

APPENDIX E
TRAFFIC IMPACT STUDY

WARWICK VIEWS
TOWN OF WARWICK, NEW YORK

TRAFFIC IMPACT STUDY

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INTRODUCTION

A proposal has been submitted to the Town of Warwick, New York, for the construction of a 53 lot subdivision, to be known as Warwick Views. This development would be located on the west side of Blooms Corners Road, to the north of its intersection with Waterbury Road. Entry to and exit from the site would be provided by an access drive to Blooms Corners Road, with a stub provided for a possible interconnection with an adjoining parcel known as the Luft Farm, which is currently seeking Planning Board subdivision approval. The site location is shown on Figure 1.

The purpose of this study is to determine the existing road and traffic conditions, estimate the amount and distribution of the traffic to be generated by the project and assess the ability of the local road network to accommodate this traffic. The results of this Traffic Impact Study are presented in this report.

Edenville, New York, United States

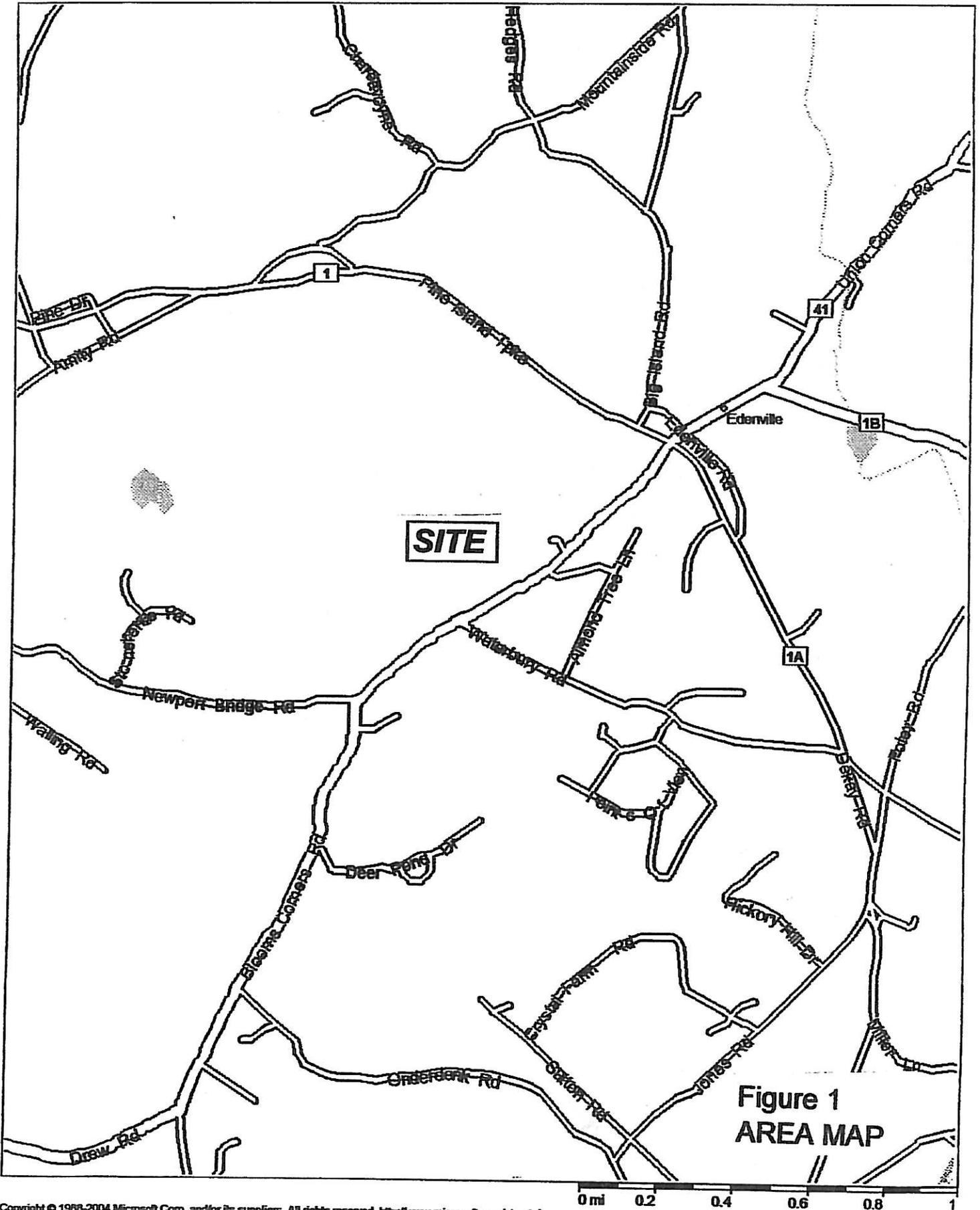


Figure 1
AREA MAP

EXISTING CONDITIONS

The study area for this analysis covers the section of Blooms Corners Road from the intersection with Pine Island Turnpike/CR 1 to the intersection with Newport Bridge Road, including the intersection with Waterbury Road, plus the intersection of CR 1A with Waterbury Road. These intersections were identified in the Final Scoping Document adopted by the Town of Warwick Planning Board.

Existing Road System

The alignment of the street grid in the Town of Warwick, as in much of Orange County, is about 45 degrees off of the north-south axis. For the purpose of this report, Blooms Corners Road is considered to run north-south, while Pine Island Turnpike/CR 1, Waterbury Road and Newport Bridge Road are considered to run east-west. Edenville Road/CR 1A is treated as an east-west road at its intersection with Pine Island Turnpike/CR 1 and Blooms Corners Road, and north-south at its intersection with Waterbury Road.

Blooms Corners Road. Blooms Corners Road extends south from Pine Island Turnpike/CR 1 for about three miles to the New Jersey State line. It has a pavement width of 22-23 feet, providing one travel lane in each direction. The pavement condition is adequate for its current and projected traffic loads. The posted speed limit is 40 MPH.

Pine Island Turnpike/CR 1. Pine Island turnpike is an east-west County arterial road, extending west from Route 17A in the Village of Warwick to U.S. Route 6 in the Town of Greenville. At the intersection with Blooms Corners Road it forms the west and north legs of the intersection. It has a pavement width of 23 feet, providing one travel lane in each direction. The posted speed limits are 45 MPH west of the intersection and 35 MPH north of the intersection. The north and south approaches to the intersection are Stop sign controlled, supplemented by a flashing signal displaying flashing yellow on the east and west approaches and flashing red on the north and south approaches.

Edenville Road/CR 1A. Edenville Road is an east-west County arterial road, extending east from the intersection with Pine Island Turnpike and Blooms Corners Road to Route 17A in the Town of Warwick. It has a pavement width of 23 feet, providing one travel lane in each direction. The posted speed limit is 35 MPH.

Waterbury Road. Waterbury Road is a local road extending east from Blooms Corners Road to Edenville Road/CR 1A, a distance of about one mile. It has a narrow pavement width of between 19 and 20 feet, providing one travel lane in each direction. The posted speed limit is 30 MPH. Its approaches to both Blooms Corners Road and Edenville Road are controlled by Stop Signs. The intersection of Waterbury Road with Blooms Corners Road is channelized.

Newport Bridge Road. Newport Bridge Road is a local road, extending west from Blooms Corners Road to Liberty Corners Road/CR 88, providing one travel lane in each

direction. The posted speed limit near Blooms Corners Road is 40 MPH. Its approach to Blooms Corners Road, which is a channelized intersection, is controlled by Stop signs.

The road system is shown in Figure 1 and schematically in the traffic figures.

Existing Traffic

Manual turning movement counts were made at the following intersections, as specified by the Final Scoping Document adopted by the Town of Warwick Planning Board.

- Blooms Corners Road and Pine Island Turnpike/CR 1
- Blooms Corners Road and Waterbury Road
- Blooms Corners Road and Newport Bridge Road
- Waterbury Road and Edenville Road/CR 1A

The counts, which were made on Thursday, November 9, 2006, except at the intersection of Waterbury Road and Edenville Road/CR 1A which were made on Tuesday, December 5, 2006, covered the peak traffic periods of 7:00 to 9:00 A.M. and 3:30 to 6:30 P.M. The count volumes were recorded at 15- minute intervals, with the highest four consecutive 15-minute counts taken as the peak hour traffic volumes. The count volumes were classified by passenger cars, heavy trucks and buses, and the heavy vehicle percentages were used in the capacity analyses – see Capacity Analysis section below.

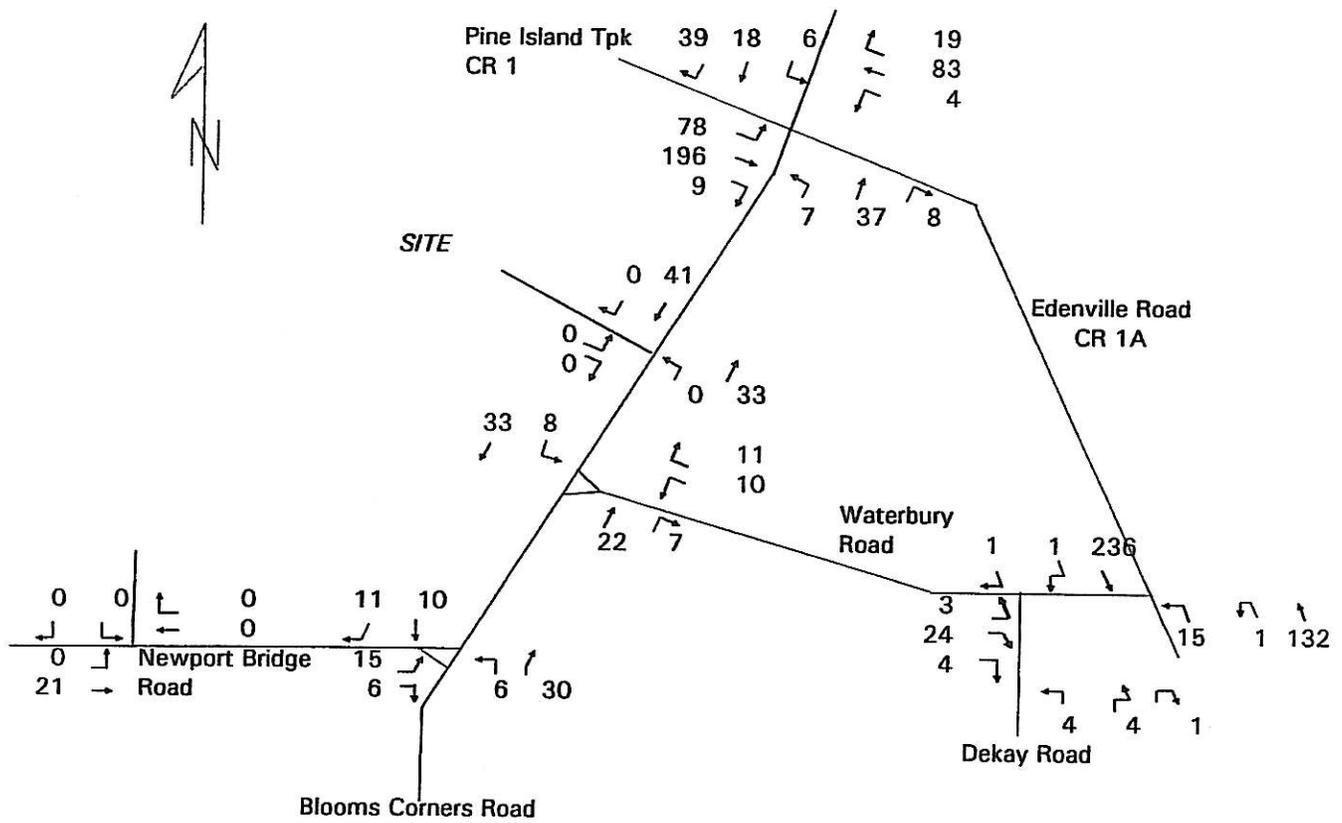
Because of intervening driveways and side streets the counts were not balanced between intersections.

