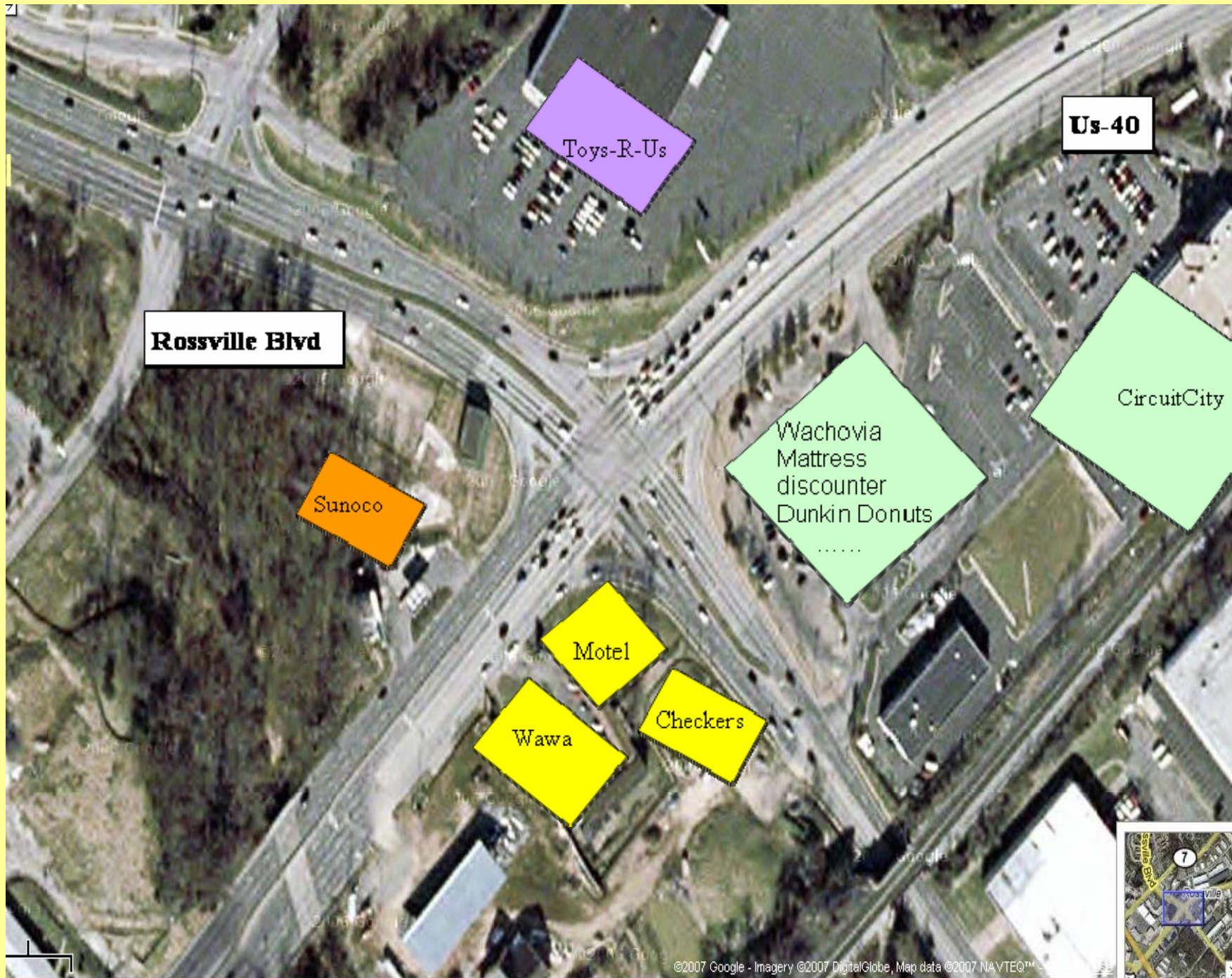


# US 40 @ Rossville Blvd



OOTS/ Saed R / Lai / Kim – Jan 2007



**Rossville Blvd**

**Us-40**

Toys-R-Us

Sunoco

Wachovia  
Mattress  
discounter  
Dunkin Donuts  
.....

CircuitCity

Motel

Wawa

Checkers



- CLV analysis for the Conventional Intersection



# Critical Lane Volume

Click on the blue circle to input for an intersection.

Analyst

Department

Year

Arterial

Location

Comments

Volume  Growth Factor

Load  Print

Save  Save AS ...

