			0	0	0	859
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NE 1			
Volume Total	580	580	580	1474	1474	869	59			
Volume Left	0	0	0	0	0	0	0			
Volume Right	0	0	0	0	0	132	59			
cSH	1700	1700	1700	1700	1700	1700	859			
Volume to Capacity	0.34	0.34	0.34	0.87	0.87	0.51	0.07			
Queue Length 95th (ft)	0	0	0	0	0	0	6			
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.5			
Lane LOS							A			
Approach Delay (s)	0.0			0.0			9.5			
Approach LOS							A			
Intersection Summary										
Average Delay			0.1							
Intersection Capacity Utilization			70.0%			ICU Level of Service			C	
Analysis Period (min)			15							

HCM Unsignalized Intersection Capacity Analysis
13: Frontage Road & West Site Driveway

3011 Abdo New York Avenue
7/11/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩					↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	7	55	0	0	0	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	61	0	0	0	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			69		38	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			69		38	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			1532		974	1034
Direction, Lane #	EB 1	NB 1				
Volume Total	69	24				
Volume Left	0	0				
Volume Right	61	24				
cSH	1700	1034				
Volume to Capacity	0.04	0.02				
Queue Length 95th (ft)	0	2				
Control Delay (s)	0.0	8.6				
Lane LOS		A				
Approach Delay (s)	0.0	8.6				
Approach LOS		A				
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		13.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
14: Frontage Road & East Site Driveway

3011 Abdo New York Avenue
7/11/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩					↩
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	22	7	0	0	0	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	8	0	0	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			32		28	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		28	28
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1580		986	1047
Direction, Lane #	EB 1	NB 1				
Volume Total	32	8				
Volume Left	0	0				
Volume Right	8	8				
cSH	1700	1047				
Volume to Capacity	0.02	0.01				
Queue Length 95th (ft)	0	1				
Control Delay (s)	0.0	8.5				
Lane LOS		A				
Approach Delay (s)	0.0	8.5				
Approach LOS		A				
Intersection Summary						
Average Delay		1.6				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
15: Montana Ave. & North Site Driveway

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	230	729	22	11	33
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	256	810	24	12	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)			1101			
pX, platoon unblocked						
vC, conflicting volume	834				1098	417
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	834				1098	417
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				94	94
cM capacity (veh/h)	795				205	584
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	266	540	294	49		
Volume Left	10	0	0	12		
Volume Right	0	0	24	37		
cSH	795	1700	1700	399		
Volume to Capacity	0.01	0.32	0.17	0.12		
Queue Length 95th (ft)	1	0	0	10		
Control Delay (s)	0.5	0.0	0.0	15.3		
Lane LOS	A			C		
Approach Delay (s)	0.5	0.0		15.3		
Approach LOS				C		
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			30.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
16: Montana Ave. & Middle Site Driveway

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	241	739	58	16	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	268	821	64	18	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)			1026			
pX, platoon unblocked						
vC, conflicting volume	886				1121	443
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	886				1121	443
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	98
cM capacity (veh/h)	760				200	562
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	268	547	338	31		
Volume Left	0	0	0	18		
Volume Right	0	0	64	13		
cSH	760	1700	1700	276		
Volume to Capacity	0.00	0.32	0.20	0.11		
Queue Length 95th (ft)	0	0	0	9		
Control Delay (s)	0.0	0.0	0.0	19.7		
Lane LOS				C		
Approach Delay (s)	0.0	0.0		19.7		
Approach LOS				C		
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			32.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
17: Montana Ave. & Emergency Entrance

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩↩		↩	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	53	204	472	4	18	325
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	59	227	524	4	20	361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)			951			
pX, platoon unblocked						
vC, conflicting volume	529				871	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	529				871	264
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				93	51
cM capacity (veh/h)	1034				274	734
Direction Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	286	350	179	381		
Volume Left	59	0	0	20		
Volume Right	0	0	4	361		
cSH	1034	1700	1700	674		
Volume to Capacity	0.06	0.21	0.11	0.57		
Queue Length 95th (ft)	5	0	0	89		
Control Delay (s)	2.2	0.0	0.0	17.0		
Lane LOS	A			C		
Approach Delay (s)	2.2	0.0		17.0		
Approach LOS				C		
Intersection Summary						
Average Delay		6.0				
Intersection Capacity Utilization		57.9%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
18: Montana Ave. & South Site Driveway

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑	↑	↑	↰	↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	52	152	589	8	149	202
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	58	169	654	9	166	224
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)			329			
pX, platoon unblocked						
vC, conflicting volume	663				939	654
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	663				939	654
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				40	52
cM capacity (veh/h)	925				275	466
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	58	169	654	9	166	224
Volume Left	58	0	0	0	166	0
Volume Right	0	0	0	9	0	224
cSH	925	1700	1700	1700	275	466
Volume to Capacity	0.06	0.10	0.38	0.01	0.60	0.48
Queue Length 95th (ft)	5	0	0	0	90	64
Control Delay (s)	9.1	0.0	0.0	0.0	36.1	19.7
Lane LOS	A				E	C
Approach Delay (s)	2.3		0.0		26.7	
Approach LOS					D	
Intersection Summary						
Average Delay			8.5			
Intersection Capacity Utilization			52.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
19: Site Driveway & Bladensburg Rd.