The resulting A.M. and P.M. Existing 2006 peak hour volumes are shown in Figures 2 and 3.

Accident Statistics

Accident Statistics for Blooms Corners Road from Pine Island Turnpike to Newport Bridge Road, covering a six year period from 2000 to 2006, were furnished by the Town of Warwick Police Department. The numbers of accidents, by intersection, were as follows.

- Blooms Corners Road and Pine Island Turnpike/CR 1 - 10 recorded accidents
- Blooms Corners Road and Waterbury Road - 3 “ “
- Blooms Corners Road and Newport Bridge Road - 8 “ “



Schematic - Not To Scale

Figure 2

**2006 EXISTING TRAFFIC
WEEKDAY A.M. PEAK HOUR**

FUTURE TRAFFIC

No-Build Condition

The No-Build Condition represents the conditions that would be present in the year that the project is expected to be completed, but without the traffic estimated to be generated by the project. It consists of the existing traffic projected to the design year by a background growth factor, plus traffic expected to be generated by other major new projects under construction or in the active planning stage in the immediate area. For this analysis, the project is projected for completion in 2012. The base 2012 traffic volumes were established by applying an annual growth increase of 2.0 percent for six years to the existing traffic volumes.

The following list of approved and pending projects for inclusion in the No-Build condition was furnished by the Town's Planning Consultant.

Luft Farm	24 lots
Meadowbrook Farm	33 lots
Moore	35 lots
Homestead Farms	30 lots
Old World Estates	7 lots
Colburn	3 lots
Aigner	4 lots
House	16 lots

The estimated traffic volumes to be generated by these eight developments were based on standard trip generation rates developed by the Institute of Transportation Engineers.¹ The resultant generated traffic volumes for the A.M. and P.M. peak hours are shown in

Table 1
TRAFFIC GENERATION FROM OTHER DEVELOPMENTS
Vehicles per Hour

	<u>A.M. Peak Hour</u>		<u>P.M. Peak Hour</u>	
	<u>Arrive</u>	<u>Depart</u>	<u>Arrive</u>	<u>Depart</u>
Luft Farm	7	20	19	11
Meadowbrook Farm	8	24	25	15
Moore	8	25	26	15
Homestead Farms	8	23	23	13
Old World Estates	5	15	13	8
Colburn	2	5	3	2
Aigner	1	4	1	1
House	2	5	2	1

¹ "Trip Generation," 7th Edition, Institute of Transportation Engineers, Washington, D.C., 2003

Table 1. Note that because the ITE regression equations produce excessively high trip volumes for small developments, the generated trip volumes for those developments under 10 lots were reduced by 50 percent.

The generated trips from these eight developments were assigned to the road system based on existing traffic patterns developed for the Warwick Views project, shown in Table 3 in the Build Condition section below.

The 2012 Base Year traffic volumes are shown in Figures 4 and 5. The generated traffic volumes from the eight other developments are shown in Figures 6 and 7. The 2012 No-Build condition volumes are shown in Figures 8 and 9.

Build Condition

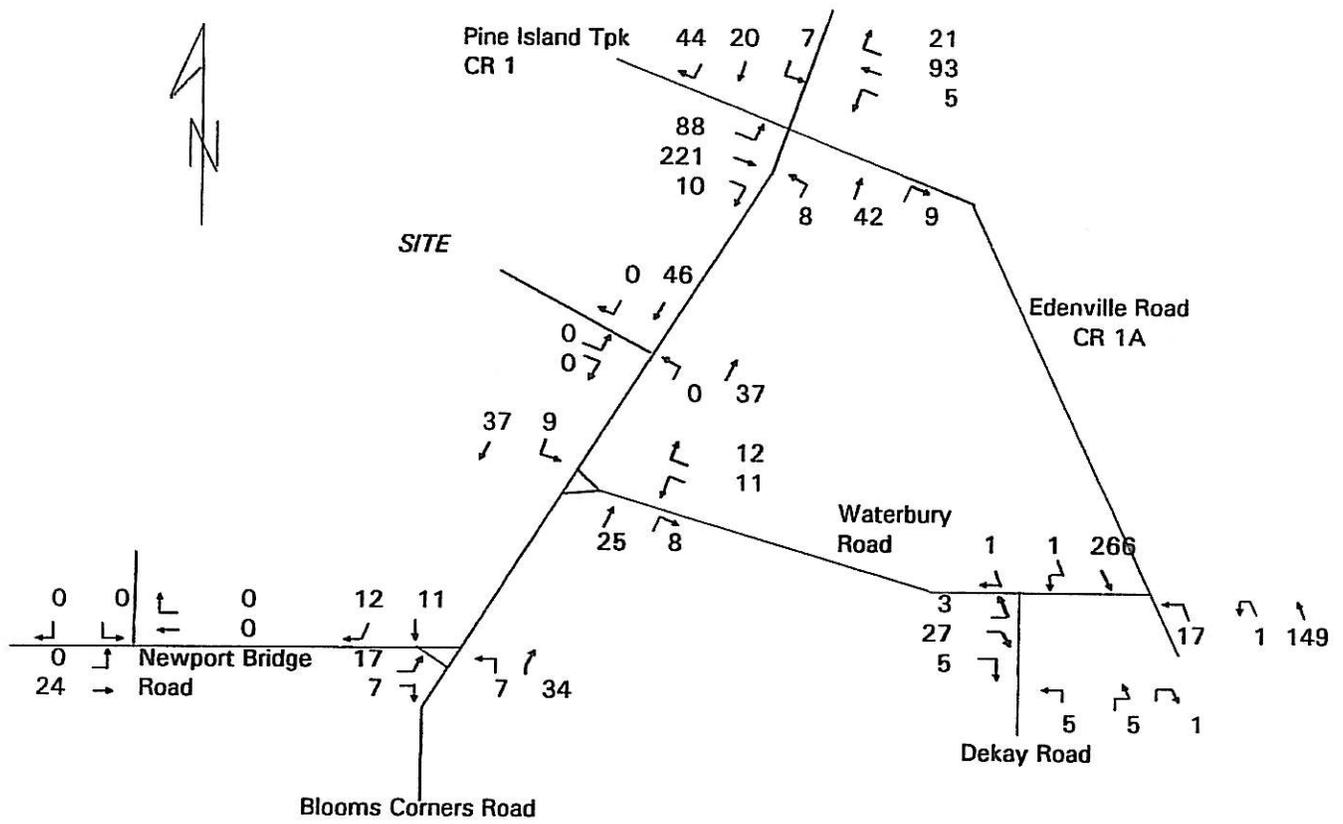
The Build condition traffic consists of the 2012 No-Build traffic volumes plus the traffic generated by the proposed subdivision.

The estimates of traffic to be generated by Warwick Views are based on same ITE trip generation rates that were used for the other subdivisions. These trip generation rates, and the resulting generated traffic volumes are shown in Table 2 .

Table 2
TRAFFIC GENERATION FROM WARWICK VIEWS

	<u>Trip Generation Rate</u>		<u>Generated Traffic</u>	
	<u>Trips/hr/DU</u>		<u>Vehicles per Hour</u>	
	<u>A.M. Pk Hr</u>	<u>P.M. Pk Hr</u>	<u>A.M. Pk Hr</u>	<u>P.M. Pk Hr</u>
Arrive	0.22	0.71	12	37
Depart	0.66	0.42	<u>35</u>	<u>22</u>
Total			47	59

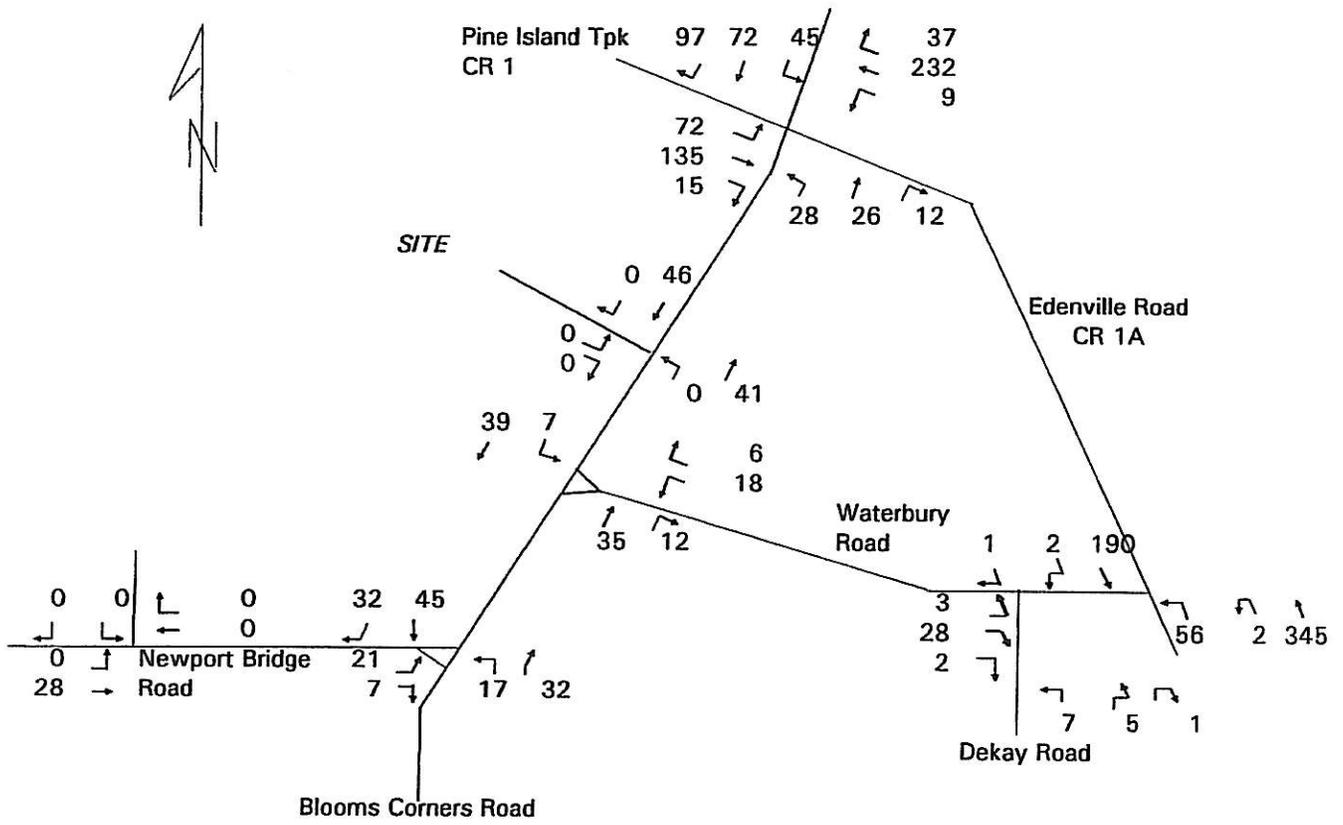
The site-generated trips were assigned to the road network based on existing traffic patterns and likely travel routes. These directional distributions are shown in Table 3.



