ATTACHMENT B

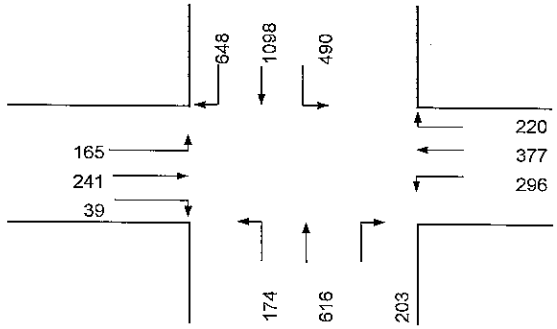
Background CLV Analysis

Cafritz Property at Riverdale Park
Critical Lane Volume
Level of Service Calculations

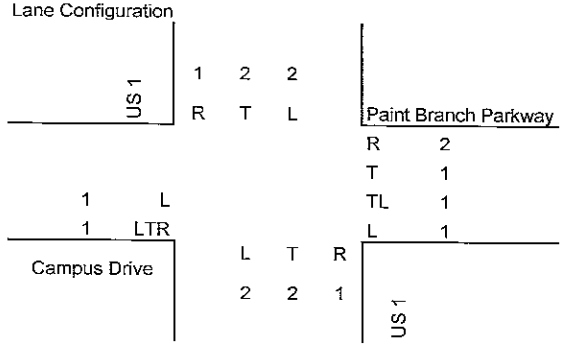
Intersection: 1: US 1/Paint Branch Parkway
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

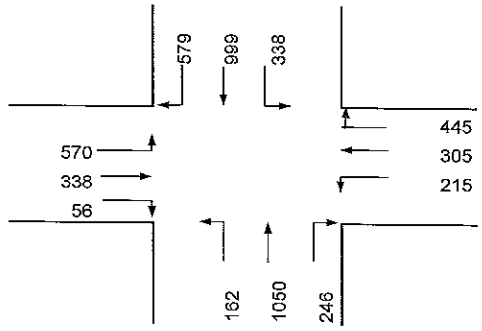
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: E/W Stop: Ways:

RTOR/Overlap (AM):	NB	203	SB	165	EB	0	WB 220
RTOR/Overlap (PM):	NB	215	SB	570	EB	0	WB 338
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
		2 lefts	0.6	F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	445	0.55	245	0	1.00	0	245	*
WB	TL	673	0.37	249	0	1.00	0	249	*
NB	T	616	0.55	339	490	0.60	294	633	
SB	T	1098	0.55	604	174	0.60	104	708	*

Note:

SUM 1202
C

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	964	0.55	530	0	1.00	0	530	*
WB	TL	520	0.37	192	0	1.00	0	192	*
NB	T	1050	0.55	578	338	0.60	203	781	*
SB	T	999	0.55	549	162	0.60	97	646	

Note:

SUM 1503
E

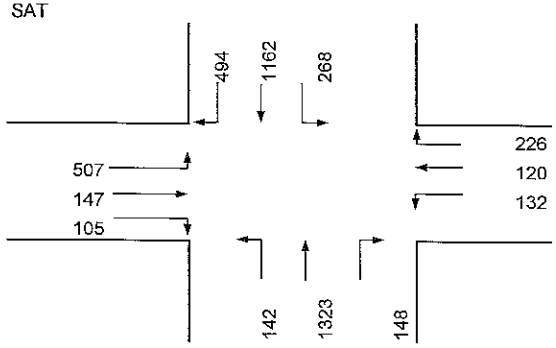
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volume
Level of Service Calculations

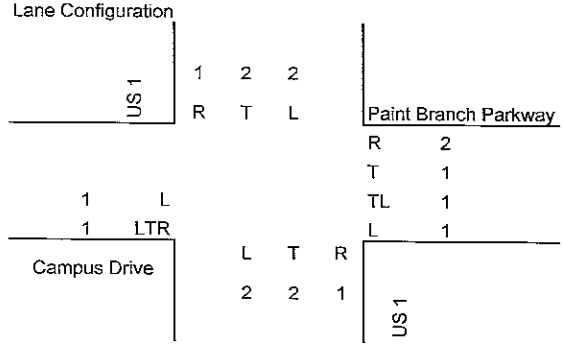
Intersection: 1: US 1/Paint Branch Parkway
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

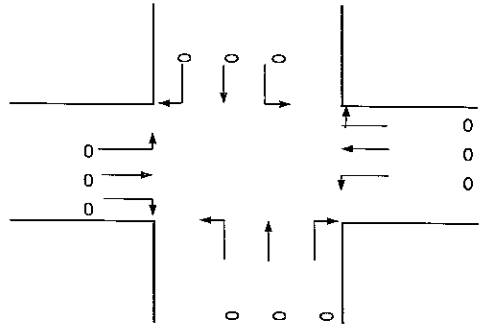
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: E/W Stop: Ways:

	NB	SB	EB	WB
RTOR/Overlap (AM):	132	494	0	226
RTOR/Overlap (PM):	0	0	0	0
Shared Left PCE (AM):	1	1	1	1
Shared Left PCE (PM):	1	1	1	1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
		2 lefts	0.6	F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	759	0.55	417	0	1.00	0	417	*
WB	TL	252	0.37	93	0	1.00	0	93	*
NB	T	1323	0.55	728	268	0.60	161	889	*
SB	T	1162	0.55	639	142	0.60	85	724	

Note:

SUM 1399
D

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	0	0.55	0	0	1.00	0	0	*
WB	TL	0	0.37	0	0	1.00	0	0	*
NB	T	0	0.55	0	0	0.60	0	0	*
SB	T	0	0.55	0	0	0.60	0	0	

Note:

SUM 0

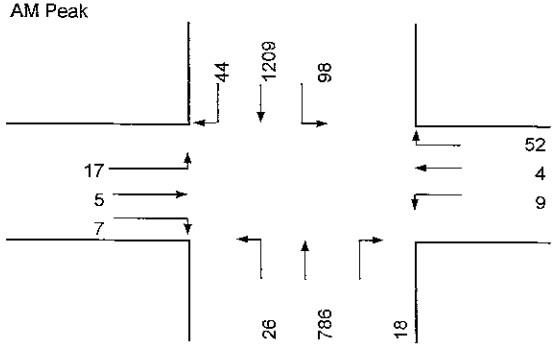
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

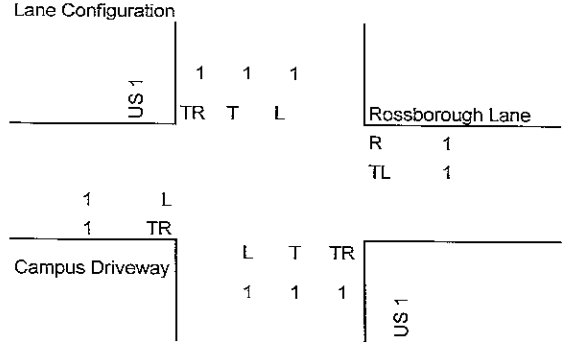
Intersection: 2: US 1/Rossborough Lane
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

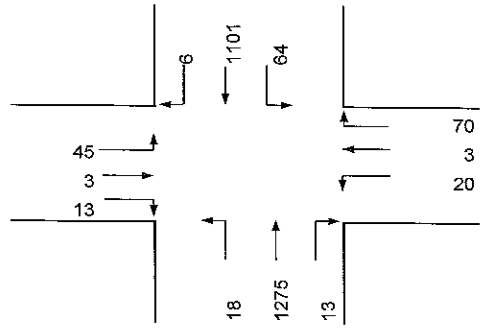
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 52
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 64
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	12	1.00	12	9	1.00	9	21	
WB	TL	14	1.00	14	17	1.00	17	31	*
NB	TR	804	0.55	442	98	1.00	98	540	
SB	TR	1253	0.55	689	26	1.00	26	715	*

Note:

SUM 746
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	16	1	16	20	1.00	20	36	
WB	TL	25	1	25	45	1.00	45	70	*
NB	TR	1288	0.55	708	64	1.00	64	772	*
SB	TR	1107	0.55	609	18	1.00	18	627	

Note:

SUM 842
A

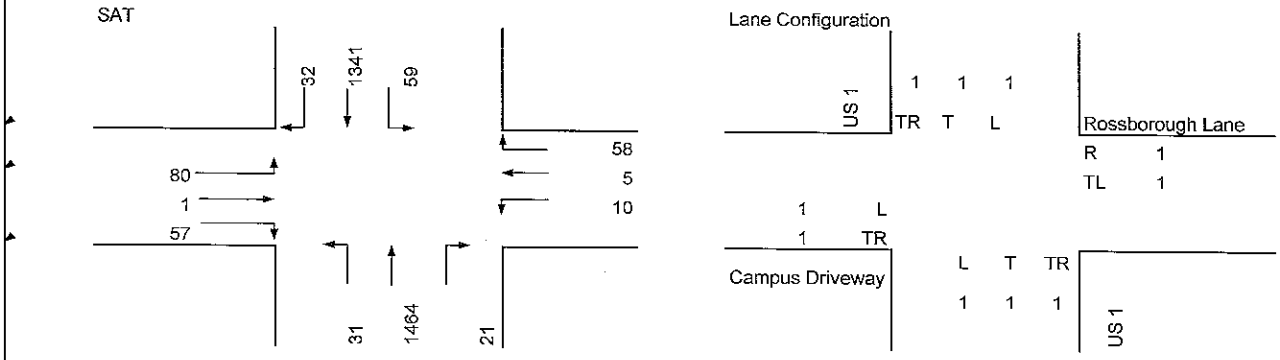
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

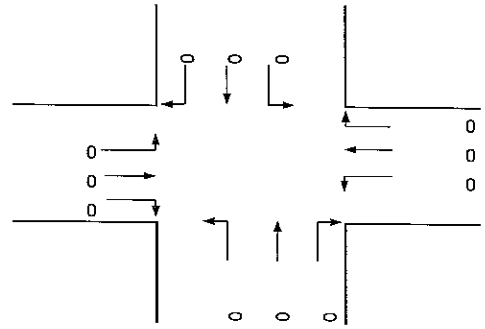
Intersection: 2: US 1/Rossborough Lane
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