Back  Output

Exit

Display CLV Results for

Peak Hours

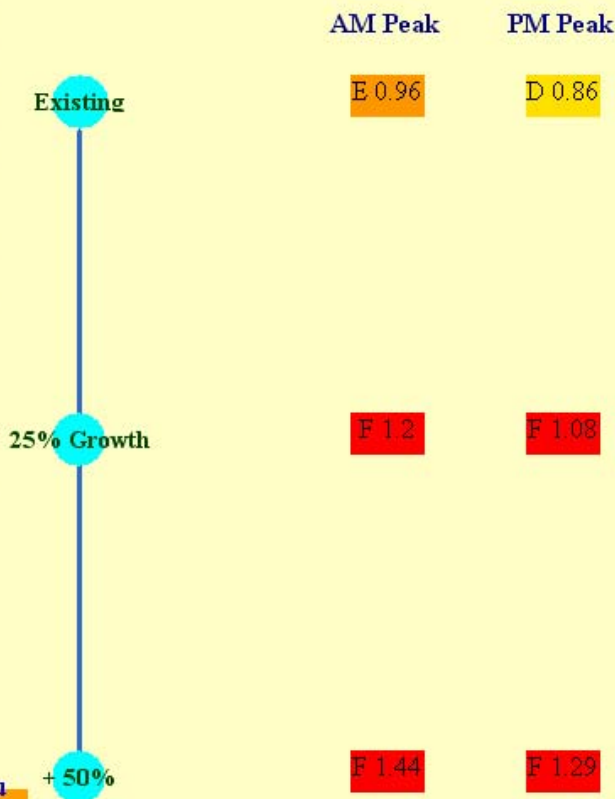
12-Hour Period



Lane Use Factor	
Number of Lanes	Factor
1	1.00
2	0.55
3	0.40
4	0.30
5	0.24
Dbl Left	0.60
Tpl Left	0.45

Level of Service	
Level	Critical Lane Volume
A	<= 1000
B	<= 1150
C	<= 1300
D	<= 1450
E	<= 1600
F	> 1600

PCE	
Opposing Volume	PCE
<=199	1.1
<=599	2.0
<=799	3.0
<=999	4.0
>1000	5.0





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# Critical Lane Volume

Name: **Existing**

(Rossville Blvd SB @ US 40 EB)

### Select the Analysis Hour

- AM Peak
- PM Peak
- Hourly 7AM

### Phase Split

- Split NB and SB
- Split EB and WB

Volume Growth Factor (%)

Calculate

Queue

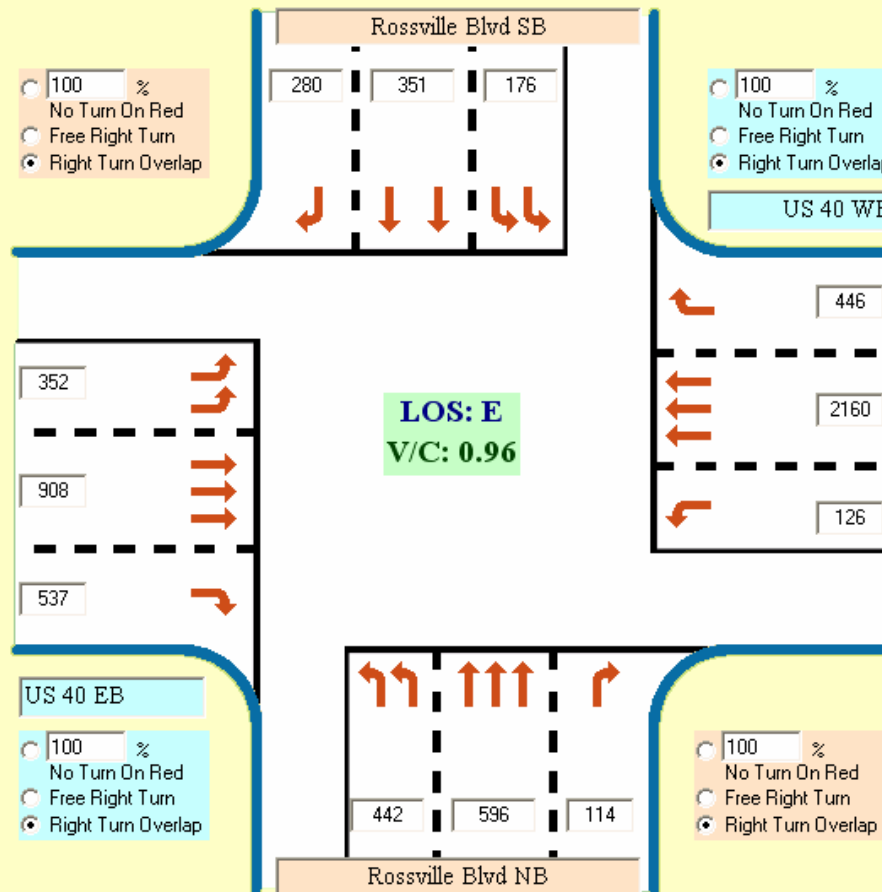
Print

Output

Save

Back

Clone Geometry to All



Lane Use Factor	
Number of Lanes	Factor
1	1.00
2	0.55
3	0.40
4	0.30
5	0.24
Dbl Left	0.60
Tpl Left	0.45