Schematic - Not To Scale

Figure 4

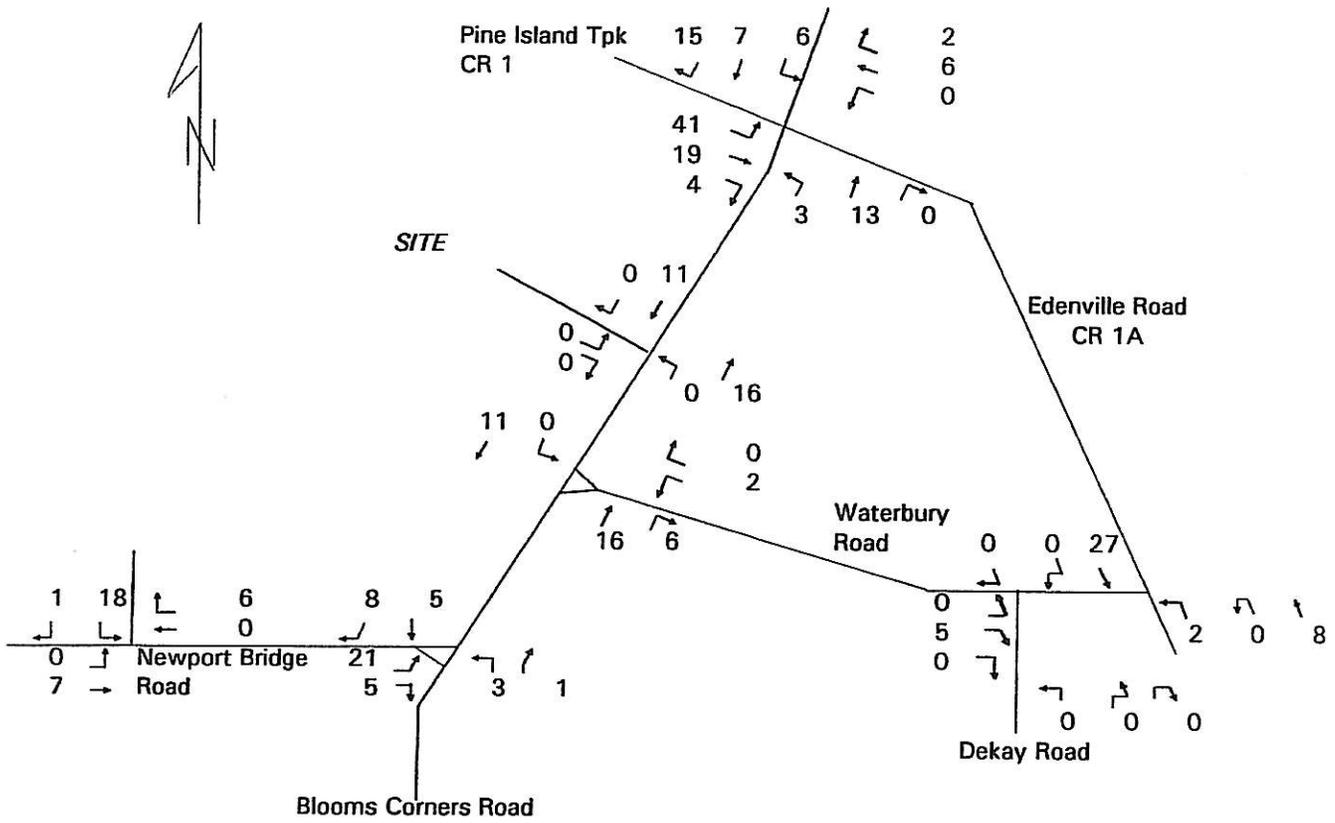
2012 BASE YEAR TRAFFIC
WEEKDAY A.M. PEAK HOUR



Schematic - Not To Scale

Figure 5

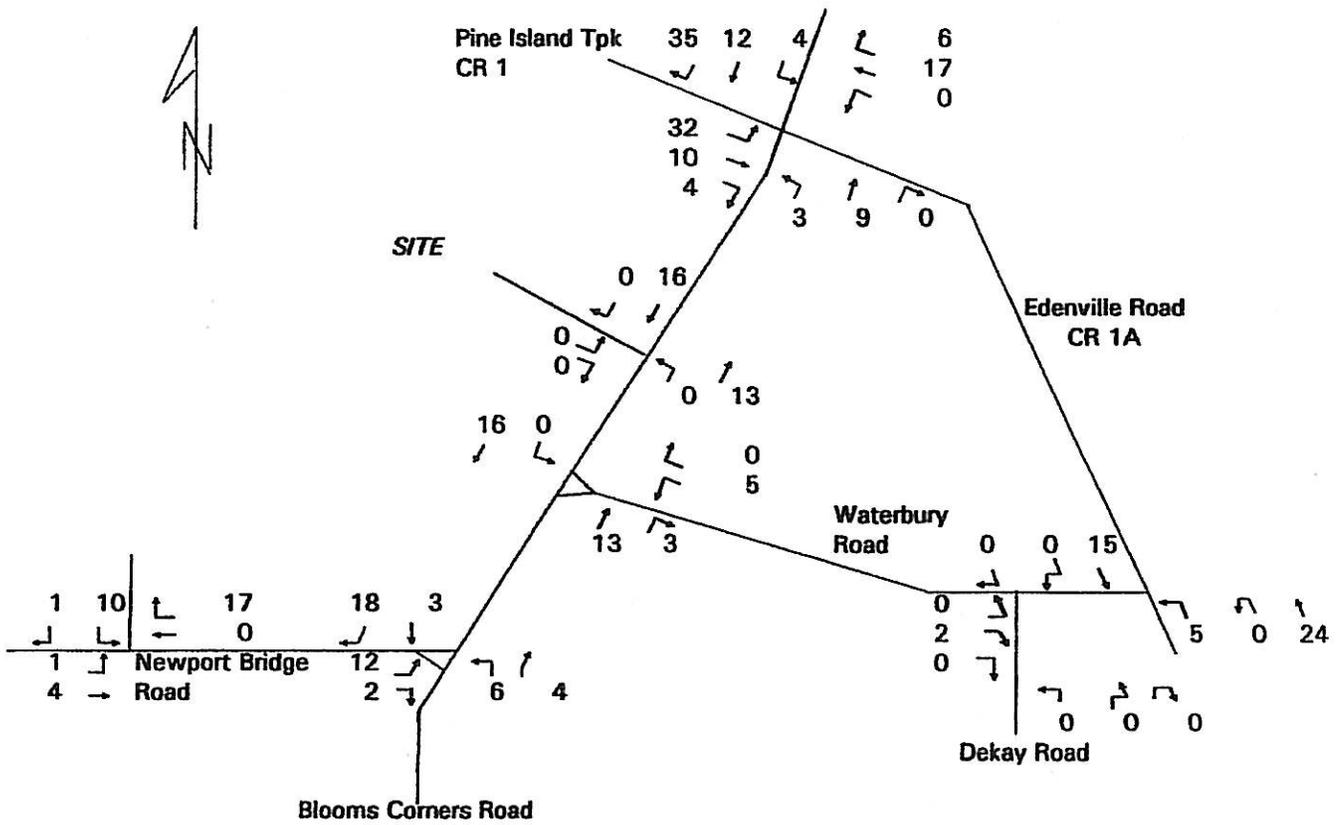
**2012 BASE YEAR TRAFFIC
WEEKDAY P.M. PEAK HOUR**



Schematic - Not To Scale

Figure 6

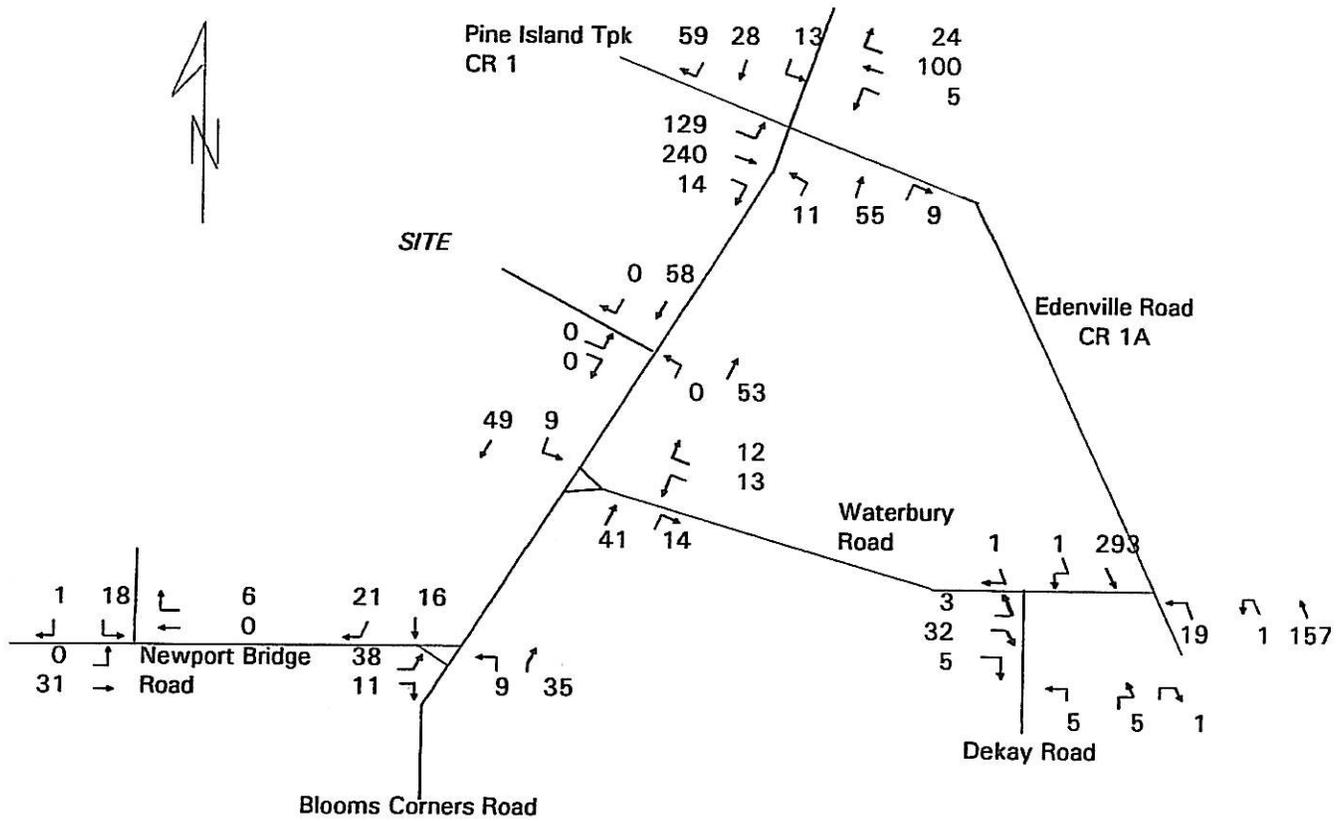
OTHER DEVELOPMENT TRAFFIC
WEEKDAY A.M. PEAK HOUR