3011 Abdo New York Avenue
7/11/2006

							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	18	0	726	1246	59	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	0	20	0	807	1384	66	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)				884	560		
pX, platoon unblocked							
vC, conflicting volume	1686	494	1450				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1686	494	1450				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	96	100				
cM capacity (veh/h)	85	521	463				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	20	269	269	269	554	554	342
Volume Left	0	0	0	0	0	0	0
Volume Right	20	0	0	0	0	0	66
cSH	521	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	0.16	0.16	0.16	0.33	0.33	0.20
Queue Length 95th (ft)	3	0	0	0	0	0	0
Control Delay (s)	12.2	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.2	0.0			0.0		
Approach LOS	B						
Intersection Summary							
Average Delay		0.1					
Intersection Capacity Utilization		35.4%		ICU Level of Service	A		
Analysis Period (min)		15					

HCM Unsignalized Intersection Capacity Analysis
21: New York Ave. & Frontage Road

3011 Abdo New York Avenue
7/11/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑↑			↑↑↑		↗	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Volume (veh/h)	1727	0	0	3447	0	29	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	1919	0	0	3830	0	32	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None			
Median storage (veh)							
Upstream signal (ft)	1228			300			
pX, platoon unblocked			0.81		0.54	0.81	
vC, conflicting volume			1919		3196	640	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			1669		1790	95	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			100		100	96	
cM capacity (veh/h)			309		39	767	
Direction Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	640	640	640	1277	1277	1277	32
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	32
cSH	1700	1700	1700	1700	1700	1700	767
Volume to Capacity	0.38	0.38	0.38	0.75	0.75	0.75	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.9
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.9
Approach LOS							A
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization			69.9%		ICU Level of Service		C
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
22: Montana Ave. &

3011 Abdo New York Avenue
7/11/2006

											
Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Sign Control	Yield				Free				Free		
Grade	0%				0%				0%		
Volume (veh/h)	45	0	0	0	0	0	0	548	30	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	0	0	0	0	0	0	609	33	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type	None					None					
Median storage veh											
Upstream signal (ft)	121										
pX, platoon unblocked											
vC, conflicting volume	304	642	0	642	0				626	626	
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	304	642	0	642	0				626	626	
tC, single (s)	7.5	6.5	6.9	4.1	4.1				7.5	6.5	
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2	2.2				3.5	4.0	
p0 queue free %	92	100	100	100	100				100	100	
cM capacity (veh/h)	625	391	1084	938	1622				369	399	
Direction Lane #	WB 1	WB 2	SB 1	SB 2							
Volume Total	25	25	406	236							
Volume Left	25	25	0	0							
Volume Right	0	0	0	33							
cSH	625	625	1700	1700							
Volume to Capacity	0.04	0.04	0.24	0.14							
Queue Length 95th (ft)	3	3	0	0							
Control Delay (s)	11.0	11.0	0.0	0.0							
Lane LOS	B	B									
Approach Delay (s)	11.0			0.0							
Approach LOS	B										
Intersection Summary											
Average Delay	0.8										
Intersection Capacity Utilization	26.1%				ICU Level of Service				A		
Analysis Period (min)	15										



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations					↩		↩			
Sign Control		Yield			Yield		Free		Free	
Grade		0%			0%		0%		0%	
Volume (veh/h)	0	0	0	0	45	74	391	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	0	50	82	434	0	0	0
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type		None			None					
Median storage veh										
Upstream signal (ft)							115			
pX, platoon unblocked										
vC, conflicting volume	324	434	0	434	434	217			434	
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	324	434	0	434	434	217			434	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9			4.1	
tC, 2 stage (s)										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3			2.2	
p0 queue free %	100	100	100	100	90	90			100	
cM capacity (veh/h)	501	513	1084	505	513	787			1122	
Direction, Lane #	WB 1	NB 1	NB 2							
Volume Total	132	145	290							
Volume Left	0	0	0							
Volume Right	82	0	0							
cSH	655	1622	1700							
Volume to Capacity	0.20	0.00	0.17							
Queue Length 95th (ft)	19	0	0							
Control Delay (s)	11.9	0.0	0.0							
Lane LOS	B									
Approach Delay (s)	11.9	0.0								
Approach LOS	B									
Intersection Summary										
Average Delay			2.8							
Intersection Capacity Utilization		24.7%				ICU Level of Service			A	
Analysis Period (min)			15							

HCM Unsignalized Intersection Capacity Analysis
24: Montana Ave. & Lower Site Driveway

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑	↑		↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	301	492	8	0	105
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	334	547	9	0	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)			100			
pX, platoon unblocked						
vC, conflicting volume	556				714	547
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	556				714	547
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	76
cM capacity (veh/h)	1011				366	481
Direction Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	167	167	547	9	117	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	9	117	
cSH	1700	1700	1700	1700	481	
Volume to Capacity	0.10	0.10	0.32	0.01	0.24	
Queue Length 95th (ft)	0	0	0	0	24	
Control Delay (s)	0.0	0.0	0.0	0.0	14.9	
Lane LOS					B	
Approach Delay (s)	0.0		0.0		14.9	
Approach LOS					B	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			39.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
25: South RIRO & Bladensburg Rd.

3011 Abdo New York Avenue
7/11/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↗		↑↑↑	↑↑↑		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	62	0	725	1262	8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	0	69	0	806	1402	9	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh)							
Upstream signal (ft)	100						
pX, platoon unblocked	0.95						
vC, conflicting volume	1675	472	1411				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1609	472	1411				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	87	100				
cM capacity (veh/h)	91	539	479				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	69	269	269	269	561	561	289
Volume Left	0	0	0	0	0	0	0
Volume Right	69	0	0	0	0	0	9
cSH	539	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.13	0.16	0.16	0.16	0.33	0.33	0.17
Queue Length 95th (ft)	11	0	0	0	0	0	0
Control Delay (s)	12.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	12.7	0.0			0.0		
Approach LOS	B						
Intersection Summary							
Average Delay	0.4						
Intersection Capacity Utilization	35.1%			ICU Level of Service		A	
Analysis Period (min)	15						