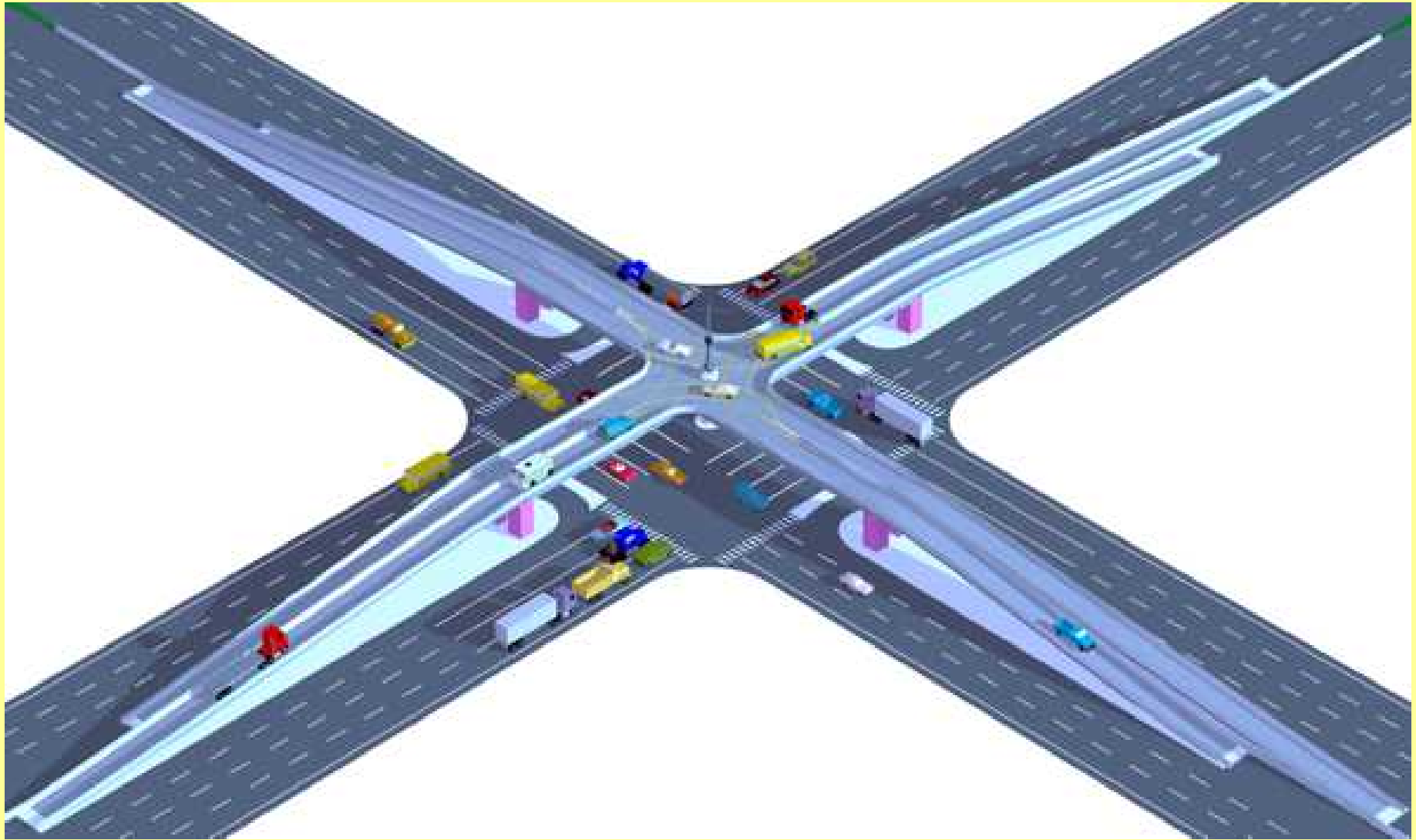
Level of Service	
Level	Critical Lane Volume
A	<= 1000
B	<= 1150
C	<= 1300
D	<= 1450
E	<= 1600
F	> 1600