Schematic - Not To Scale

Figure 7

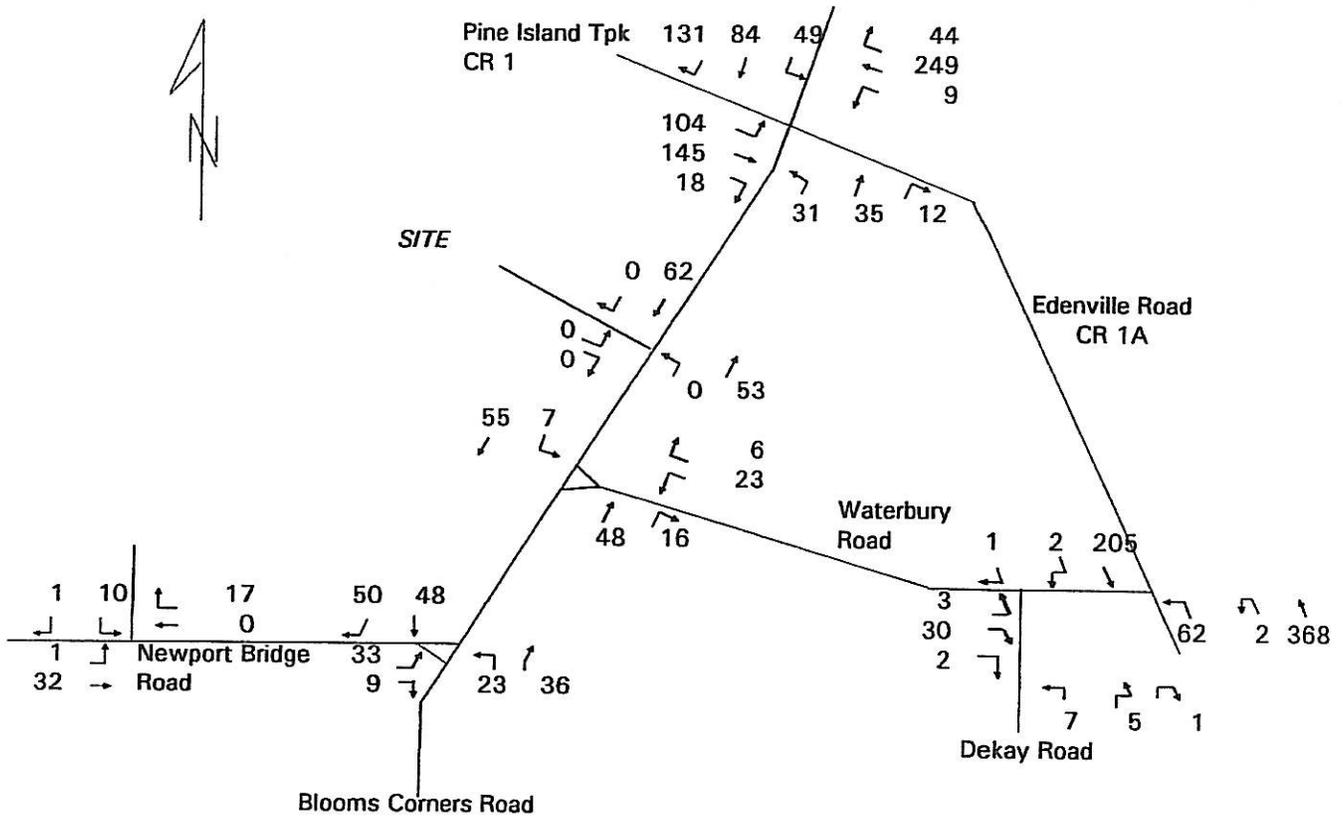
**OTHER DEVELOPMENT TRAFFIC
WEEKDAY P.M. PEAK HOUR**



Schematic - Not To Scale

Figure 8

2012 NO-BUILD TRAFFIC
WEEKDAY A.M. PEAK HOUR



Schematic - Not To Scale

Figure 9

**2012 NO-BUILD TRAFFIC
WEEKDAY P.M. PEAK HOUR**

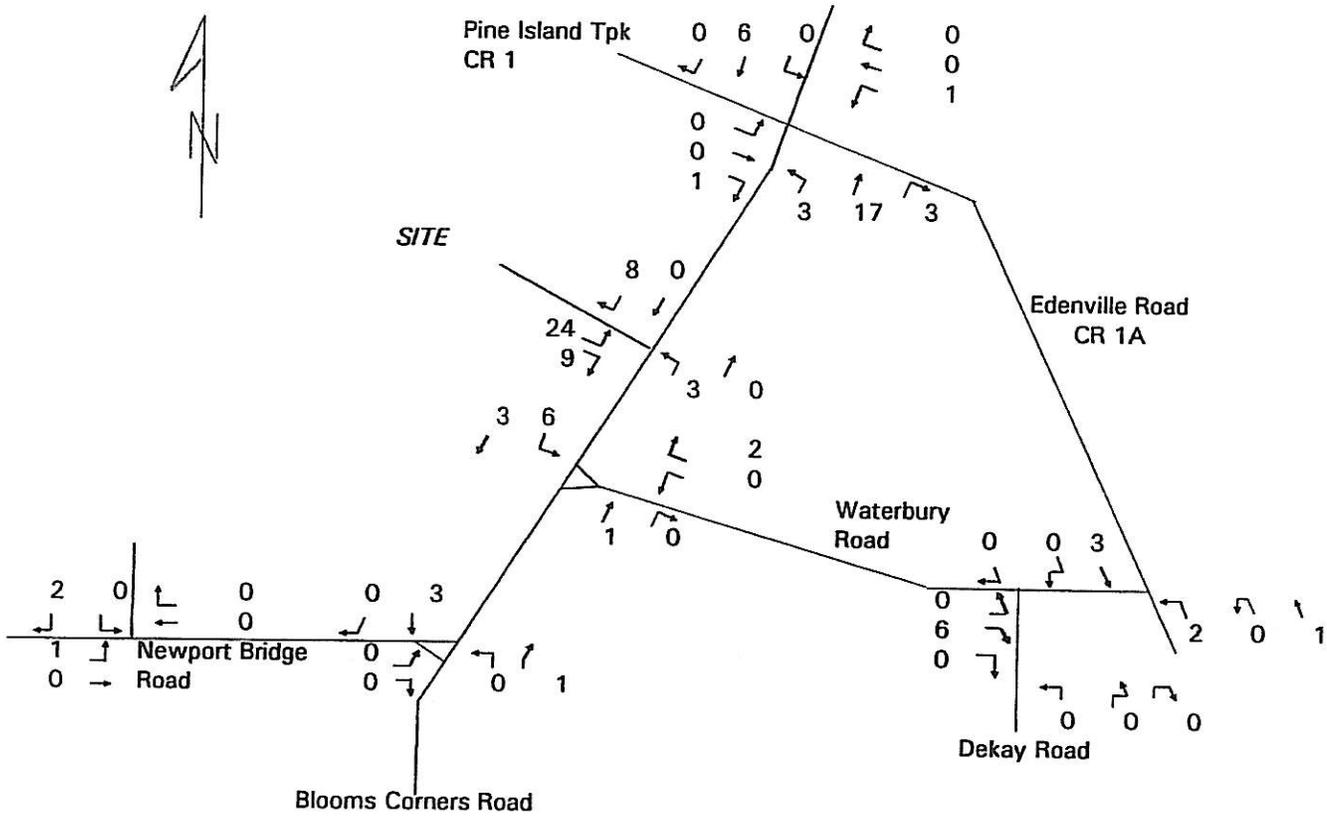
Table 3
 DIRECTIONAL DISTRIBUTION OF
 WARWICK VIEWS
 GENERATED TRAFFIC

<u>Direction</u>	<u>Percent</u>
Pine Island Turnpike/CR 1 North	50
Pine Island Turnpike/CR 1 West	10
Edenville Road/CR 1A East	9
Waterbury Road East	17
Newport Bridge Road West	6
Blooms Corners Road South	8

Total	100

For the purpose of this analysis, the proposed development plan includes an internal road connection between Warwick Views and the Luft Farm property to the south. In assigning traffic to the road system, it was assumed that 50 percent of the traffic from the Luft Farm development destined to and from the intersection of Pine Island Turnpike/CR 1 and Blooms Corners Road would use the connecting road through the Warwick Views development. Similarly, it was assumed that all of the generated traffic from Warwick Views destined to and from Newport Bridge Road to the west would use the connecting road through the Luft Farm subdivision. These assignments are built into the Build condition traffic assignments.