SAT



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 58
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	58	1.00	58	10	1.00	10	68	
WB	TL	16	1.00	16	80	1.00	80	96	*
NB	TR	1485	0.55	817	59	1.00	59	876	*
SB	TR	1373	0.55	755	31	1.00	31	786	

Note:

SUM 972
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	0	1	0	0	1.00	0	0	*
WB	TL	0	1	0	0	1.00	0	0	
NB	TR	0	0.55	0	0	1.00	0	0	*
SB	TR	0	0.55	0	0	1.00	0	0	

Note:

SUM 0

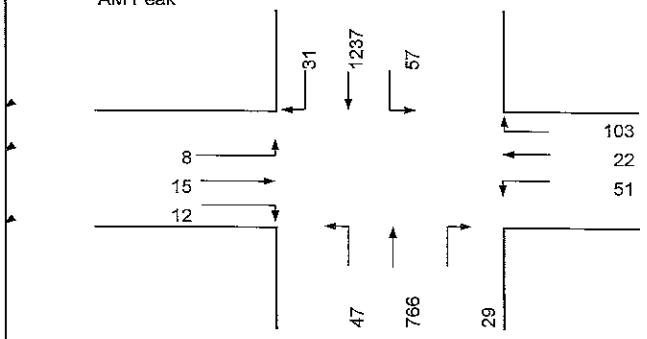
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

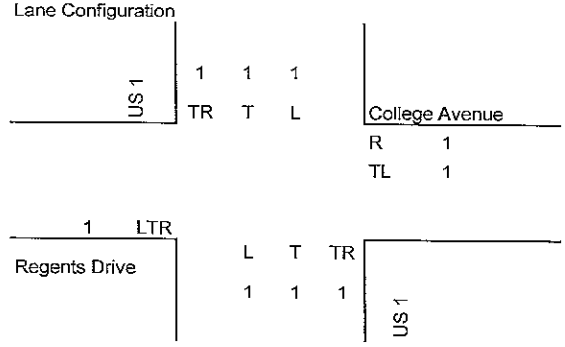
Intersection: 3: US 1/College Avenue
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

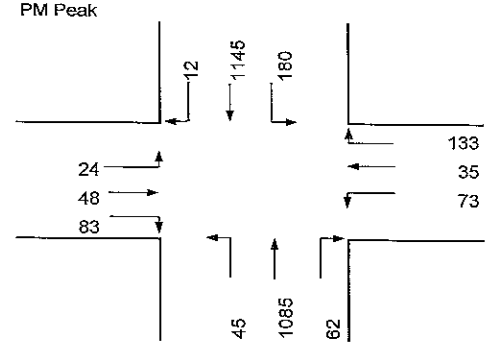
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 57
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 133
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	36	1.00	36	51	1.00	51	87	*
WB	TL	78	1.00	78	8	1.00	8	86	
NB	TR	795	0.55	437	57	1.00	57	494	
SB	TR	1268	0.55	697	47	1.00	47	744	*

Note:

SUM 831
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	157	1.00	157	73	1.00	73	230	*
WB	TL	115	1.00	115	24	1.00	24	139	
NB	TR	1147	0.55	631	180	1.00	180	811	*
SB	TR	1157	0.55	636	45	1.00	45	681	

Note:

SUM 1041
B

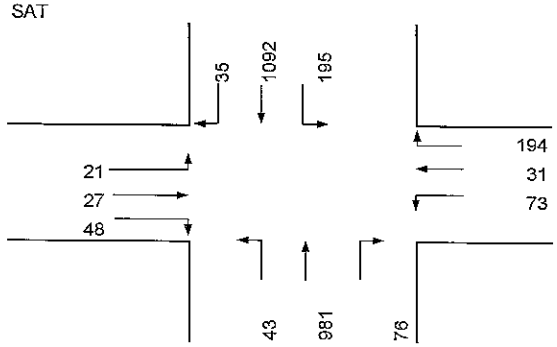
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

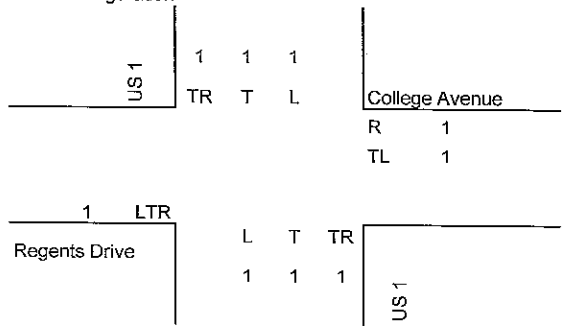
Intersection: 3: US 1/College Avenue
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

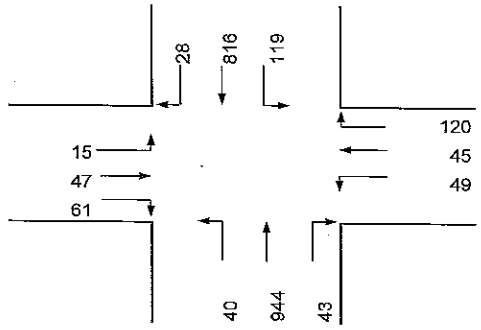
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 194
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 119
Shared Left PCE (AM):	NB	1	SB	1	EB	2	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	117	1.00	117	73	1.00	73	190	*
WB	TL	111	1.00	111	21	1.00	21	132	
NB	TR	1057	0.55	581	195	1.00	195	776	*
SB	TR	1127	0.55	620	43	1.00	43	663	

Note:

SUM 966
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	125	1.00	125	49	1.00	49	174	*
WB	TL	99	1.00	99	15	1.00	15	114	
NB	TR	987	0.55	543	119	1.00	119	662	*
SB	TR	844	0.55	464	40	1.00	40	504	

Note:

SUM 836
A

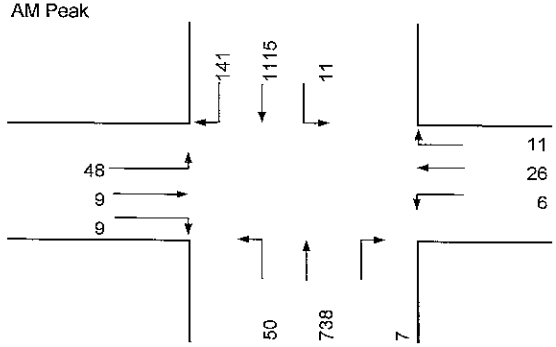
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

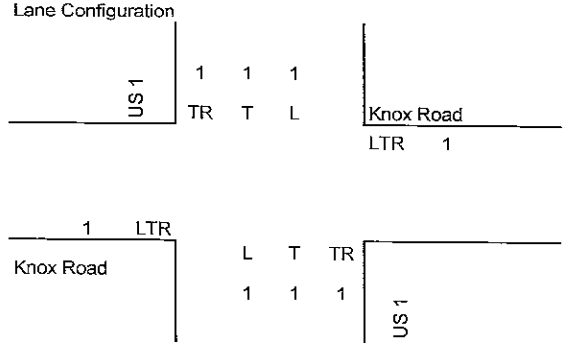
Intersection: 4: US 1/Knox Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

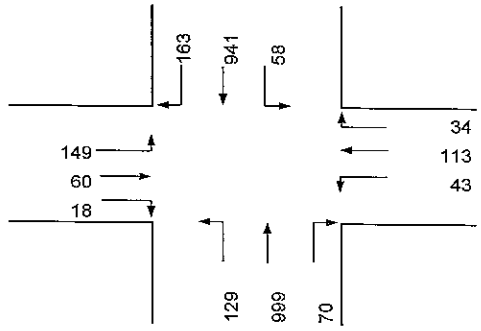
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

	NB	SB	EB	WB
RTOR/Overlap (AM):	0	0	0	0
RTOR/Overlap (PM):	0	0	0	0
Shared Left PCE (AM):	1	1	1.1	1.1
Shared Left PCE (PM):	1	1	1.1	1.1

Opposing Volume	PCE
<199	1.10
200-599	2.00
600-799	3.00
800-999	4.00
>999	5.00

Number of Lanes	Lane Use Factor
1	1.00
2	0.55
3	0.37
4	0.29
5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	71	1.00	71	6	1.00	6	77	
WB	LTR	44	1.00	44	48	1.00	48	92	*
NB	TR	745	0.55	410	11	1.00	11	421	
SB	TR	1256	0.55	691	50	1.00	50	741	*

Note:

SUM 833
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	242	1.00	242	43	1.00	43	285	
WB	LTR	194	1.00	194	149	1.00	149	343	*
NB	TR	1069	0.55	588	58	1.00	58	646	
SB	TR	1104	0.55	607	129	1.00	129	736	*

Note:

SUM 1079
B

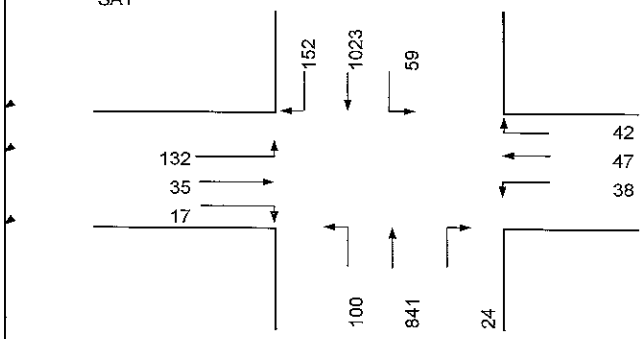
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

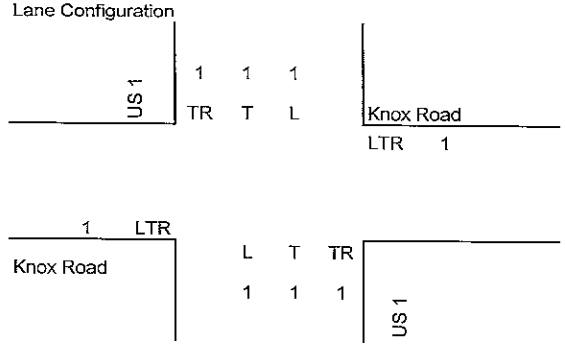
Intersection: 4: US 1/Knox Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