PCE	
Opposing Volume	PCE
<=199	1.1
<=599	2.0
<=799	3.0
<=999	4.0
>1000	5.0

Mov.	Volume (1)	Lane Factor (2)	Lane Volume(3)=(1 * 2)	Opposing Lefts (4)	Critical Lane Volume (3 + 4)	*
North Bound	596	0.4	238	106	344	-
South Bound	351	0.55	193	265	458	458
East Bound	908	0.4	363	126	489	-
West Bound	2160	0.4	864	211	1075	1075
				Total	1533	V/C
				L.O.S	E	0.96



# The CTO Design



- CLV analysis for CTO
  - On the bridge
  - Under the bridge



Click on the blue circle to input for an intersection.

Analyst

Department

Year

Arterial

Location

Comments

Volume Growth Factor

Load Print

Save Save AS ...

Back Output

Exit

Display CLV Results for

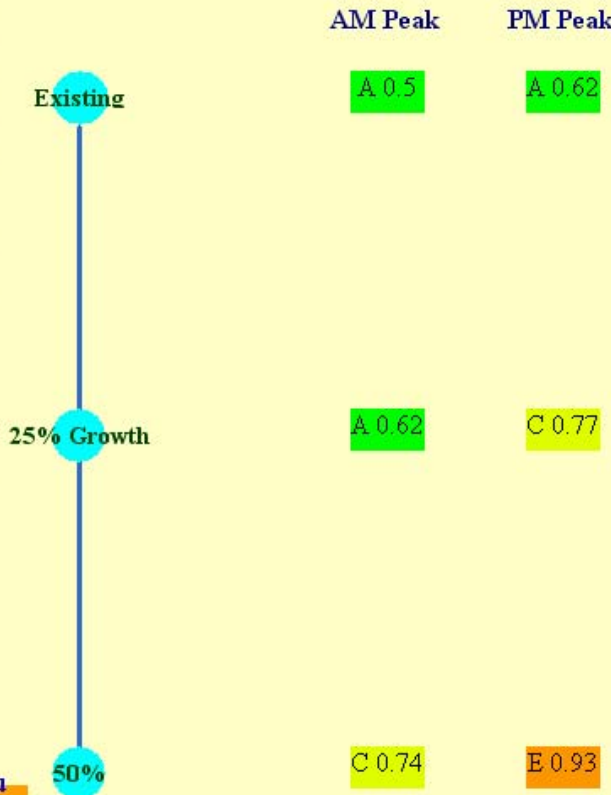
Peak Hours

12-Hour Period

Lane Use Factor	
Number of Lanes	Factor
1	1.00
2	0.55
3	0.40
4	0.30
5	0.24
Dbl Left	0.60
Tpl Left	0.45

Level of Service	
Level	Critical Lane Volume
A	<= 1000
B	<= 1150
C	<= 1300
D	<= 1450
E	<= 1600
F	> 1600

PCE	
Opposing Volume	PCE
<=199	1.1
<=599	2.0
<=799	3.0
<=999	4.0
>1000	5.0







Office of Traffic & Safety Univ. of Maryland

# Critical Lane Volume

Name: **Existing**

(Rossville Blvd SB @ US 40 EB)