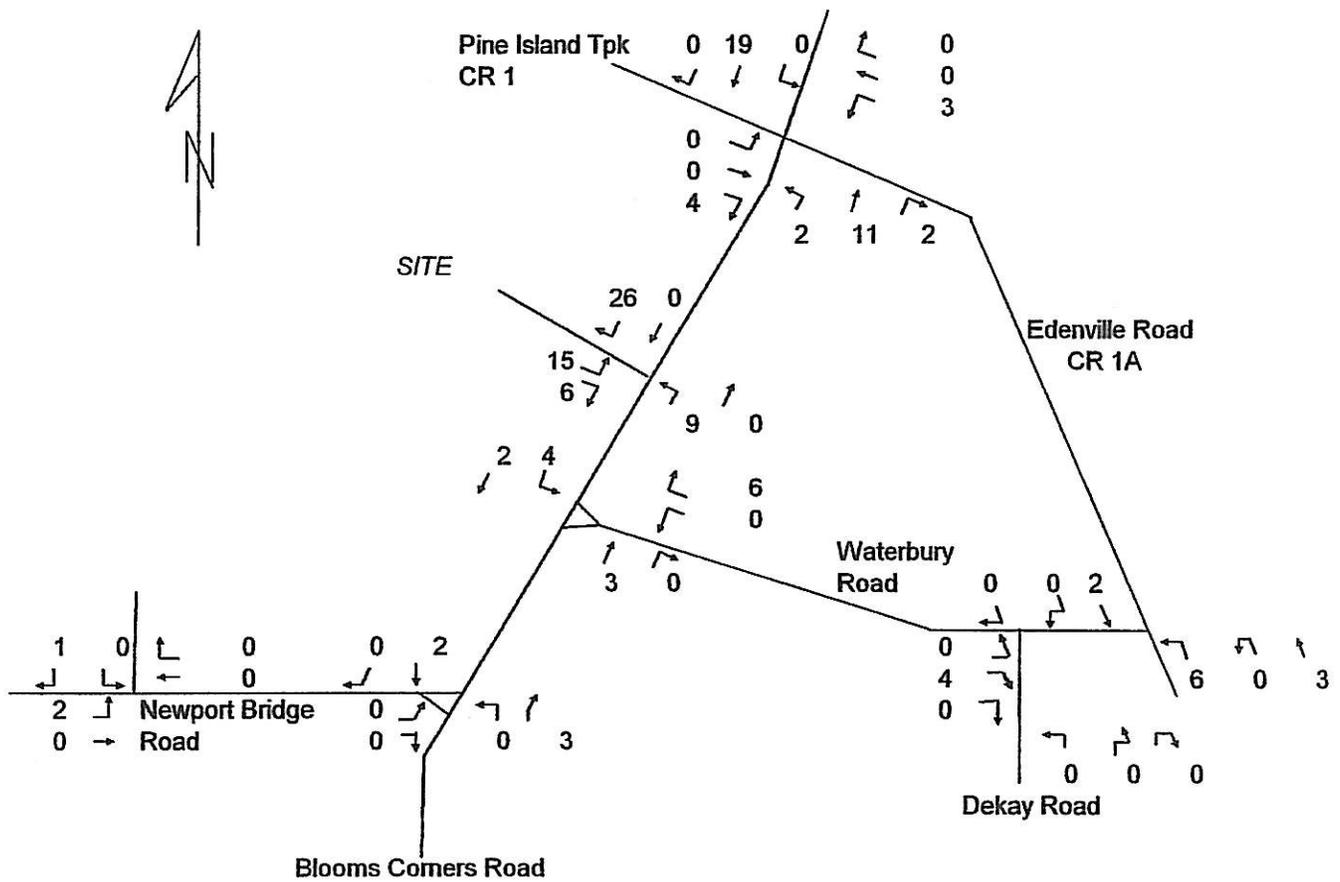
The resultant traffic volumes generated by Warwick Views are shown in Figures 10 and 11. The 2012 Build Condition volumes are shown in Figures 12 and 13.



Schematic - Not To Scale

Figure 10

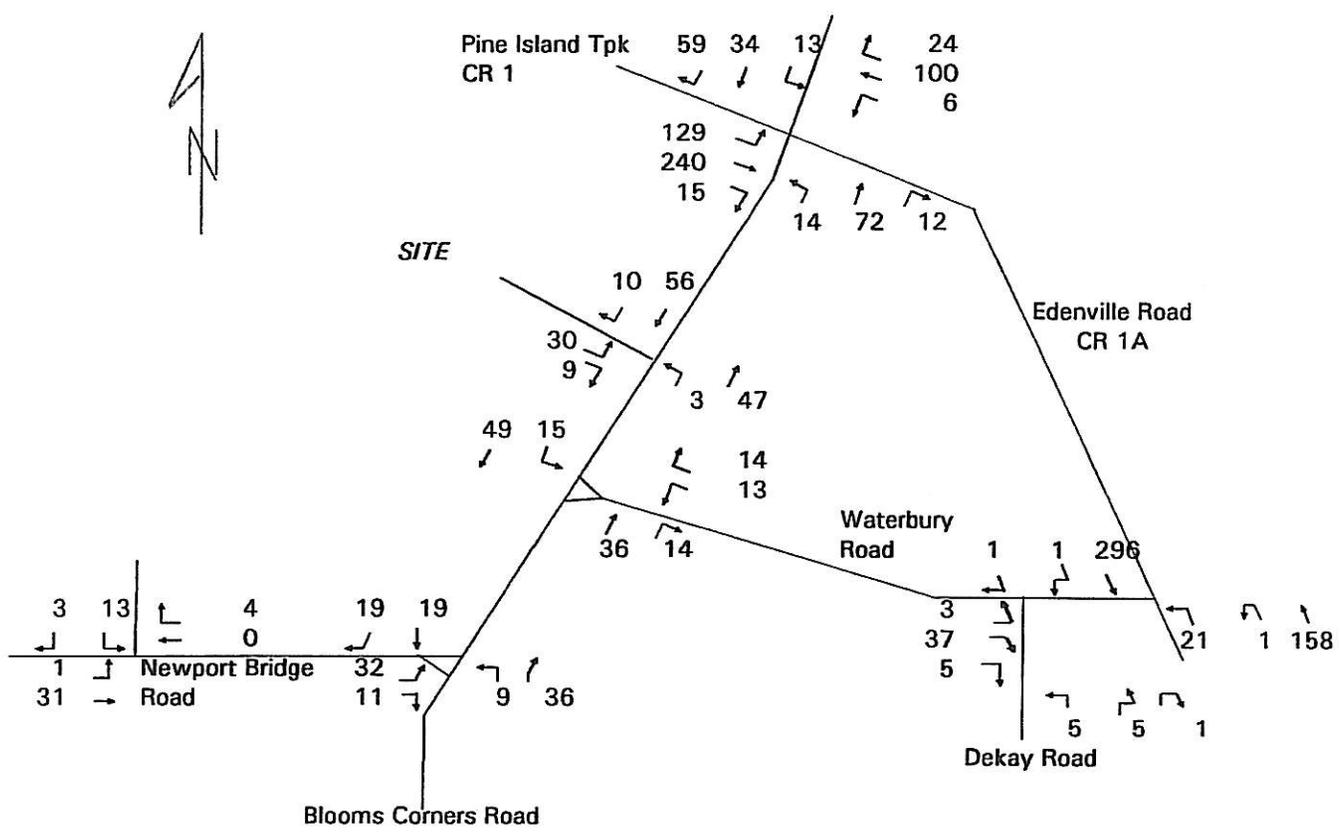
**SITE-GENERATED TRAFFIC
WEEKDAY A.M. PEAK HOUR**



Schematic - Not To Scale

Figure 11

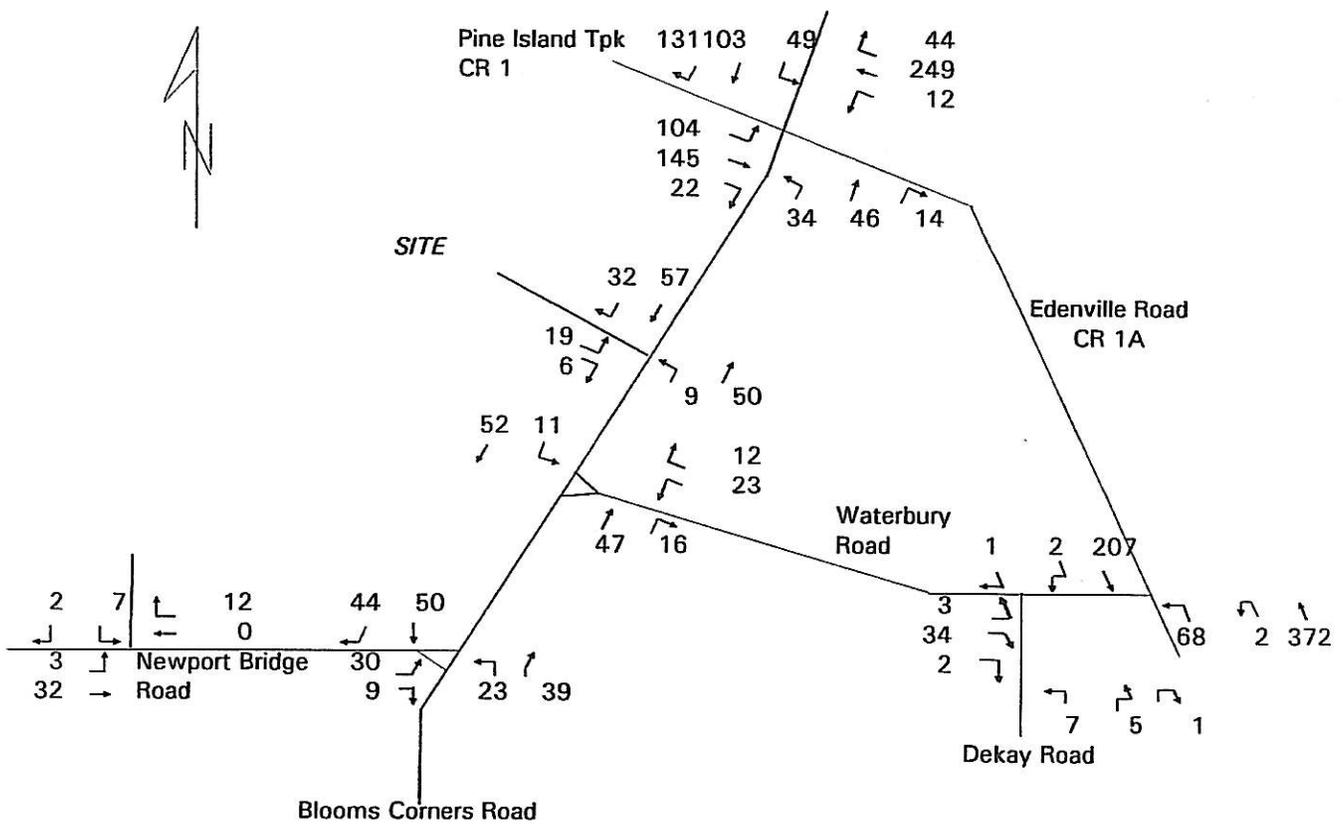
**SITE-GENERATED TRAFFIC
WEEKDAY P.M. PEAK HOUR**



Schematic - Not To Scale

Figure 12

2012 BUILD TRAFFIC
WEEKDAY A.M. PEAK HOUR



Schematic - Not To Scale

Figure 13

2012 BUILD TRAFFIC
WEEKDAY P.M. PEAK HOUR

CAPACITY ANALYSIS

Traffic conditions at the four surveyed intersections and the intersection of the access drive with Blooms Corners Road have been analyzed using the methodology in the 2000 Edition of the Highway Capacity Manual² and Highway Capacity Software HCS+, Version 5.2.

Methodology for Unsignalized Intersections. For three-way ("T") or four-way unsignalized intersections where Stop control is provided only on the minor cross street, the through traffic on the major road, under typical operating conditions, has a continuous right of way and is not affected by the minor street traffic flows. For these unsignalized intersections, therefore, the analysis considers the level of operation of individual traffic movements turning into and out of the minor road rather than the operational characteristics of the intersection as a whole.

The levels of service for the affected movements within an unsignalized intersection are defined in terms of the average stopped delay per vehicle. These levels, and their associated delay times, are as follows.

<u>Level of Service</u>	<u>Stopped Delay in Seconds per Vehicle</u>
A	Less than or equal to 10 seconds
B	>10 to 15 seconds
C	>15 to 25 seconds
D	>25 to 35 seconds
E	>35 to 50 seconds
F	Greater than 50 seconds

If side street volumes and delays become excessive (generally Level of Service F as described above), drivers use shorter gaps between vehicles on the main road to enter the traffic stream. Safety and traffic flow conditions on the main road can be affected.

The results of the capacity analyses are presented in Table 4 for the five unsignalized intersections. The peak hour factors used in the analysis were developed directly from the traffic counts. The capacity computation worksheets, along with some explanatory notes on the factors and assumptions used, are included in the Appendix to this report. The results of the analyses are discussed below.