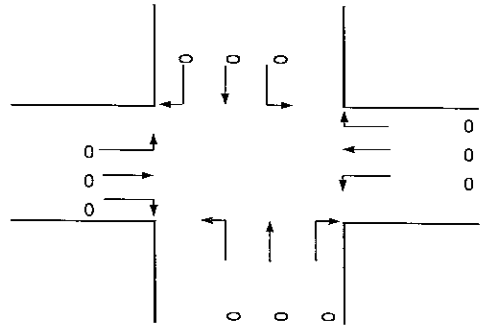
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	197	1.00	197	38	1.00	38	235	
WB	LTR	131	1.00	131	132	1.00	132	263	*
NB	TR	865	0.55	476	59	1.00	59	535	
SB	TR	1175	0.55	646	100	1.00	100	746	*

Note:

SUM 1009
B

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	0	1.00	0	0	1.00	0	0	*
WB	LTR	0	1.00	0	0	1.00	0	0	
NB	TR	0	0.55	0	0	1.00	0	0	*
SB	TR	0	0.55	0	0	1.00	0	0	

Note:

SUM 0

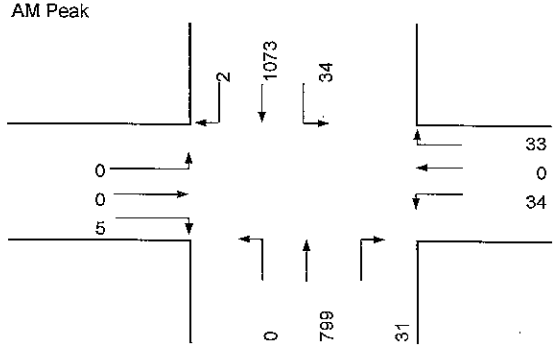
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

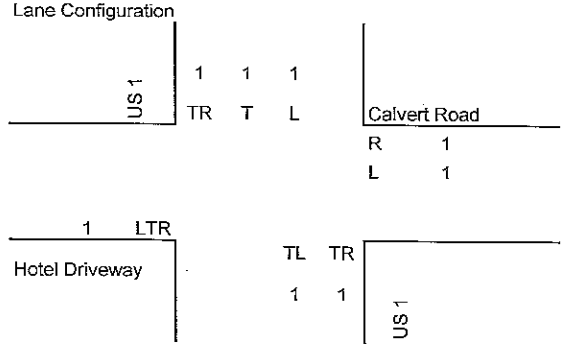
Intersection: 5: US 1/Calvert Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

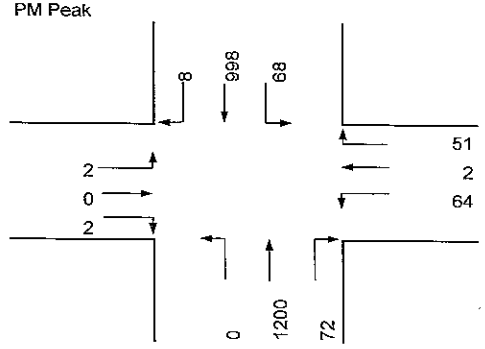
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 33
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 51
Shared Left PCE (AM):	NB	5	SB	1	EB	1.1	WB 1
Shared Left PCE (PM):	NB	5	SB	1	EB	1.1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	5	1.00	5	34	1.00	34	39	*
WB	L	34	1.00	34	0	1.00	0	34	
NB	LTR	830	0.55	457	34	1.00	34	491	
SB	TR	1075	0.55	591	0	1.00	0	591	*

Note:

SUM 630
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	4	1.00	4	64	1.00	64	68	*
WB	L	64	1.00	64	2	1.00	2	66	
NB	LTR	1272	0.55	700	68	1.00	68	768	*
SB	TR	1006	0.55	553	0	1.00	0	553	

Note:

SUM 836
A

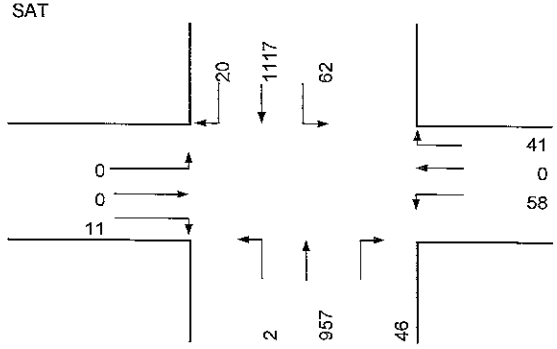
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

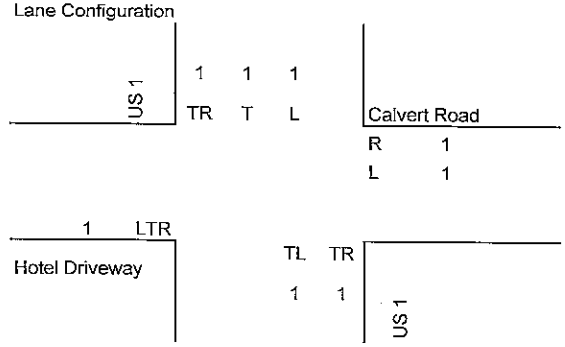
Intersection: 5: US 1/Calvert Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

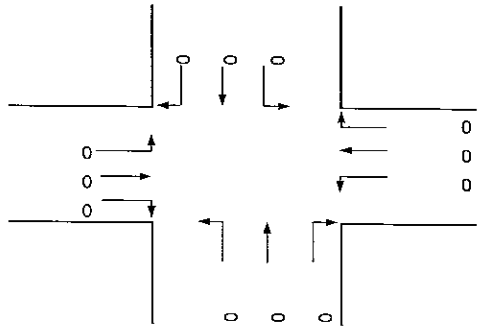
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 41
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	5	SB	1	EB	1.1	WB 1
Shared Left PCE (PM):	NB	1.1	SB	1	EB	1.1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	11	1.00	11	58	1.00	58	69	*
WB	L	58	1.00	58	0	1.00	0	58	
NB	LTR	1013	0.55	557	62	1.00	62	619	
SB	TR	1137	0.55	625	2	1.00	2	627	*

Note:

SUM 696
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	0	1.00	0	0	1.00	0	0	*
WB	L	0	1.00	0	0	1.00	0	0	
NB	LTR	0	0.55	0	0	1.00	0	0	*
SB	TR	0	0.55	0	0	1.00	0	0	

Note:

SUM 0

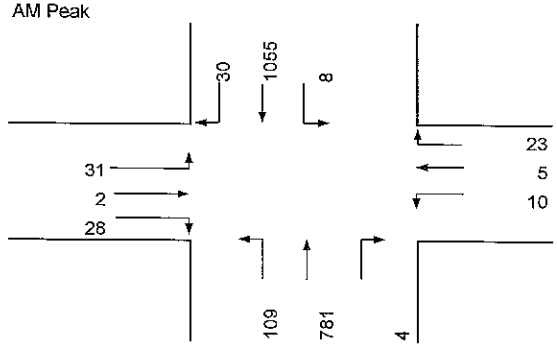
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

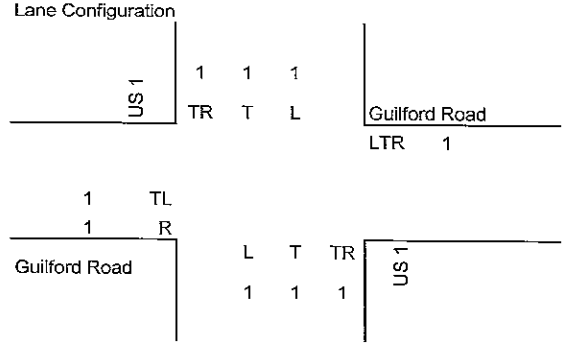
Intersection: 6: US 1/Guilford Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

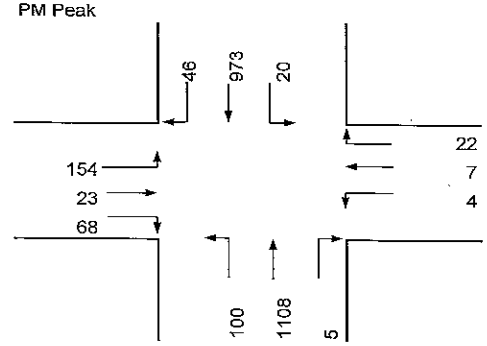
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	28	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	68	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	36	1.00	36	10	1.00	10	46	
WB	LTR	39	1.00	39	31	1.00	31	70	*
NB	TR	785	0.55	432	8	1.00	8	440	
SB	TR	1085	0.55	597	109	1.00	109	706	*
							SUM	776	
								A	

Note:

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	192	1.00	192	4	1.00	4	196	*
WB	LTR	33	1.00	33	154	1.00	154	187	
NB	TR	1113	0.55	612	20	1.00	20	632	
SB	TR	1019	0.55	560	100	1.00	100	660	*
							SUM	856	
								A	

Note:

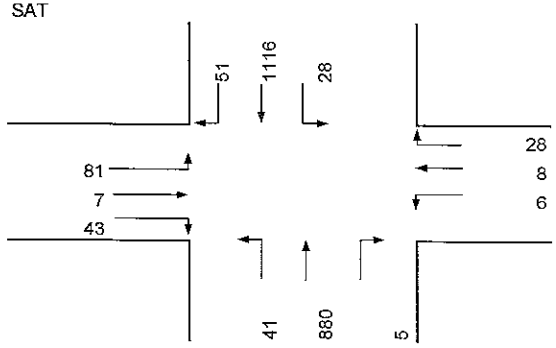
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

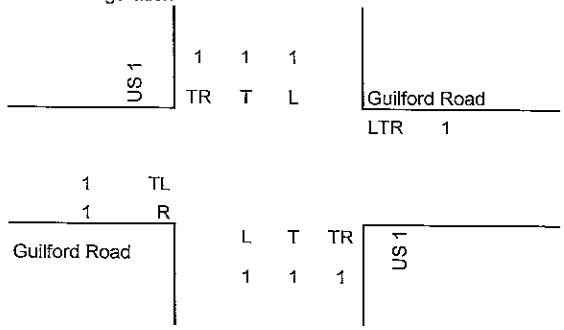
Intersection: 6: US 1/Guilford Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