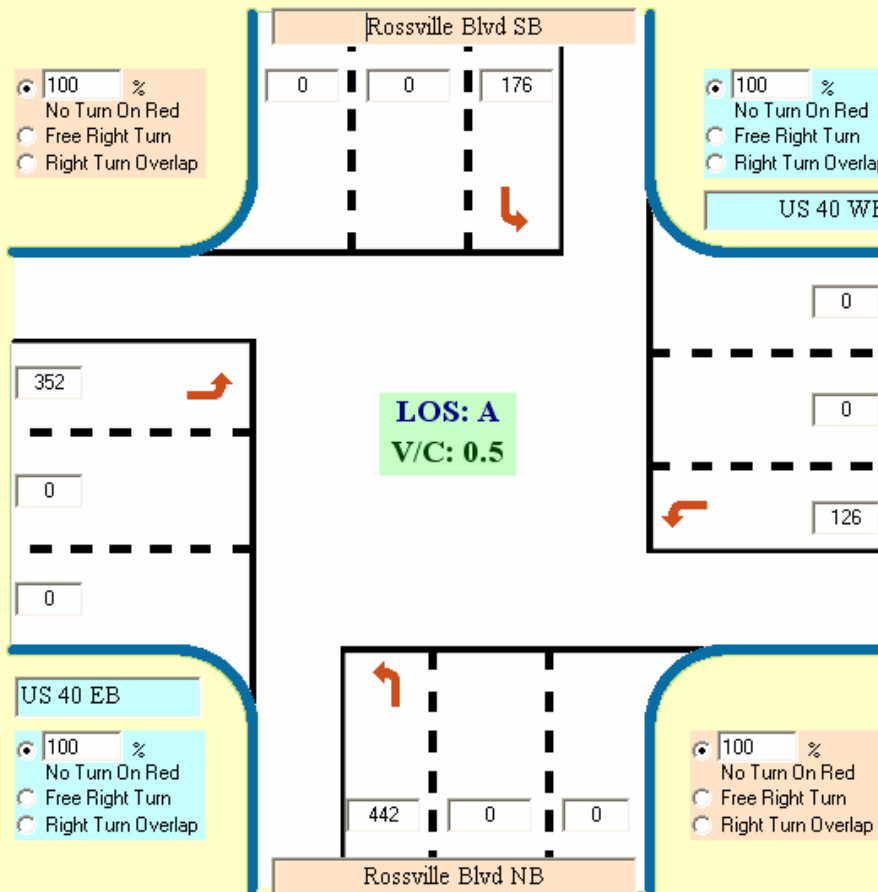
### Select the Analysis Hour

- AM Peak  PM Peak
- Hourly

### Phase Split

- Split NB and SB
- Split EB and WB

Volume Growth Factor (%)



Lane Use Factor	
Number of Lanes	Factor
1	1.00
2	0.55
3	0.40
4	0.30
5	0.24
Dbl Left	0.60
Tpl Left	0.45

Level of Service	
Level	Critical Lane Volume
A	<= 1000
B	<= 1150
C	<= 1300
D	<= 1450
E	<= 1600
F	> 1600

PCE	
Opposing Volume	PCE
<=199	1.1
<=599	2.0
<=799	3.0
<=999	4.0
>1000	5.0

Mov.	Volume (1)	Lane Factor (2)	Lane Volume(3)=(1 ?2)	Opposing Lefts (4)	Critical Lane Volume (3 + 4)	*
North Bound	0	0	0	176	176	-
South Bound	0	0	0	442	442	442
East Bound	0	0	0	126	126	-
West Bound	0	0	0	352	352	352
				Total	794	V/C
				L.O.S	A	0.5





Click on the blue circle to input for an intersection.

Analyst

Department

Year

Arterial

Location

Comments

Volume  Growth Factor

Load  Print

Save  Save AS ...

Back  Output

Exit

Display CLV Results for

Peak Hours

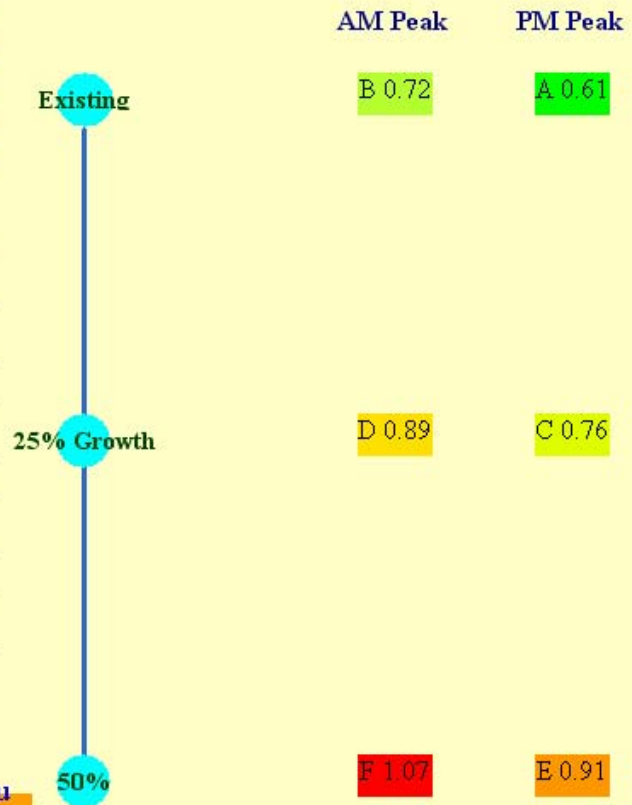
12-Hour Period



Lane Use Factor	
Number of Lanes	Factor
1	1.00
2	0.55
3	0.40
4	0.30
5	0.24
Dbl Left	0.60
Tpl Left	0.45

Level of Service		
Level	<=	Critical Lane Volume
A	<=	1000
B	<=	1150
C	<=	1300
D	<=	1450
E	<=	1600
F	>	1600