² Highway Capacity Manual, HCM2000, Transportation Research Board, Washington, D.C., 2000

Table 4

**UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS
A.M. PEAK HOUR**

		<u>2006 Existing Traffic</u>			<u>2012 No-Build Condition</u>			<u>2012 Build Condition</u>		
<u>Intersection and Direction</u>	<u>Lane Group</u>	<u>V/C Ratio</u>	<u>Average Delay (Seconds)</u>	<u>Level of Service</u>	<u>V/C Ratio</u>	<u>Average Delay (Seconds)</u>	<u>Level of Service</u>	<u>V/C Ratio</u>	<u>Average Delay (Seconds)</u>	<u>Level of Service</u>
<u>Pine Island Turnpike/CR1 and Blooms Corners Road</u>										
Eastbound	All	0.06	7.6	A	0.10	7.7	A	0.10	7.7	A
Westbound	All	0.00	7.7	A	0.00	7.8	A	0.00	7.8	A
Northbound	All	0.12	14.0	B	0.25	19.7	C	0.33	21.5	C
Southbound	All	0.11	11.3	B	0.23	14.5	B	0.25	15.3	C
<u>Edenville Road/CR1A and Waterbury Road</u>										
Northbound	Left/Thru	0.01	8.0	A	0.02	8.2	A	0.02	8.2	A
Eastbound	Left/Right	0.05	10.6	B	0.07	11.2	B	0.08	11.3	B
<u>Blooms Corners Road and Waterbury Road</u>										
North Intersection										
Southbound	Left/Thru	0.01	7.7	A	0.01	7.7	A	0.01	7.7	A
Westbound	Right	0.01	8.4	A	0.01	8.5	A	0.01	8.5	A
South Intersection										
Westbound	Left	0.01	9.3	A	0.02	9.5	A	0.02	9.4	A
East Intersection										
Southbound	Right	0.01	8.4	A	0.01	8.4	A	0.02	8.4	A
<u>Blooms Corners Road and Newport Bridge Road</u>										
North Intersection										
Eastbound	Left	0.02	8.9	A	0.05	9.2	A	0.05	9.2	A
South Intersection										
Northbound	Left/Thru	0.00	7.4	A	0.01	7.4	A	0.01	7.4	A
Eastbound	Right	0.01	8.5	A	0.01	8.6	A	0.01	8.6	A
West Intersection										
Northbound	Left	0.01	8.9	A	0.03	9.1	A	0.03	9.1	A
Single Intersection										
Northbound	Left/Thru				0.01	7.5	A	0.01	7.5	A
Eastbound	Left/Right				0.07	9.3	A	0.06	9.2	A
<u>Blooms Corners Road and Warwick Views Access Drive</u>										
Northbound	Left/Thru							0.00	7.4	A
Eastbound	Left/Right							0.05	9.2	A

Table 4 cont.

**UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS
P.M. PEAK HOUR**

		<u>2006 Existing Traffic</u>			<u>2012 No-Build Condition</u>			<u>2012 Build Condition</u>		
<u>Intersection and Direction</u>	<u>Lane Group</u>	<u>V/C Ratio</u>	<u>Average Delay (Seconds)</u>	<u>Level of Service</u>	<u>V/C Ratio</u>	<u>Average Delay (Seconds)</u>	<u>Level of Service</u>	<u>V/C Ratio</u>	<u>Average Delay (Seconds)</u>	<u>Level of Service</u>
<u>Pine Island Turnpike/CR1 and Blooms Corners Road</u>										
Eastbound	All	0.05	7.9	A	0.09	8.1	A	0.09	8.1	A
Westbound	All	0.01	7.5	A	0.01	7.6	A	0.01	7.6	A
Northbound	All	0.15	15.8	C	0.32	25.1	D	0.40	28.2	D
Southbound	All	0.38	15.8	C	0.65	27.3	D	0.73	33.6	D
<u>Edenville Road/CR1A and Waterbury Road</u>										
Northbound	Left/Thru	0.04	7.8	A	0.05	7.9	A	0.06	7.9	A
Eastbound	Left/Right	0.05	10.4	B	0.07	11.0	B	0.07	11.0	B
<u>Blooms Corners Road and Woodbury Road</u>										
North Intersection										
Southbound	Left/Thru	0.00	7.3	A	0.00	7.3	A	0.01	7.3	A
Westbound	Right	0.00	8.5	A	0.01	8.6	A	0.01	8.6	A
South Intersection										
Westbound	Left	0.02	9.1	A	0.03	9.4	A	0.03	9.3	A
East Intersection										
Southbound	Right	0.01	8.4	A	0.01	8.4	A	0.01	8.5	A
<u>Blooms Corners Road and Newport Bridge Road</u>										
North Intersection										
Eastbound	Left	0.02	9.0	A	0.04	9.3	A	0.04	9.3	A
South Intersection										
Northbound	Left/Thru	0.01	7.3	A	0.02	7.3	A	0.02	7.4	A
Eastbound	Right	0.01	8.5	A	0.01	8.6	A	0.01	8.6	A
West Intersection										
Northbound	Left	0.02	8.8	A	0.06	9.1	A	0.05	9.0	A
Single Intersection										
Northbound	Left/Thru				0.02	7.5	A	0.02	7.5	A
Eastbound	Left/Right				0.06	9.6	A	0.05	9.5	A
<u>Blooms Corners Road and Warwick Views Access Drive</u>										
Northbound	Left/Thru							0.01	7.4	A
Eastbound	Left/Right							0.03	9.3	A

Intersection Assessments

Pine Island Turnpike/CR 1 and Blooms Corners Road. This is a standard four way unsignalized intersection, with Stop sign controls on the northbound and southbound approaches.

In the 2006 Existing conditions, the Stop sign-controlled approaches operate at Level of Service B in the A.M. peak hour and Level of Service C in the P.M. peak hour. In the 2012 No-Build condition, these approaches are projected to operate at Level of Service C in the A.M. peak hour and Level of Service D in the P.M. peak hour. In the 2012 Build condition the only change is in the A.M. peak hour on the southbound approach which drops from Level of Service B to Level of Service C. The eastbound and Westbound approaches operate and are projected to operate at Level of Service A under all conditions. No mitigation measures are required.

Edenville Road/CR 1A and Waterbury Road. This is a three-way unsignalized intersection, with Waterbury Road intersecting at a sharp angle, A fourth approach leg, Dekay Road, intersects Waterbury Road just before the intersection with Edenville Road. For the purpose of this analysis the traffic volumes of Waterbury Road and Dekay Road have been combined, and the capacity analysis analyzes it as a single three-way intersection, with Stop sign control on the Waterbury Road approach.

The capacity analysis calculates a Level of Service A operation on the northbound Edenville Road approach (shared left turn/thru lane) and Level of Service B on the Waterbury Road approach in the 2006 Existing and 2012 No-Build and Build conditions for both the A.M. and P.M. peak hours. No mitigation measures are required.

Blooms Corners Road and Waterbury Road. This is a compound three way channelized intersection, with Waterbury Road splitting off into north and south legs. Stop signs are mounted on both Waterbury Road approaches to Blooms Corners Road and on the north leg of the Woodbury Road approach to the south leg.

The intersection has been analyzed as three separate intersections, identified as the north, south and east intersections. The capacity analysis calculates a Level of Service A at all three intersections in the 2006 Existing and 2012 No-Build and Build conditions for both the A.M. and P.M. peak hours. No mitigation measures are required.

Blooms Corners Road and Newport Bridge Road. This is a compound three way channelized intersection, with Newport Bridge Road splitting off into north and south legs. Stop signs are mounted on both Newport Bridge Road approaches to Blooms Corners Road and on the south leg of the Newport Bridge Road approach to the north leg.

The intersection has been analyzed as three separate intersections, identified as the north, south and west intersections. The capacity analysis calculates a Level of Service A at all three intersections in the 2006 Existing and 2012 No-Build and Build conditions for both the A.M. and P.M. peak hours. No mitigation measures are required.

The proposed development plan for Luft Farms calls for this intersection to be reconstructed as a simple three-way "T" intersection, with Stop sign control on the Newport Bridge Road approach. Capacity analyses for this intersection alignment were run for the 2012 No-Build and Build conditions. The results of these analyses, included in Table 4 and identified as "single intersection," show a Level of Service A at the single intersection in the 2012 No-Build and Build conditions for both the A.M. and P.M. peak hours. No mitigation measures would be required.

Blooms Corners Road and Warwick Views Access Dr. This will be a three-way unsignalized intersection, with Stop sign control on the Access Road approach. The capacity analysis calculates a Level of Service A in the 2012 Build condition for both the A.M. and P.M. peak hours.

It is noted that, because in the Build condition some traffic from the Luft Farms development exits to Blooms Corners Road via the Warwick Views access road rather than to Newport Bridge Road, the average vehicle delays on a few lane groups at the intersections of Bloom Corners with Waterbury Road and with Newport Bridge Road actually decrease by 0.1 seconds from the No-Build to the Build condition. This is an insignificant change.

CONCLUSION

On the basis of the analysis presented in this report, it is concluded that traffic generated by Warwick Views can be accommodated on the adjacent road system without any significant adverse impacts, and that no additional road improvements will be required.

APPENDIX
CAPACITY ANALYSIS
CALCULATIONS

EXISTING CONDITION

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1BLOXA1
 Date Performed: 12/30/2006
 Analysis Time Period: A.M. Peak Hour
 Intersection: CR 1 and Blooms Corners Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID:
 East/West Street: CR 1/Pine Island Turnpike
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Eastbound				Westbound		
	1 L	2 T	3 R	4 L	5 T	6 R	
Volume	78	196	9	4	83	19	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR	86	217	10	4	92	21	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type/Storage	Undivided			/			
RT Channelized?							
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		
Upstream Signal?	No				No		

Minor Street: Approach Movement	Northbound			Southbound			
	7 L	8 T	9 R	10 L	11 T	12 R	
Volume	7	37	8	6	18	39	
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR	7	41	8	6	20	43	
Percent Heavy Vehicles	0	5	0	17	6	0	
Percent Grade (%)	0				0		
Flared Approach: Exists?/Storage	0		No	/		No	/
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	EB	WB	Northbound			Southbound		
	1 LTR	4 LTR	7 	8 LTR	9 	10 	11 LTR	12
v (vph)	86	4		56			69	
C(m) (vph)	1489	1353		454			644	
v/c	0.06	0.00		0.12			0.11	
95% queue length	0.18	0.01		0.42			0.36	
Control Delay	7.6	7.7		14.0			11.3	
LOS	A	A		B			B	
Approach Delay				14.0				11.3
Approach LOS				B				B

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1BLOXP1
 Date Performed: 12/30/2006
 Analysis Time Period: P.M. Peak Hour
 Intersection: CR 1 and Blooms Corners Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID:
 East/West Street: CR 1/Pine Island Turnpike
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Eastbound				Westbound		
	1 L	2 T	3 R		4 L	5 T	6 R
Volume	64	120	13		8	206	33
Peak-Hour Factor, PHF	0.93	0.93	0.93		0.93	0.93	0.93
Hourly Flow Rate, HFR	68	129	13		8	221	35
Percent Heavy Vehicles	0	--	--		0	--	--
Median Type/Storage	Undivided				/		
RT Channelized?							
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		
Upstream Signal?	No				No		