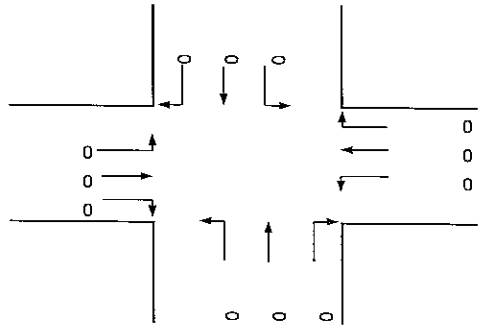
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	41	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	96	1.00	96	6	1.00	6	102	
WB	LTR	43	1.00	43	81	1.00	81	124	*
NB	TR	885	0.55	487	28	1.00	28	515	
SB	TR	1167	0.55	642	41	1.00	41	683	*

Note:

SUM 807
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	0	1.00	0	0	1.00	0	0	*
WB	LTR	0	1.00	0	0	1.00	0	0	
NB	TR	0	0.55	0	0	1.00	0	0	*
SB	TR	0	0.55	0	0	1.00	0	0	

Note:

SUM 0

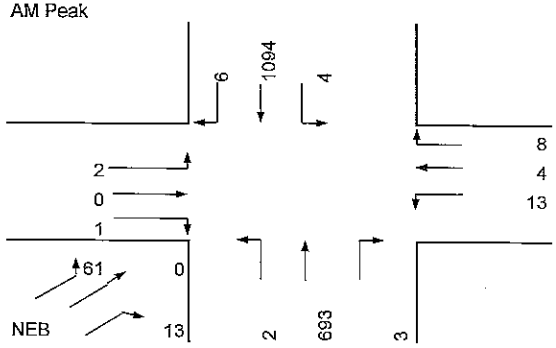
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

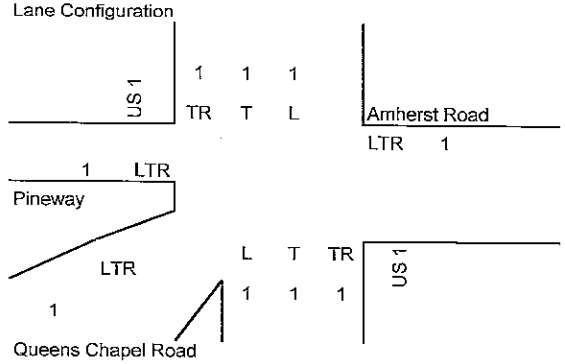
Intersection: 7: US 1/Amherst Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

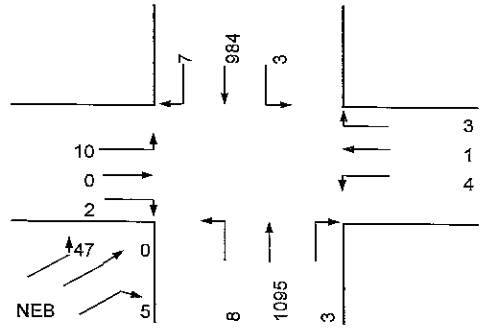
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	3	1.00	3	13	1.00	13	16	
WB	LTR	26	1.00	26	2	1.00	2	28	*
NB	TR	696	0.55	383	4	1.00	4	387	
SB	TR	1100	0.55	605	2	1.00	2	607	*
NEB	LTR	74	1.00	74	0	0	0	74	*
Note:							SUM	709	
								A	

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	13	1.00	13	4	1.00	4	17	
WB	LTR	8	1.00	8	10	1.00	10	18	*
NB	TR	1098	0.55	604	3	1.00	3	607	*
SB	TR	991	0.55	545	8	1.00	8	553	
NEB	LTR	52	1.00	52	0	0	0	52	*
Note:							SUM	677	
								A	

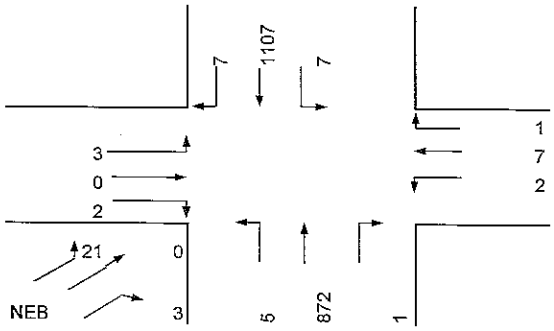
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

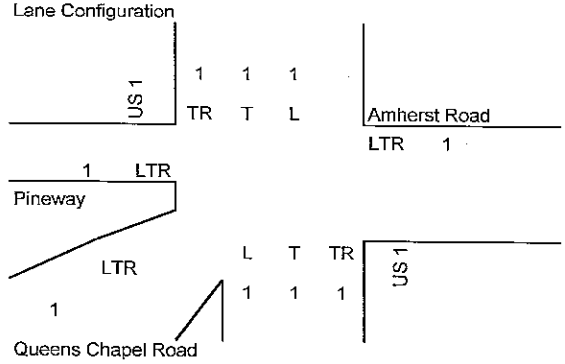
Intersection: 7: US 1/Amherst Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES

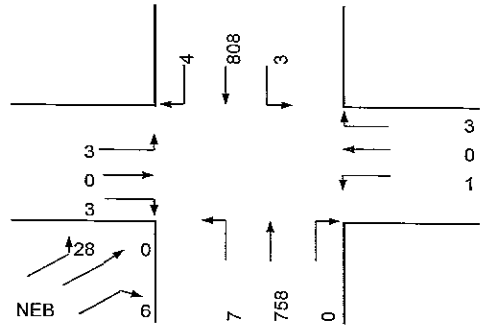
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 1.1
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	5	1.00	5	2	1.00	2	7	
WB	LTR	10	1.00	10	3	1.00	3	13	*
NB	TR	873	0.55	480	7	1.00	7	487	
SB	TR	1114	0.55	613	5	1.00	5	618	*
NEB	LTR	24	1.00	24	0	0	0	24	*
Note:							SUM	655	
								A	

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	LTR	6	1.00	6	1	1.00	1	7	*
WB	LTR	4	1.00	4	3	1.00	3	7	
NB	TR	758	0.55	417	3	1.00	3	420	
SB	TR	812	0.55	447	7	1.00	7	454	*
NEB	LTR	34	1.00	34	0	0	0	34	*
Note:							SUM	495	
								A	

Date Printed: 8/31/2012

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	SK	Intersection	US 1/Van Buren Street
Agency/Co.	Wells + Associates	Jurisdiction	Prince George's County
Date Performed	11/19/2011	Analysis Year	Background
Analysis Time Period	AM Peak		

Project Description Riverdale	
East/West Street: Van Buren Street	North/South Street: US 1
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 (veh/h)	26	702			1080	51
Peak-Hour Factor, PHF	0.96	0.96	1.00	1.00	0.96	0.96
Hourly Flow Rate, HFR (veh/h)	27	731	0	0	1125	53
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	0	24			
Peak-Hour Factor, PHF	0.96	0.96	0.96	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	2	0	25	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	0	0
Configuration		LTR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LTR	
v (veh/h)	27						27	
C (m) (veh/h)	589						455	
v/c	0.05						0.06	
95% queue length	0.14						0.19	
Control Delay (s/veh)	11.4						13.4	
LOS	B						B	
Approach Delay (s/veh)	--	--				13.4		
Approach LOS	--	--				B		

Copyright © 2008 University of Florida, All Rights Reserved HCS+TM Version 5.4 Generated: 8/31/2012 4:11 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*SK*
Agency/Co.	*Wells + Associates*
Date Performed	*11/19/2011*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*US 1/Van Buren Street*
Jurisdiction	*Prince George's County*
Analysis Year	*Background*

Project Description *Riverdale*

East/West Street: *Van Buren Street* | North/South Street: *US 1*

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 (veh/h)	26	1098			987	10
Peak-Hour Factor, PHF	0.95	0.95	1.00	1.00	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	27	1155	0	0	1038	10
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	5		17			
Peak-Hour Factor, PHF	0.95	1.00	0.95	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	5	0	17	0	0	0
Percent Heavy Vehicles	2	0	2	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	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	27						22	
C (m) (veh/h)	660						396	
v/c	0.04						0.06	
95% queue length	0.13						0.18	
Control Delay (s/veh)	10.7						14.6	
LOS	B						B	
Approach Delay (s/veh)	--	--				14.6		
Approach LOS	--	--				B		

Copyright © 2008 University of Florida, All Rights Reserved *HCS+*™ Version 5.4 Generated: 8/31/2012 4:14 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	SK	Intersection	US 1/Van Buren Street
Agency/Co.	Wells + Associates	Jurisdiction	Prince George's County
Date Performed	11/19/2011	Analysis Year	Background
Analysis Time Period	SAT		

Project Description *Riverdale*

East/West Street: *Van Buren Street*	North/South Street: *US 1*
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 (veh/h)	12	855			1073	17
Peak-Hour Factor, PHF	0.95	0.95	1.00	1.00	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	12	900	0	0	1129	17
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	4	0	6			
Peak-Hour Factor, PHF	0.95	0.95	0.95	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	4	0	6	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	0	0
Configuration		LTR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LTR	
v (veh/h)	12						10	
C (m) (veh/h)	605						318	
v/c	0.02						0.03	
95% queue length	0.06						0.10	
Control Delay (s/veh)	11.1						16.7	
LOS	B						C	
Approach Delay (s/veh)	--	--				16.7		
Approach LOS	--	--				C		

Copyright © 2008 University of Florida, All Rights Reserved HCS+TM Version 5.4 Generated: 8/31/2012 4:15 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	SK	Intersection	US 1/Van Buren Street
Agency/Co.	Wells + Associates	Jurisdiction	Prince George's County
Date Performed	11/19/2011	Analysis Year	Background
Analysis Time Period	Mid Day		

Project Description Riverdale	
East/West Street: Van Buren Street	North/South Street: US 1
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 (veh/h)	9	765			789	5
Peak-Hour Factor, PHF	0.95	0.95	1.00	1.00	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	9	805	0	0	830	5
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	0	6			
Peak-Hour Factor, PHF	0.95	0.95	0.95	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	2	0	6	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	0	0
Configuration		LTR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LTR	
v (veh/h)	9						8	
C (m) (veh/h)	794						486	
v/c	0.01						0.02	
95% queue length	0.03						0.05	
Control Delay (s/veh)	9.6						12.5	
LOS	A						B	
Approach Delay (s/veh)	--	--				12.5		
Approach LOS	--	--				B		