PCE		
Opposing Volume	<=	PCE
<=199	<=	1.1
<=599	<=	2.0
<=799	<=	3.0
<=999	<=	4.0
>1000	<=	5.0





Office of Traffic & Safety Univ. of Maryland

# Critical Lane Volume

Name:

(Rossville Blvd SB @ US 40 EB)

### Select the Analysis Hour

- AM Peak  PM Peak
- Hourly

### Phase Split

- Split NB and SB
- Split EB and WB

Volume Growth Factor (%)

Calculate

Queue

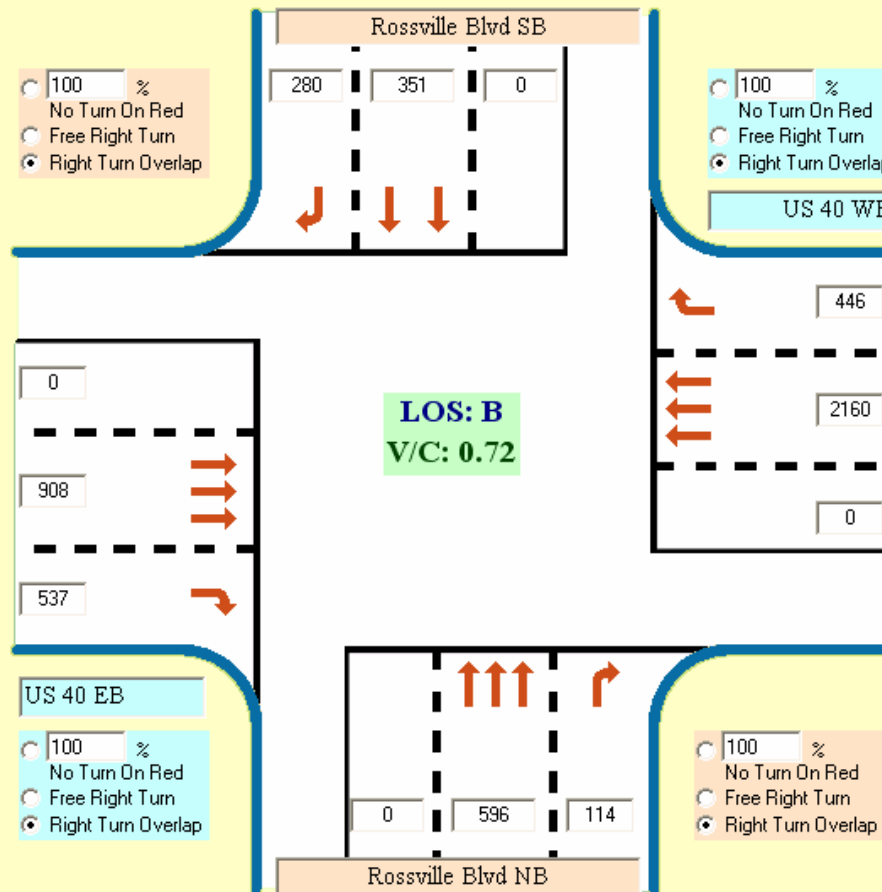
Print

Output

Save

Back

Clone Geometry to All



Lane Use Factor	
Number of Lanes	Factor
1	1.00
2	0.55
3	0.40
4	0.30
5	0.24
Dbl Left	0.60
Tpl Left	0.45

Level of Service	
Level	Critical Lane Volume
A	<= 1000
B	<= 1150
C	<= 1300
D	<= 1450
E	<= 1600
F	> 1600

PCE	
Opposing Volume	PCE
<=199	1.1
<=599	2.0
<=799	3.0
<=999	4.0
>1000	5.0

Mov.	Volume (1)	Lane Factor (2)	Lane Volume(3)=(1 * 2)	Opposing Lefts (4)	Critical Lane Volume (3 + 4)	*
North Bound	0	0	0	0	0	0
South Bound	280	1	280	0	280	280
East Bound	908	0.4	363	0	363	-
West Bound	2160	0.4	864	0	864	864
				Total	1144	V/C
				L.O.S	B	0.72