Minor Street: Approach Movement	Northbound				Southbound		
	7 L	8 T	9 R		10 L	11 T	12 R
Volume	25	23	11		40	64	86
Peak Hour Factor, PHF	0.93	0.93	0.93		0.93	0.93	0.93
Hourly Flow Rate, HFR	26	24	11		43	68	92
Percent Heavy Vehicles	0	0	0		3	3	0
Percent Grade (%)	0				0		
Flared Approach: Exists?/Storage	No				No		
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Lane Config	LTR	LTR		LTR			LTR	
v (vph)	68	8		61			203	
C(m) (vph)	1321	1453		395			533	
v/c	0.05	0.01		0.15			0.38	
95% queue length	0.16	0.02		0.54			1.77	
Control Delay	7.9	7.5		15.8			15.8	
LOS	A	A		C			C	
Approach Delay				15.8				15.8
Approach LOS				C				C

 TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1AWATXA1
 Date Performed: 12/30/2006
 Analysis Time Period: A.M. Peak Hour
 Intersection: CR 1A and Waterbury Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID:
 East/West Street: Waterbury Road
 North/South Street: CR1A/Pine Island Turnpike
 Intersection Orientation: NS Study period (hrs): 0.25

 Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		16	132			236	2	
Peak-Hour Factor, PHF		0.90	0.90			0.90	0.90	
Hourly Flow Rate, HFR		17	146			262	2	
Percent Heavy Vehicles		18	--	--		--	--	
Median Type/Storage		Undivided				/		
RT Channelized?								
Lanes		0	1			1	0	
Configuration		LT				TR		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume					7		25
Peak Hour Factor, PHF					0.90		0.90
Hourly Flow Rate, HFR					7		27
Percent Heavy Vehicles					4		25
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		No /
Lanes					0		0
Configuration						LR	

 Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	17						34	
C(m) (vph)	1213						682	
v/c	0.01						0.05	
95% queue length	0.04						0.16	
Control Delay	8.0						10.6	
LOS	A						B	
Approach Delay							10.6	
Approach LOS							B	

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLONXA1
 Date Performed: 12/30/2006
 Analysis Time Period: A.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID: North Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound			
		1 L	2 T	3 R	4 L	5 T	6 R		
Volume			22		8	33			
Peak-Hour Factor, PHF			0.91		0.91	0.91			
Hourly Flow Rate, HFR			24		8	36			
Percent Heavy Vehicles			--	--	45	--	--		
Median Type/Storage		Undivided				/			
RT Channelized?									
Lanes			1		0	1			
Configuration			T			LT			
Upstream Signal?			No			No			

Minor Street:	Approach Movement	Westbound				Eastbound			
		7 L	8 T	9 R	10 L	11 T	12 R		
Volume				11					
Peak Hour Factor, PHF				0.91					
Hourly Flow Rate, HFR				12					
Percent Heavy Vehicles				0					
Percent Grade (%)		0				0			
Flared Approach: Exists?/Storage					/		/		
Lanes				1					
Configuration				R					

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound				Eastbound			
			1	4	7	8	9	10	11	12
Lane Config		LT				R				
v (vph)		8				12				
C(m) (vph)		1352				1058				
v/c		0.01				0.01				
95% queue length		0.02				0.03				
Control Delay		7.7				8.4				
LOS		A				A				
Approach Delay					8.4					
Approach LOS					A					

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLONXP1
 Date Performed: 12/30/2006
 Analysis Time Period: P.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID: North Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		31			6	35		
Peak-Hour Factor, PHF		0.90			0.90	0.90		
Hourly Flow Rate, HFR		34			6	38		
Percent Heavy Vehicles		--		--	0	--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1			0	1		
Configuration		T				LT		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume				5			
Peak Hour Factor, PHF				0.90			
Hourly Flow Rate, HFR				5			
Percent Heavy Vehicles				0			
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		/
Lanes				1			
Configuration				R			

Delay, Queue Length, and Level of Service

Approach Movement	NB		Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config		LT			R			
v (vph)		6			5			
C(m) (vph)		1591			1045			
v/c		0.00			0.00			
95% queue length		0.01			0.01			
Control Delay		7.3			8.5			
LOS		A			A			
Approach Delay				8.5				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLOSXA1
 Date Performed: 12/30/2006
 Analysis Time Period: A.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID: South Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		22	7			41		
Peak-Hour Factor, PHF		1.00	1.00			1.00		
Hourly Flow Rate, HFR		22	7			41		
Percent Heavy Vehicles		--	--			--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1	0			1		
Configuration			TR			T		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		10					
Peak Hour Factor, PHF		0.91					
Hourly Flow Rate, HFR		10					
Percent Heavy Vehicles		40					
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage					/		/
Lanes		1					
Configuration		L					

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound		
			7 L	8	9	10	11	12
Lane Config			L					
v (vph)			10					
C(m) (vph)			852					
v/c			0.01					
95% queue length			0.04					
Control Delay			9.3					
LOS			A					
Approach Delay				9.3				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLOSXP1
 Date Performed: 12/30/2006
 Analysis Time Period: P.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID: South Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		31	11			35		
Peak-Hour Factor, PHF		0.90	0.90			0.90		
Hourly Flow Rate, HFR		34	12			38		
Percent Heavy Vehicles		--	--			--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1	0			1		
Configuration			TR			T		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		16					
Peak Hour Factor, PHF		0.90					
Hourly Flow Rate, HFR		17					
Percent Heavy Vehicles		13					
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage					/		/
Lanes		1					
Configuration		L					

Delay, Queue Length, and Level of Service

Approach Movement	NB		Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config			L					
v (vph)			17					
C(m) (vph)			898					
v/c			0.02					
95% queue length			0.06					
Control Delay			9.1					
LOS			A					
Approach Delay				9.1				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: NEWBLOWXA1
 Date Performed: 1/1/2007
 Analysis Time Period: A.M. Peak Hour
 Intersection: Newport Bridge-Blooms Corners
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID: West Leg
 East/West Street: Newport Bridge Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Eastbound				Westbound			
		1 L	2 T	3 R	4 L	5 T	6 R		
Volume		15	6			11			
Peak-Hour Factor, PHF		0.78	0.78			0.78			
Hourly Flow Rate, HFR		19	7			14			
Percent Heavy Vehicles		--	--			--	--		
Median Type/Storage RT Channelized?		Undivided		/					
Lanes		1	0			1			
Configuration			TR			T			
Upstream Signal?		No				No			

Minor Street:	Approach Movement	Northbound				Southbound			
		7 L	8 T	9 R	10 L	11 T	12 R		
Volume		6							
Peak Hour Factor, PHF		0.78							
Hourly Flow Rate, HFR		7							
Percent Heavy Vehicles		17							
Percent Grade (%)			-3			0			
Flared Approach: Exists?/Storage				/			/		
Lanes		1							
Configuration		L							

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound				Southbound			
			7 L	8	9	10 L	11	12		
Lane Config										
v (vph)			7							
C(m) (vph)			940							
v/c			0.01							
95% queue length			0.02							
Control Delay			8.9							
LOS			A							
Approach Delay				8.9						
Approach LOS				A						

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: NEWBLOWXP1
 Date Performed: 1/1/2007
 Analysis Time Period: P.M. Peak Hour
 Intersection: Newport Bridge-Blooms Corners
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2006 Existing
 Project ID: West Leg
 East/West Street: Newport Bridge Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Eastbound				Westbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		19	6			28		
Peak-Hour Factor, PHF		0.89	0.89			0.89		
Hourly Flow Rate, HFR		21	6			31		
Percent Heavy Vehicles		--	--			--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1	0			1		
Configuration			TR			T		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Northbound				Southbound		
		7 L	8 T	9 R	10 L	11 T	12 R	
Volume		15						
Peak Hour Factor, PHF		0.89						
Hourly Flow Rate, HFR		16						
Percent Heavy Vehicles		0						
Percent Grade (%)			-3			0		
Flared Approach: Exists?/Storage					/		/	
Lanes		1						
Configuration		L						

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
			7 L	8	9	10 	11	12
Movement	1	4						
Lane Config								
v (vph)			16					
C(m) (vph)			958					
v/c			0.02					
95% queue length			0.05					
Control Delay			8.8					
LOS			A					
Approach Delay				8.8				
Approach LOS				A				

NO-BUILD CONDITION

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1BLONA1
 Date Performed: 04/02/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: CR 1 and Blooms Corners Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID:
 East/West Street: CR 1/Pine Island Turnpike
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Eastbound				Westbound		
	1 L	2 T	3 R		4 L	5 T	6 R
Volume	129	240	14		5	100	24
Peak-Hour Factor, PHF	0.90	0.90	0.90		0.90	0.90	0.90
Hourly Flow Rate, HFR	143	266	15		5	111	26
Percent Heavy Vehicles	0	--	--		0	--	--
Median Type/Storage	Undivided						
RT Channelized?							
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		
Upstream Signal?	No				No		

Minor Street: Approach Movement	Northbound				Southbound		
	7 L	8 T	9 R		10 L	11 T	12 R
Volume	11	55	9		13	28	59
Peak Hour Factor, PHF	0.90	0.90	0.90		0.90	0.90	0.90
Hourly Flow Rate, HFR	12	61	10		14	31	65
Percent Heavy Vehicles	0	5	0		17	6	0
Percent Grade (%)	0				0		
Flared Approach: Exists?/Storage	No				No		
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Lane Config	LTR	LTR		LTR			LTR	
v (vph)	143	5		83			110	
C(m) (vph)	1459	1293		327			488	
v/c	0.10	0.00		0.25			0.23	
95% queue length	0.33	0.01		0.99			0.86	
Control Delay	7.7	7.8		19.7			14.5	
LOS	A	A		C			B	
Approach Delay				19.7			14.5	
Approach LOS				C			B	

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1BLONP1
 Date Performed: 12/30/2006
 Analysis Time Period: P.M. Peak Hour
 Intersection: CR 1 and Blooms Corners Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID:
 East/West Street: CR 1/Pine Island Turnpike
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Eastbound				Westbound		
	1 L	2 T	3 R	4 L	5 T	6 R	
Volume	104	145	18	9	249	44	
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly Flow Rate, HFR	111	155	19	9	267	47	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type/Storage	Undivided			/			
RT Channelized?							
Lanes Configuration	0	1	0		0	1	
Upstream Signal?	LTR No				LTR No		

Minor Street: Approach Movement	Northbound			Southbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume	31	35	12	49	84	131
Peak Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Hourly Flow Rate, HFR	33	37	12	52	90	140
Percent Heavy Vehicles	0	0	0	3	3	0
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		No
Lanes Configuration	0	1	0		0	1
	LTR				LTR	