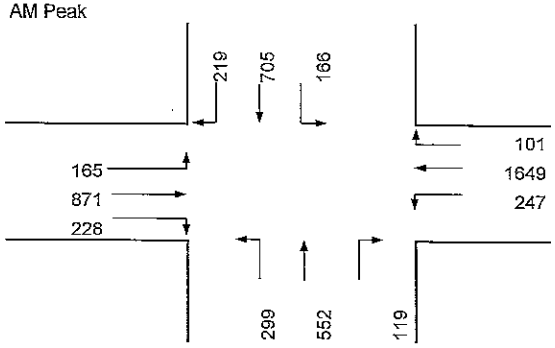
Copyright © 2008 University of Florida, All Rights Reserved HCS+TM Version 5.4 Generated: 8/31/2012 4:27 PM

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

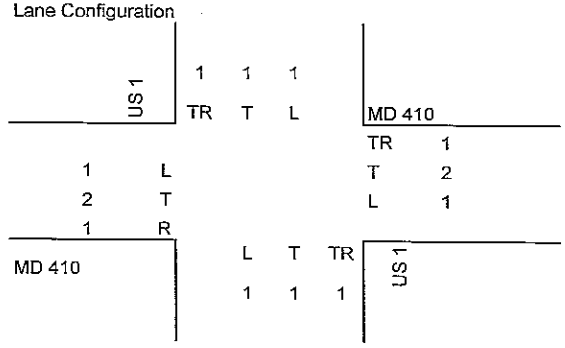
Intersection: 11: US 1/MD 410
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

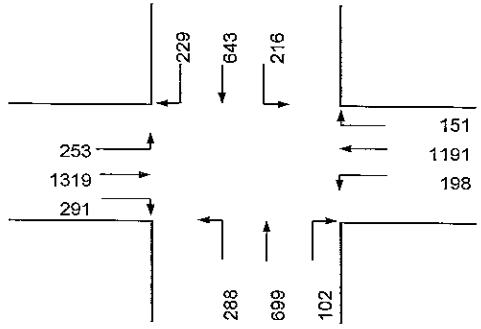
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	228	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	288	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	871	0.55	479	247	1.00	247	726	
WB	TR	1750	0.37	648	165	1.00	165	813	*
NB	TR	671	0.55	369	166	1.00	166	535	
SB	TR	924	0.55	508	299	1.00	299	807	*

Note:

SUM 1620
F

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	1319	0.55	725	198	1.00	198	923	*
WB	TR	1342	0.37	497	253	1.00	253	750	
NB	TR	801	0.55	441	216	1.00	216	657	
SB	TR	872	0.55	480	288	1.00	288	768	*

Note:

SUM 1691
F

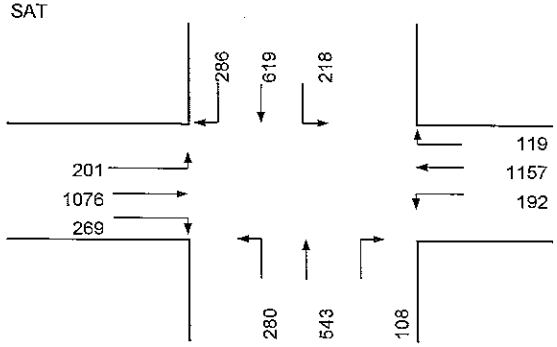
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

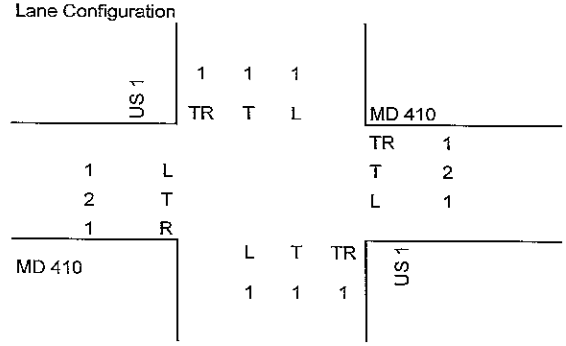
Intersection: 11: US 1/MD 410
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

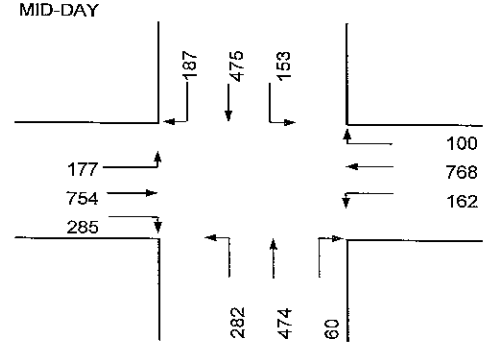
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	269	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	282	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	1076	0.55	592	192	1.00	192	784	*
WB	TR	1276	0.37	472	201	1.00	201	673	
NB	TR	651	0.55	358	218	1.00	218	576	
SB	TR	905	0.55	498	280	1.00	280	778	*

Note:

SUM 1562
E

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	754	0.55	415	162	1.00	162	577	*
WB	TR	868	0.37	321	177	1.00	177	498	
NB	TR	534	0.55	294	153	1.00	153	447	
SB	TR	662	0.55	364	282	1.00	282	646	*

Note:

SUM 1223
C

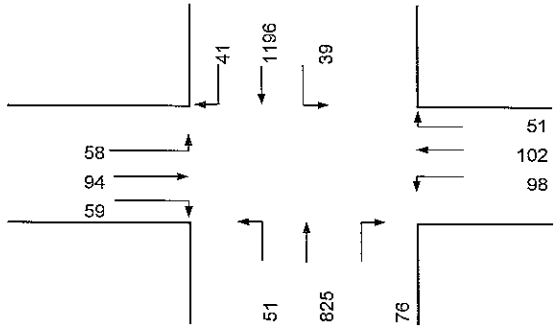
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

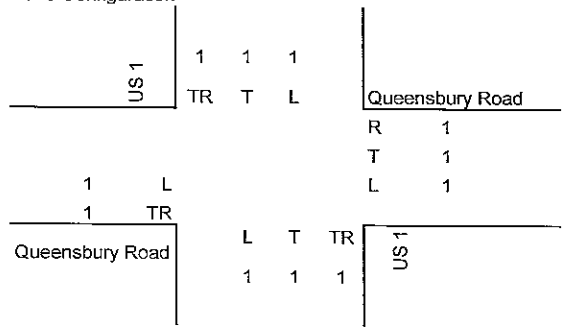
Intersection: 12: US 1/Queensbury Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

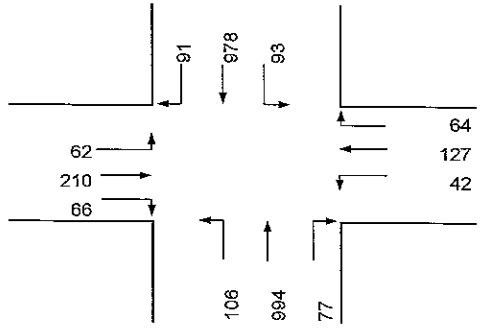
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 39
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 64
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	153	1.00	153	98	1.00	98	251	*
WB	T	102	1.00	102	58	1.00	58	160	
NB	TR	901	0.55	496	39	1.00	39	535	
SB	TR	1237	0.55	680	51	1.00	51	731	*

Note:

SUM 982
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	276	1.00	276	42	1.00	42	318	*
WB	T	127	1.00	127	62	1.00	62	189	
NB	TR	1071	0.55	589	93	1.00	93	682	
SB	TR	1069	0.55	588	106	1.00	106	694	*

Note:

SUM 1012
B

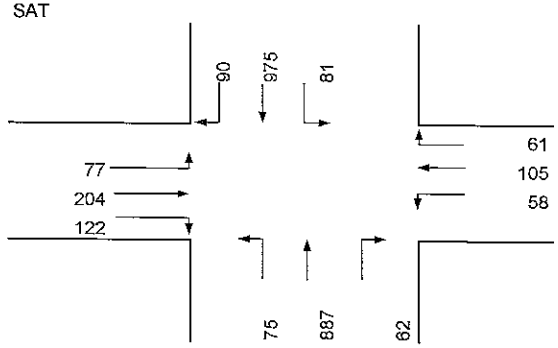
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

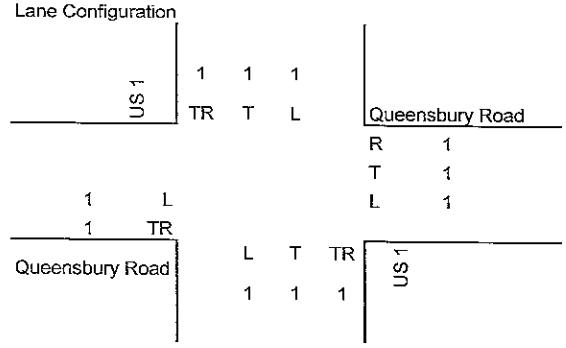
Intersection: 12: US 1/Queensbury Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

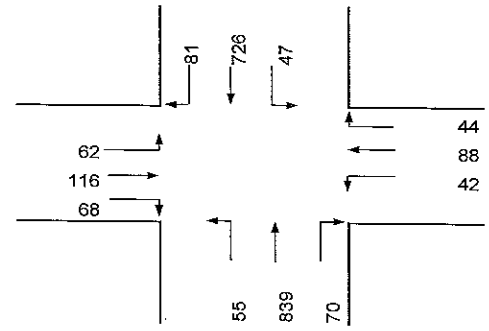
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 61
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 44
Shared Left PCE (AM):	NB	1	SB	1	EB	1	WB 1
Shared Left PCE (PM):	NB	1	SB	1	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	326	1.00	326	58	1.00	58	384	*
WB	T	105	1.00	105	77	1.00	77	182	
NB	TR	949	0.55	522	81	1.00	81	603	
SB	TR	1065	0.55	586	75	1.00	75	661	*