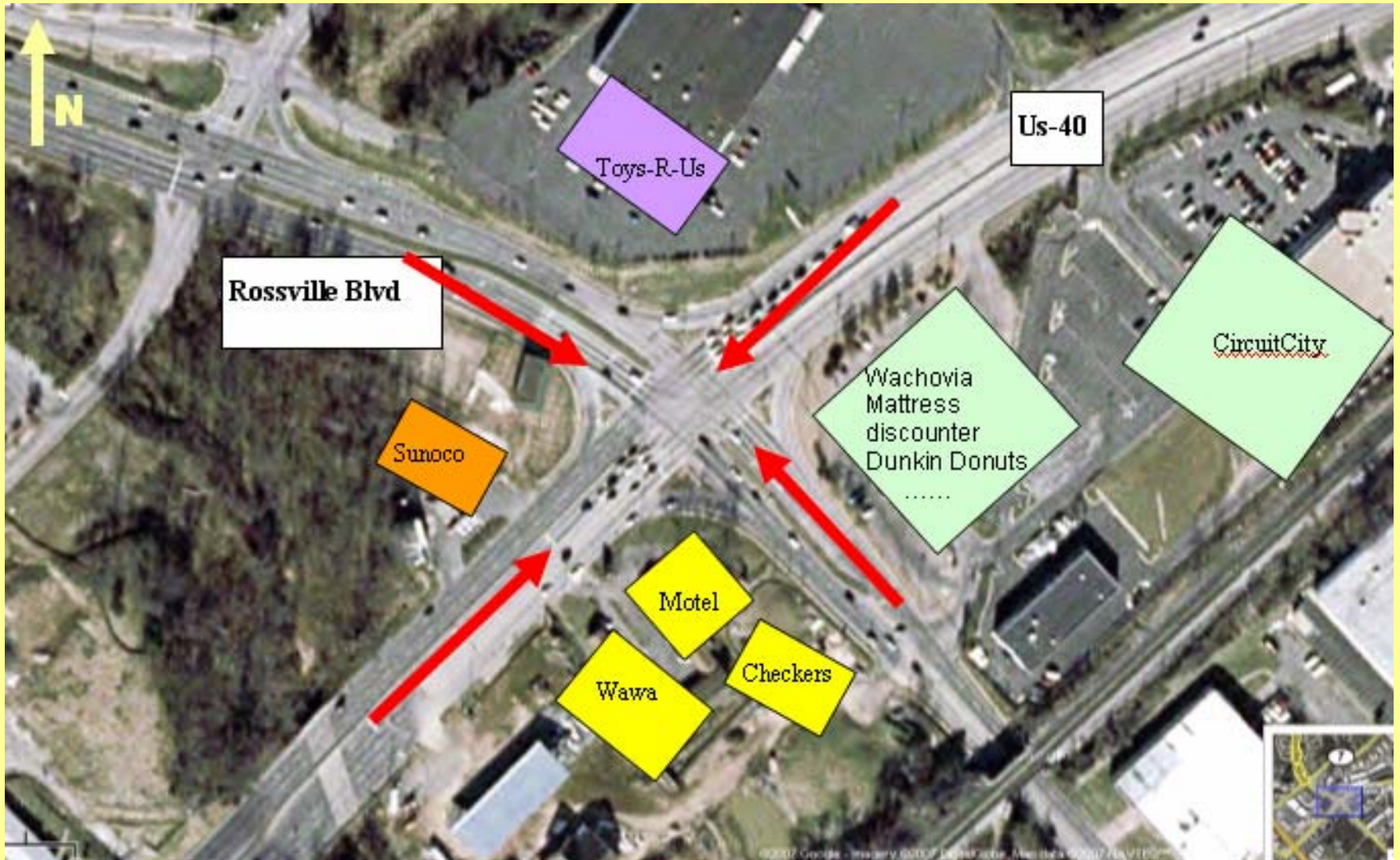


# CLV Analysis Results for Different Levels of Traffic Conditions





Alternatives		2006' Volumes		25% Increased Volumes		50% Increased Volumes	
		AM (LOS / V/C)	PM (LOS / V/C)	AM (LOS / V/C)	PM (LOS / V/C)	AM (LOS / V/C)	PM (LOS / V/C)
Existing		E / 0.96	D / 0.86	F / 1.20	F / 1.08	F / 1.44	F / 1.29
CTO	On Bridge	A / 0.50	A / 0.62	A / 0.62	C / 0.77	C / 0.74	E / 0.93
	Under Bridge	B / 0.72	A / 0.61	D / 0.89	C / 0.76	F / 1.07	E / 0.91
CTO (Restricted NB LT)	On Bridge	A / 0.33	A / 0.59	A / 0.41	C / 0.74	A / 0.50	D / 0.89
	Under Bridge	C / 0.80	B / 0.67	E / 1.00	D / 0.84	F / 1.20	F / 1.00

- VISSIM Simulation
  - [CTO Simulation \(2006 AM\)](#)
  - [CTO Simulation \(2006 PM\)](#)