Note:

SUM 1045
B

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	184	1.00	184	42	1.00	42	226	*
WB	T	88	1.00	88	62	1.00	62	150	
NB	TR	909	0.55	500	47	1.00	47	547	*
SB	TR	807	0.55	444	55	1.00	55	499	

Note:

SUM 773
A

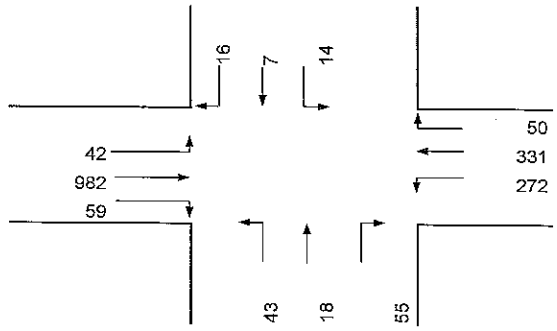
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

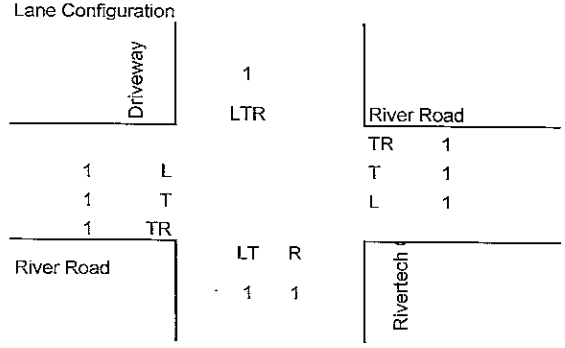
Intersection: 13. River Road/River Tech Ct
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

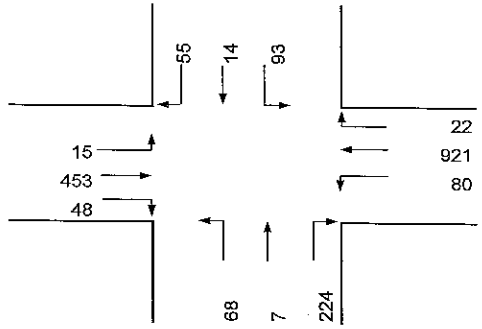
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: ____ Split: ____ Stop: X Ways: ____

RTOR/Overlap (AM):	NB	0	SB	0	EB	0	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1.1	SB	1.1	EB	1	WB 1
Shared Left PCE (PM):	NB	1.1	SB	1.1	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	1041	0.55	573	272	1.00	272	845	*
WB	TR	381	0.55	210	42	1.00	42	252	
NB	TL	65	1.00	65	14	1.00	14	79	
SB	LTR	38	1.00	38	43	1.00	43	81	*

Note:
Spacing Available to accommodate two lanes on North Bound

SUM 926
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	501	0.55	276	80	1.00	80	356	
WB	TR	943	0.55	519	15	1.00	15	534	*
NB	TL	82	1.00	82	93	1.00	93	175	
SB	LTR	171	1.00	171	68	1.00	68	239	*

Note:
Spacing Available to accommodate two lanes on North Bound

SUM 773
A

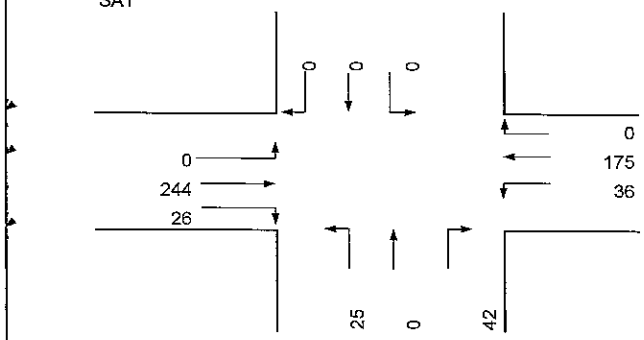
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

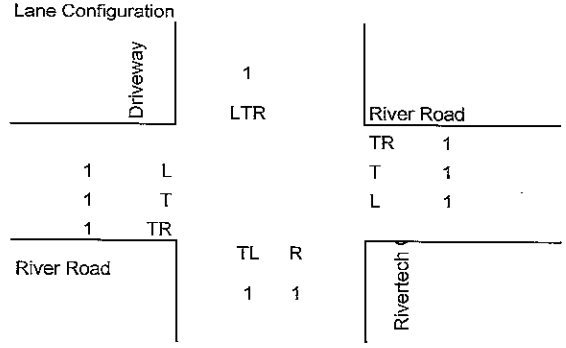
Intersection: 13. River Road/River Tech Ct
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

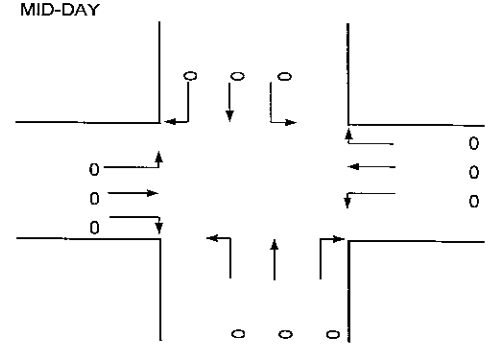
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: x Split: Stop: X Ways:

RTOR/Overlap (AM): NB 0 SB 0 EB 0 WB 0
RTOR/Overlap (PM): NB 0 SB 0 EB 0 WB 0

Shared Left PCE (AM): NB 1 SB 1 EB 1 WB 1
Shared Left PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	270	0.55	149	36	1.00	36	185	*
WB	TR	175	0.55	96	0	1.00	0	96	
NB	TL	25	1.00	25	0	1.00	0	25	*
SB	LTR	0	1.00	0		1.00	0	0	

Note:

SUM 210
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TR	0	0.55	0	0	1.00	0	0	*
WB	TR	0	0.55	0	0	1.00	0	0	
NB	TL	0	1.00	0	0	1.00	0	0	*
SB	LTR	0	1.00	0	0	1.00	0	0	

Note:

SUM 0
A

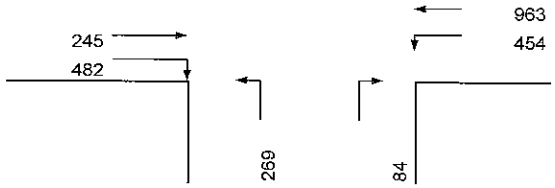
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

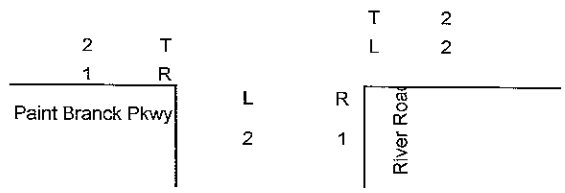
Intersection: 14. River Road at Paint Branch Pkwy
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

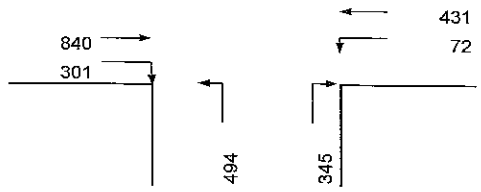
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: Stop: Ways:

	NB	SB	EB	WB
RTOR/Overlap (AM):	84	0	269	0
RTOR/Overlap (PM):	72	0	301	0
Shared Left PCE (AM):	1	1	1	1
Shared Left PCE (PM):	1	1	1	1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	245	0.55	135	454	0.60	272	407	
WB	T	963	0.55	530	0	1.00	0	530	*
NB	L	269	0.60	161	0	1.00	0	161	*

Note:

SUM 691
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	840	0.55	462	72	0.60	43	505	*
WB	T	431	0.55	237	0	1.00	0	237	
NB	L	494	0.60	296	0	1.00	0	296	*

Note:

SUM 801
A

Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

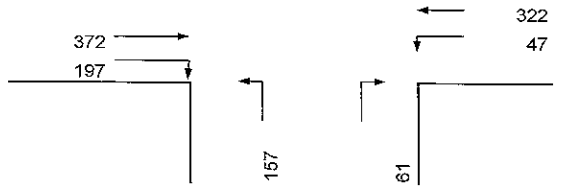
Intersection: 14. River Road at Paint Branch Pkwy
Jurisdiction: Prince George's County
Scenario/Design Year: Background
Computed by: SK

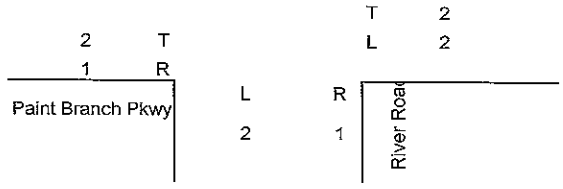
WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

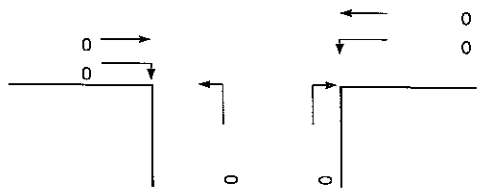
SAT

Lane Configuration

MID-DAY







Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM): NB 47 SB 0 EB 157 WB 0
RTOR/Overlap (PM): NB 0 SB 0 EB 0 WB 0

Shared Left PCE (AM): NB 1 SB 1 EB 1 WB 1
Shared Left PCE (PM): NB 1 SB 1 EB 1 WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor
<199	1.10	1	1.00
200-599	2.00	2	0.55
600-799	3.00	3	0.37
800-999	4.00	4	0.29
>999	5.00	5	0.25

Critical Lane Volume		
A	≤	1,000
B	≤	1,150
C	≤	1,300
D	≤	1,450
E	≤	1,600
F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	372	0.55	205	47	0.60	28	233	*
WB	T	322	0.55	177	0	1.00	0	177	
NB	L	157	0.60	94	0	1.00	0	94	*

Note:

SUM 327
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	T	0	0.55	0	0	0.60	0	0	*
WB	T	0	0.55	0	0	1.00	0	0	
NB	L	0	0.60	0	0	1.00	0	0	*

Note:

SUM 0

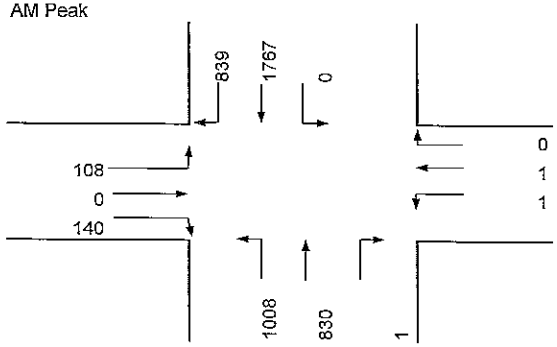
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

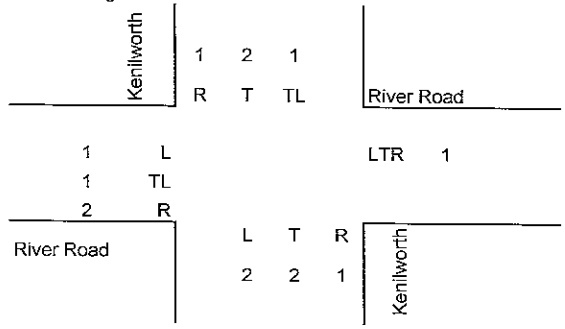
Intersection: 15: Kenilworth Road/River Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background (with Improvements)
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

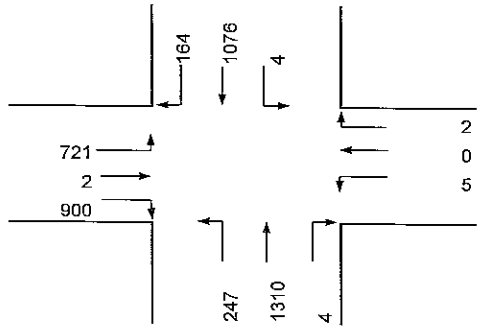
AM Peak



Lane Configuration



PM Peak



Intersection Control: Signal: X Split: X Stop: Ways: E/W

RTOR/Overlap (AM):	NB	1	SB	108	EB	140	WB 0
RTOR/Overlap (PM):	NB	4	SB	164	EB	247	WB 0
Shared Left PCE (AM):	NB	1	SB	4	EB	1	WB 1
Shared Left PCE (PM):	NB	1	SB	5	EB	1	WB 1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	108	0.60	65	0	1.00	0	65	*
WB	LTR	2	1.00	2	0	1.00	0	2	*
NB	T	830	0.55	457	0	1.00	0	457	
SB	TL	1767	0.37	654	1008	0.60	605	1259	*

Note:

SUM 1326
D

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	723	0.60	434	0	1.00	0	434	*
WB	LTR	7	1.00	7	0	1.00	0	7	*
NB	T	1310	0.55	721	4	1.00	4	725	*
SB	TL	1096	0.37	406	247	0.60	148	554	

Note:

SUM 1166
C

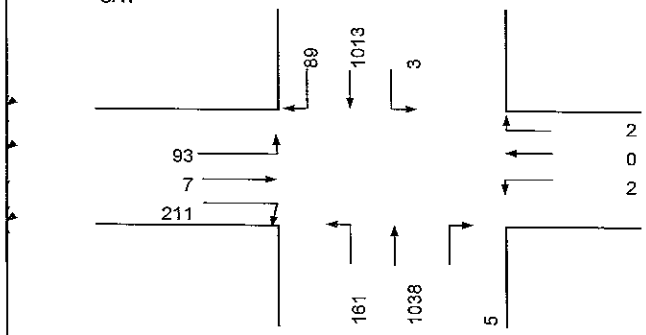
Date Printed: 8/31/2012

Cafritz Property at Riverdale Park
Critical Lane Volue
Level of Service Calculations

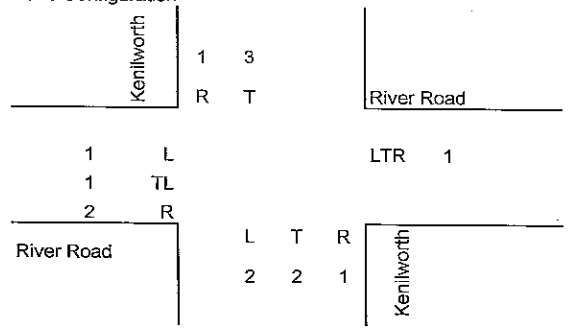
Intersection: 15: Kenilworth Road/River Road
Jurisdiction: Prince George's County
Scenario/Design Year: Background (with Riverside Phase I Improvements)
Computed by: SK

WELLS + ASSOCIATES
TRANSPORTATION, TRAFFIC, AND PARKING CONSULTANTS
170 Jennifer Road, Annapolis, Maryland 20401
Phone: (410)266-5723 Facsimile: (410)266-9189

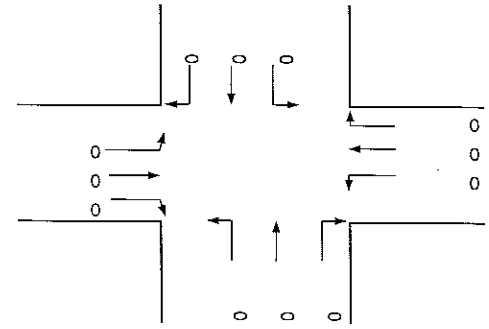
SAT



Lane Configuration



MID-DAY



Intersection Control: Signal: X Split: Stop: Ways:

RTOR/Overlap (AM):	NB	2	SB	89	EB	161	WB 0
RTOR/Overlap (PM):	NB	0	SB	0	EB	0	WB 0
Shared Left PCE (AM):	NB	1	SB	1	EB	1.1	WB 2
Shared Left PCE (PM):	NB	1	SB	1	EB	1.1	WB 1.1

Opposing Volume	PCE	Number of Lanes	Lane Use Factor	Critical Lane Volume		
<199	1.10	1	1.00	A	≤	1,000
200-599	2.00	2	0.55	B	≤	1,150
600-799	3.00	3	0.37	C	≤	1,300
800-999	4.00	4	0.29	D	≤	1,450
>999	5.00	5	0.25	E	≤	1,600
				F	>	1,600

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	109	0.60	66	0	1.00	0	66	*
WB	LTR	6	1.00	6	0	1.00	0	6	*
NB	T	1038	0.55	571	3	1.00	3	574	*
SB	T	1013	0.37	375	161	0.60	97	472	

Note:

SUM 646
A

Phase	Movement	Volume	Lane Use Factor	Lane Volume	Opposing Lefts	Lane Use Factor	Opposing Volume	Critical Lane Volume	*
EB	TL	0	0.60	0	0	1.00	0	0	*
WB	LTR	0	1.00	0	0	1.00	0	0	*
NB	T	0	0.55	0	0	1.00	0	0	*
SB	T	0	0.37	0	0	0.60	0	0	

Note:

SUM 0

Date Printed: 8/31/2012

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	sk
Agency/Co.	Wells and Associates
Date Performed	2/25/2012
Analysis Time Period	AM Peak

Site Information

Intersection	Rhode Island and Queens Bury
Jurisdiction	Prince Georges County
Analysis Year	BACKGROUND

Project ID Cafritz

East/West Street: Queensbury

North/South Street: Rhode Island

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	10	119	4	177	226	6
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	3	1	55	3	0	1
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.95		0.95		0.95		0.95	
Flow Rate (veh/h)	139		429		61		4	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.1		0.4		0.0		0.8	
Prop. Right-Turns	0.0		0.0		0.9		0.3	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.1		-0.5		0.0	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.12		0.38		0.05		0.00	
hd, final value (s)	4.54		4.33		4.66		5.31	
x, final value	0.18		0.52		0.08		0.01	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.5		2.3		2.7		3.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	389		679		311		254	
Delay (s/veh)	8.50		11.84		8.06		8.34	
LOS	A		B		A		A	
Approach: Delay (s/veh)	8.50		11.84		8.06		8.34	
LOS	A		B		A		A	
Intersection Delay (s/veh)	10.72							
Intersection LOS	B							

Copyright © 2008 University of Florida, All Rights Reserved

HCS+™ Version 5.4 Generated: 7/9/2012 6:27 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	sk
Agency/Co.	Wells and Associates
Date Performed	2/25/2012
Analysis Time Period	PM Peak

Site Information

Intersection	Rhode Island and Queens Bury
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID Cafritz

East/West Street: Queensbury

North/South Street: Rhode Island

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	5	300	10	54	173	8
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	22	0	205	8	3	25
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.95		0.95		0.95		0.95	
Flow Rate (veh/h)	330		246		238		37	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.0		0.2		0.1		0.2	
Prop. Right-Turns	0.0		0.0		0.9		0.7	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.1		-0.5		-0.3	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.29		0.22		0.21		0.03	
hd, final value (s)	5.01		5.15		4.94		5.45	
x, final value	0.46		0.35		0.33		0.06	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	3.0		3.2		2.9		3.5	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	580		496		488		287	
Delay (s/veh)	12.18		10.93		10.33		8.78	
LOS	B		B		B		A	
Approach: Delay (s/veh)	12.18		10.93		10.33		8.78	
LOS	B		B		B		A	
Intersection Delay (s/veh)	11.15							
Intersection LOS	B							

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:27 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	sk
Agency/Co.	Wells and Associates
Date Performed	2/25/2012
Analysis Time Period	SAT Peak

Site Information

Intersection	Rhode Island and Queens Bury
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID *Cafritz*

East/West Street: *Queensbury* North/South Street: *Rhode Island*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	9	248	7	33	166	10
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	7	1	40	8	1	7
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.95		0.95		0.95		0.95	
Flow Rate (veh/h)	277		218		50		16	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.0		0.2		0.1		0.5	
Prop. Right-Turns	0.0		0.0		0.8		0.4	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.0		-0.4		-0.1	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.25		0.19		0.04		0.01	
hd, final value (s)	4.32		4.39		4.58		4.95	
x, final value	0.33		0.27		0.06		0.02	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.3		2.4		2.6		2.9	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	527		468		300		266	
Delay (s/veh)	9.45		8.97		7.89		8.06	
LOS	A		A		A		A	
Approach: Delay (s/veh)	9.45		8.97		7.89		8.06	
LOS	A		A		A		A	
Intersection Delay (s/veh)	9.09							
Intersection LOS	A							

Copyright © 2008 University of Florida, All Rights Reserved *HCS+*™ Version 5.4 Generated: 7/9/2012 6:27 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	sk
Agency/Co.	Wells and Associates
Date Performed	2/25/2012
Analysis Time Period	Mid Day Peak

Site Information

Intersection	Rhode Island and Queens Bury
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID *Cafritz*

East/West Street: *Queensbury* North/South Street: *Rhode Island*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	5	172	3	32	144	8
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	2	0	57	6	3	7
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.95		0.95		0.95		0.95	
Flow Rate (veh/h)	189		192		62		16	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.0		0.2		0.0		0.4	
Prop. Right-Turns	0.0		0.0		1.0		0.4	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.0		0.0		-0.5		-0.2	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.17		0.17		0.06		0.01	
hd, final value (s)	4.31		4.32		4.23		4.67	
x, final value	0.23		0.23		0.07		0.02	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.3		2.3		2.2		2.7	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	439		442		312		266	
Delay (s/veh)	8.57		8.61		7.56		7.77	
LOS	A		A		A		A	
Approach: Delay (s/veh)	8.57		8.61		7.56		7.77	
LOS	A		A		A		A	
Intersection Delay (s/veh)	8.42							
Intersection LOS	A							

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:28 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	SK
Agency/Co.	Wells & Associates
Date Performed	5/30/2012
Analysis Time Period	AM Peak

Site Information

Intersection	Queens Bury Rd/Lafayette Ave.
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID Cafritz Property at Riverdale Park

East/West Street: Queens Bury Rd

North/South Street: Lafayette Ave

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	42	44	47	0	10	0
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	140	22	5	0	10	178
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.92		0.92		0.92		0.92	
Flow Rate (veh/h)	143		10		180		203	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.3		0.0		0.8		0.0	
Prop. Right-Turns	0.4		0.0		0.0		1.0	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.0		0.2		-0.5	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.13		0.01		0.16		0.18	
hd, final value (s)	4.65		4.98		4.67		3.96	
x, final value	0.18		0.01		0.23		0.22	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.6		3.0		2.7		2.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	393		260		430		453	
Delay (s/veh)	8.70		8.05		9.09		8.09	
LOS	A		A		A		A	
Approach: Delay (s/veh)	8.70		8.05		9.09		8.09	
LOS	A		A		A		A	
Intersection Delay (s/veh)	8.59							
Intersection LOS	A							

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:29 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	SK
Agency/Co.	Wells & Associates
Date Performed	5/30/2012
Analysis Time Period	PM Peak

Site Information

Intersection	Queens Bury Rd/Lafayette Ave.
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID *Cafritz Property at Riverdale Park*

East/West Street: *Queens Bury Rd* North/South Street: *Lafayette Ave*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	180	107	200	0	29	3
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	103	23	11	4	14	90
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.96		0.96		0.96		0.96	
Flow Rate (veh/h)	506		33		141		111	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.4		0.0		0.8		0.0	
Prop. Right-Turns	0.4		0.1		0.1		0.8	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.0		0.1		-0.5	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.45		0.03		0.13		0.10	
hd, final value (s)	4.50		5.22		5.52		4.98	
x, final value	0.63		0.05		0.22		0.15	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.5		3.2		3.5		3.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	756		283		391		361	
Delay (s/veh)	14.93		8.48		10.03		8.88	
LOS	B		A		B		A	
Approach: Delay (s/veh)	14.93		8.48		10.03		8.88	
LOS	B		A		B		A	
Intersection Delay (s/veh)	12.94							
Intersection LOS	B							

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:29 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	SK
Agency/Co.	Wells & Associates
Date Performed	5/30/2012
Analysis Time Period	SAT

Site Information

Intersection	Queens Bury Rd/Lafayette Ave.
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID *Cafritz Property at Riverdale Park*

East/West Street: *Queens Bury Rd* North/South Street: *Lafayette Ave*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	62	61	162	2	34	1
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	117	12	3	2	8	40
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.88		0.88		0.88		0.88	
Flow Rate (veh/h)	323		41		148		56	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		0.0		0.9		0.0	
Prop. Right-Turns	0.6		0.0		0.0		0.8	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.3		0.0		0.2		-0.4	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.29		0.04		0.13		0.05	
hd, final value (s)	4.21		4.82		5.00		4.49	
x, final value	0.38		0.05		0.21		0.07	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.2		2.8		3.0		2.5	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	573		291		398		306	
Delay (s/veh)	9.74		8.10		9.28		7.83	
LOS	A		A		A		A	
Approach: Delay (s/veh)	9.74		8.10		9.28		7.83	
LOS	A		A		A		A	
Intersection Delay (s/veh)	9.32							
Intersection LOS	A							

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:32 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	SK
Agency/Co.	Wells & Associates
Date Performed	5/30/2012
Analysis Time Period	Mid day

Site Information

Intersection	Queens Bury Rd/Lafayette Ave.
Jurisdiction	Prince Georges County
Analysis Year	Background

Project ID *Cafritz Property at Riverdale Park*

East/West Street: *Queens Bury Rd* North/South Street: *Lafayette Ave*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	101	49	93	1	24	0
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	104	24	4	1	9	55
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.89		0.89		0.89		0.89	
Flow Rate (veh/h)	272		27		146		72	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.4		0.0		0.8		0.0	
Prop. Right-Turns	0.4		0.0		0.0		0.8	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		0.0		0.2		-0.5	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.24		0.02		0.13		0.06	
hd, final value (s)	4.36		4.80		4.86		4.32	
x, final value	0.33		0.04		0.20		0.09	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t_s (s)	2.4		2.8		2.9		2.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	522		277		396		322	
Delay (s/veh)	9.49		7.98		9.05		7.73	
LOS	A		A		A		A	
Approach: Delay (s/veh)	9.49		7.98		9.05		7.73	
LOS	A		A		A		A	
Intersection Delay (s/veh)	9.04							
Intersection LOS	A							

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:33 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	sk	Intersection	Queensbury Rd/Natoli Place
Agency/Co.	Wells and Associates	Jurisdiction	Prince Georges County
Date Performed	5/30/2012	Analysis Year	Background
Analysis Time Period	AM Peak		

Project Description	Cafritz Property at Riverdale Park
East/West Street: Queens Bury Road	North/South Street: Natoli Place
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	39	1	0	10	1
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	0	42	1	0	10	1
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	0	4	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	1	0	0	4	0	0
Percent Heavy Vehicles	2	2	2	2	2	2
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	0		1			4	
C (m) (veh/h)	1608	1566		947			947	
v/c	0.00	0.00		0.00			0.00	
95% queue length	0.00	0.00		0.00			0.01	
Control Delay (s/veh)	7.2	7.3		8.8			8.8	
LOS	A	A		A			A	
Approach Delay (s/veh)	--	--	8.8			8.8		
Approach LOS	--	--	A			A		

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:33 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	sk	Intersection	Queensbury Rd/Natoli Place
Agency/Co.	Wells and Associates	Jurisdiction	Prince Georges County
Date Performed	5/30/2012	Analysis Year	Background
Analysis Time Period	PM Peak		

Project Description *Cafritz Property at Riverdale Park*

East/West Street: *Queens Bury Road* | North/South Street: *Natoli Place*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	1	95	0	0	35	16
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	1	103	0	0	38	17
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	0	11	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	1	0	0	11	0	0
Percent Heavy Vehicles	2	2	2	2	2	2
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	1	0		1			11	
C (m) (veh/h)	1550	1489		816			816	
v/c	0.00	0.00		0.00			0.01	
95% queue length	0.00	0.00		0.00			0.04	
Control Delay (s/veh)	7.3	7.4		9.4			9.5	
LOS	A	A		A			A	
Approach Delay (s/veh)	--	--	9.4			9.5		
Approach LOS	--	--	A			A		

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:34 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	sk	Intersection	Queensbury Rd/Natoli Place
Agency/Co.	Wells and Associates	Jurisdiction	Prince Georges County
Date Performed	5/30/2012	Analysis Year	Background
Analysis Time Period	SAT		

Project Description	Cafritz Property at Riverdale Park
East/West Street: Queens Bury Road	North/South Street: Natoli Place
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	2	63	0	0	33	5
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	2	68	0	0	35	5
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	1	0	0	4	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	1	0	0	4	0	0
Percent Heavy Vehicles	2	2	2	2	2	2
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	2	0		1			4	
C (m) (veh/h)	1570	1533		867			867	
v/c	0.00	0.00		0.00			0.00	
95% queue length	0.00	0.00		0.00			0.01	
Control Delay (s/veh)	7.3	7.3		9.2			9.2	
LOS	A	A		A			A	
Approach Delay (s/veh)	--	--	9.2			9.2		
Approach LOS	--	--	A			A		

Copyright © 2008 University of Florida, All Rights Reserved HCS+TM Version 5.4 Generated: 7/10/2012 12:57 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	sk	Intersection	Queensbury Rd/Natoli Place
Agency/Co.	Wells and Associates	Jurisdiction	Prince Georges County
Date Performed	5/30/2012	Analysis Year	Background
Analysis Time Period	Mid-day		

Project Description *Cafritz Property at Riverdale Park*

East/West Street: *Queens Bury Road* | North/South Street: *Natoli Place*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	47	0	1	29	6
Peak-Hour Factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Hourly Flow Rate, HFR (veh/h)	0	59	0	1	36	7
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	2	1	2	0	0
Peak-Hour Factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Hourly Flow Rate, HFR (veh/h)	0	2	1	2	0	0
Percent Heavy Vehicles	2	2	2	2	2	2
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
v (veh/h)	0	1		3			2	
C (m) (veh/h)	1566	1545		847			876	
v/c	0.00	0.00		0.00			0.00	
95% queue length	0.00	0.00		0.01			0.01	
Control Delay (s/veh)	7.3	7.3		9.3			9.1	
LOS	A	A		A			A	
Approach Delay (s/veh)	--	--	9.3			9.1		
Approach LOS	--	--	A			A		

Copyright © 2008 University of Florida, All Rights Reserved HCS+™ Version 5.4 Generated: 7/9/2012 6:43 PM