# Access Analysis

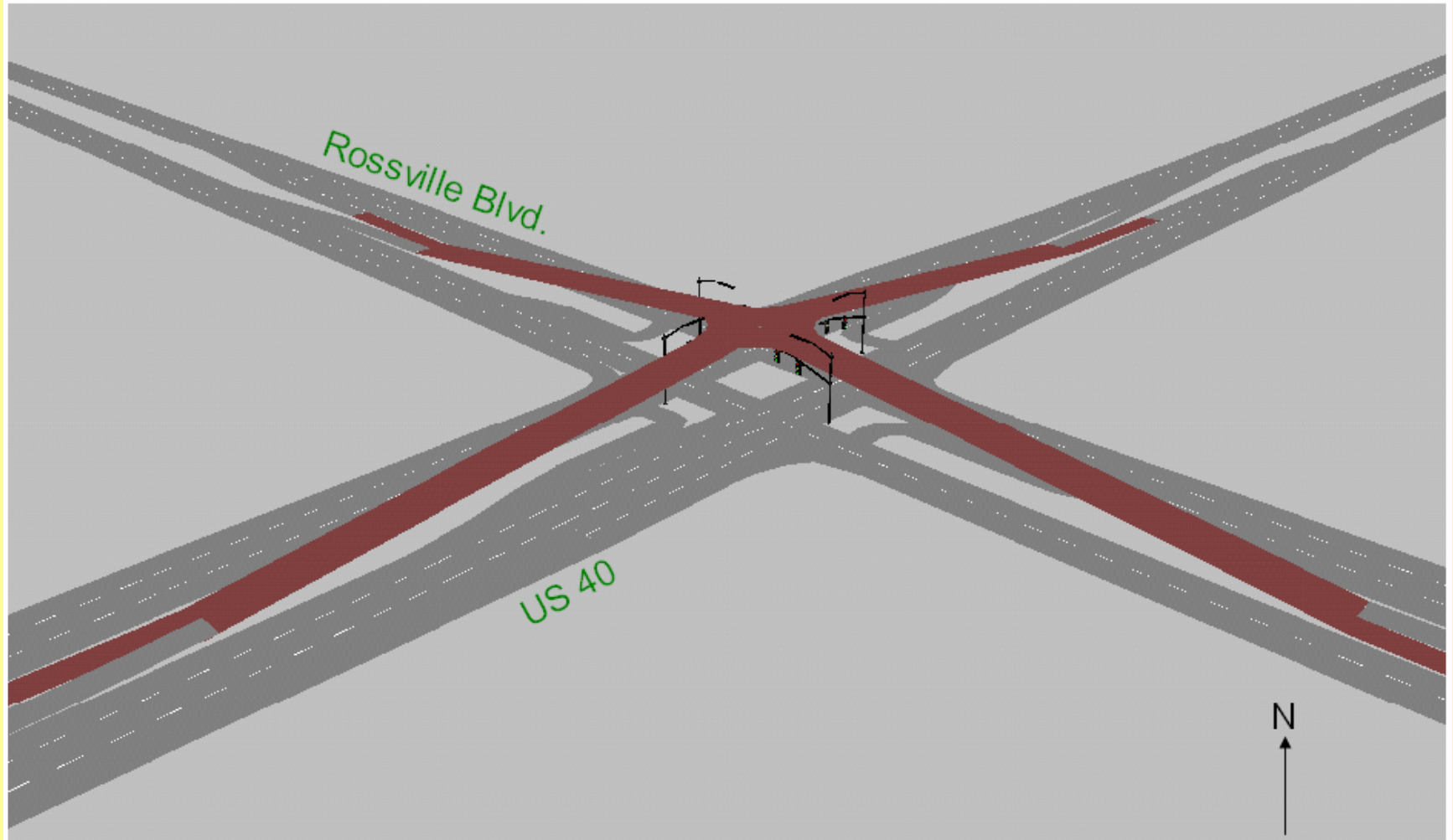


## Accessibility Analysis for Center Turn Overpass

	US-40 EB 		US-40 WB 		Rossville Blvd NB 		Rossville Blvd SB 	
	Conv.	CTO	Conv.	CTO	Conv.	CTO	Conv.	CTO
Sunoco								
Motel								
Wawa								
Checkers								
Dunkin Donuts								
Wachovia								
Mattress Discounter								
CircuitCity								
Toys-R-Us								

Accessible
  Inaccessible
  Accessible w/ U-Turn

## Center Turn Overpass with U-Turn



Unscaled

TDSD / S.R., X.L., M.K.  
Jan 17, 2007



- For more information about the CTO design:
  - <http://attap.umd.edu/UAID.php>