Delay, Queue Length, and Level of Service

Approach Movement Lane Config	EB	WB	Northbound			Southbound		
	1 LTR	4 LTR	7 LTR	8 LTR	9 LTR	10 LTR	11 LTR	12 LTR
v (vph)	111	9		82			282	
C(m) (vph)	1258	1415		260			435	
v/c	0.09	0.01		0.32			0.65	
95% queue length	0.29	0.02		1.31			4.48	
Control Delay	8.1	7.6		25.1			27.3	
LOS	A	A		D			D	
Approach Delay				25.1			27.3	
Approach LOS				D			D	

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1AWATNP1
 Date Performed: 12/30/2006
 Analysis Time Period: P.M. Peak Hour
 Intersection: CR 1A and Waterbury Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID:
 East/West Street: Waterbury Road
 North/South Street: CR1A/Pine Island Turnpike
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound			
		1 L	2 T	3 R	4 L	5 T	6 R		
Volume		64	368			205	3		
Peak-Hour Factor, PHF		0.90	0.90			0.90	0.90		
Hourly Flow Rate, HFR		71	408			227	3		
Percent Heavy Vehicles		5	--	--		--	--		
Median Type/Storage		Undivided				/			
RT Channelized?									
Lanes		0	1			1	0		
Configuration		LT				TR			
Upstream Signal?		No				No			

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume					8		31
Peak Hour Factor, PHF					0.90		0.90
Hourly Flow Rate, HFR					8		34
Percent Heavy Vehicles					0		4
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		No /
Lanes					0		0
Configuration						LR	

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound			Eastbound		
			7	8	9	10	11	12
Lane Config	LT							LR
v (vph)	71						42	
C(m) (vph)	1320						644	
v/c	0.05						0.07	
95% queue length	0.17						0.21	
Control Delay	7.9						11.0	
LOS	A						B	
Approach Delay							11.0	
Approach LOS							B	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLONNA1
 Date Performed: 04/03/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID: North Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS
 Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume			41		9	49		
Peak-Hour Factor, PHF			0.91		0.91	0.91		
Hourly Flow Rate, HFR			45		9	53		
Percent Heavy Vehicles			--	--	45	--	--	
Median Type/Storage RT Channelized?		Undivided			/			
Lanes			1		0	1		
Configuration			T			LT		
Upstream Signal?			No			No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume				12			
Peak Hour Factor, PHF				0.91			
Hourly Flow Rate, HFR				13			
Percent Heavy Vehicles				0			
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		/
Lanes			1				
Configuration			R				

Delay, Queue Length, and Level of Service

Approach Movement	NB		Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config		LT			R			
v (vph)		9			13			
C(m) (vph)		1327			1031			
v/c		0.01			0.01			
95% queue length		0.02			0.04			
Control Delay		7.7			8.5			
LOS		A			A			
Approach Delay				8.5				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLONNP1
 Date Performed: 04/03/07
 Analysis Time Period: P.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID: North Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		48			7	55		
Peak-Hour Factor, PHF		0.90			0.90	0.90		
Hourly Flow Rate, HFR		53			7	61		
Percent Heavy Vehicles		--		--	0	--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1			0	1		
Configuration		T			LT			
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume				6			
Peak Hour Factor, PHF				0.90			
Hourly Flow Rate, HFR				6			
Percent Heavy Vehicles				0			
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		
Lanes			1			/	
Configuration			R				

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound		
			4 LT	7	8	9 R	10	11
v (vph)		7			6			
C(m) (vph)		1566			1020			
v/c		0.00			0.01			
95% queue length		0.01			0.02			
Control Delay		7.3			8.6			
LOS		A			A			
Approach Delay				8.6				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLOSNA1
 Date Performed: 04/03/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID: South Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound	
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		41	14			49	
Peak-Hour Factor, PHF		1.00	1.00			1.00	
Hourly Flow Rate, HFR		41	14			49	
Percent Heavy Vehicles		--	--			--	--
Median Type/Storage RT Channelized?		Undivided /					
Lanes Configuration		1	0 TR			1 T	
Upstream Signal?		No				No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		13					
Peak Hour Factor, PHF		0.91					
Hourly Flow Rate, HFR		14					
Percent Heavy Vehicles		40					
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		/
Lanes Configuration		1 L					

Delay, Queue Length, and Level of Service

Approach Movement	NB		SB			Westbound			Eastbound		
	1	4	7	8	9	10	11	12			
Lane Config			 L								
v (vph)			14								
C(m) (vph)			818								
v/c			0.02								
95% queue length			0.05								
Control Delay			9.5								
LOS			A								
Approach Delay				9.5							
Approach LOS				A							

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLOSNP1
 Date Performed: 04/03/07
 Analysis Time Period: P.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID: South Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS

Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound	
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		48		16		55	
Peak-Hour Factor, PHF		0.90		0.90		0.90	
Hourly Flow Rate, HFR		53		17		61	
Percent Heavy Vehicles		--		--		--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes		1		0		1	
Configuration				TR		T	
Upstream Signal?				No		No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		23					
Peak Hour Factor, PHF		0.90					
Hourly Flow Rate, HFR		25					
Percent Heavy Vehicles		13					
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage					/		/
Lanes		1					
Configuration			L				

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config			L					
v (vph)			25					
C(m) (vph)			846					
v/c			0.03					
95% queue length			0.09					
Control Delay			9.4					
LOS			A					
Approach Delay				9.4				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: NEWBLOWNP1
 Date Performed: 04/02/07
 Analysis Time Period: P.M. Peak Hour
 Intersection: Newport Bridge-Blooms Corners
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 No-Build
 Project ID: West Leg
 East/West Street: Newport Bridge Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW

Study period (hrs): 0.25

Major Street:	Approach Movement	Vehicle Volumes and Adjustments					
		Eastbound			Westbound		
		1	2	3	4	5	6
		L	T	R	L	T	R
Volume			33	9		23	
Peak-Hour Factor, PHF			0.89	0.89		0.89	
Hourly Flow Rate, HFR			37	10		25	
Percent Heavy Vehicles			--	--		--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		1	
Configuration				TR		T	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Vehicle Volumes and Adjustments					
		Northbound			Southbound		
		7	8	9	10	11	12
		L	T	R	L	T	R
Volume		50					
Peak Hour Factor, PHF		0.89					
Hourly Flow Rate, HFR		56					
Percent Heavy Vehicles		0					
Percent Grade (%)			-3			0	
Flared Approach: Exists?/Storage					/		/
Lanes		1					
Configuration		L					

Approach Movement	Delay, Queue Length, and Level of Service								
	EB	WB	Northbound			Southbound			
	1	4	7	8	9	10	11	12	
Lane Config			L						
v (vph)			56						
C(m) (vph)			943						
v/c			0.06						
95% queue length			0.19						
Control Delay			9.1						
LOS			A						
Approach Delay				9.1					
Approach LOS				A					

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: BLOWVBA1
 Date Performed: 4/3/2007
 Analysis Time Period: A.M. Peak Hour
 Intersection: Blooms Corner Rd and Site Dr
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID:
 East/West Street: Warwick Views Driveway
 North/South Street: Blooms Corner Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound			
		1 L	2 T	3 R	4 L	5 T	6 R		
Volume		3	47			56	10		
Peak-Hour Factor, PHF		0.91	0.91			0.91	0.91		
Hourly Flow Rate, HFR		3	51			61	10		
Percent Heavy Vehicles		2	--	--		--	--		
Median Type/Storage		Undivided				/			
RT Channelized?									
Lanes		0	1			1	0		
Configuration		LT				TR			
Upstream Signal?		No				No			

Minor Street:	Approach Movement	Westbound				Eastbound			
		7 L	8 T	9 R	10 L	11 T	12 R		
Volume					30			9	
Peak Hour Factor, PHF					0.91			0.91	
Hourly Flow Rate, HFR					32			9	
Percent Heavy Vehicles					2			2	
Percent Grade (%)		0				0			
Flared Approach: Exists?/Storage						/ No /			
Lanes						0		0	
Configuration						LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound				Eastbound			
			7	8	9	10	11	12		
Lane Config	LT								LR	
v (vph)	3							41		
C(m) (vph)	1529							895		
v/c	0.00							0.05		
95% queue length	0.01							0.14		
Control Delay	7.4							9.2		
LOS	A							A		
Approach Delay								9.2		
Approach LOS								A		

BUILD CONDITION

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1BLOBA1
 Date Performed: 04/02/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: CR 1 and Blooms Corners Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID:
 East/West Street: CR 1/Pine Island Turnpike
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Eastbound				Westbound		
	1 L	2 T	3 R		4 L	5 T	6 R
Volume	129	240	15		6	100	24
Peak-Hour Factor, PHF	0.90	0.90	0.90		0.90	0.90	0.90
Hourly Flow Rate, HFR	143	266	16		6	111	26
Percent Heavy Vehicles	0	--	--		0	--	--
Median Type/Storage	Undivided						
RT Channelized?							
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		
Upstream Signal?	No				No		

Minor Street: Approach Movement	Northbound				Southbound		
	7 L	8 T	9 R		10 L	11 T	12 R
Volume	14	72	12		13	34	59
Peak Hour Factor, PHF	0.90	0.90	0.90		0.90	0.90	0.90
Hourly Flow Rate, HFR	15	80	13		14	37	65
Percent Heavy Vehicles	0	5	0		17	6	0
Percent Grade (%)	0				0		
Flared Approach: Exists?/Storage	No				No		
Lanes	0	1	0		0	1	0
Configuration	LTR				LTR		

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Lane Config	LTR	LTR		LTR			LTR	
v (vph)	143	6		108			116	
C(m) (vph)	1459	1292		325			464	
v/c	0.10	0.00		0.33			0.25	
95% queue length	0.33	0.01		1.42			0.98	
Control Delay	7.7	7.8		21.5			15.3	
LOS	A	A		C			C	
Approach Delay				21.5			15.3	
Approach LOS				C			C	

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: CR1BLOBP1
 Date Performed: 12/30/2006
 Analysis Time Period: P.M. Peak Hour
 Intersection: CR 1 and Blooms Corners Road
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID:
 East/West Street: CR 1/Pine Island Turnpike
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Eastbound				Westbound	
		1 L	2 T	3 R	4 L	5 T	6 R
Volume		104	145	22	12	249	44
Peak-Hour Factor, PHF		0.93	0.93	0.93	0.93	0.93	0.93
Hourly Flow Rate, HFR		111	155	23	12	267	47
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type/Storage		Undivided				/	
RT Channelized?							
Lanes		0	1	0		0	1
Configuration		LTR				LTR	
Upstream Signal?		No				No	

Minor Street:	Approach Movement	Northbound			Southbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume		34	46	14	49	103	131
Peak Hour Factor, PHF		0.93	0.93	0.93	0.93	0.93	0.93
Hourly Flow Rate, HFR		36	49	15	52	110	140
Percent Heavy Vehicles		0	0	0	3	3	0
Percent Grade (%)		0			0		
Flared Approach: Exists?/Storage		No			/ No /		
Lanes		0	1	0		0	1
Configuration		LTR			LTR		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
			1	4 7	8	9 10	11	12
Movement	LTR	LTR	LTR			LTR		
Lane Config	LTR	LTR	LTR			LTR		
v (vph)	111	12	100			302		
C(m) (vph)	1258	1410	253			415		
v/c	0.09	0.01	0.40			0.73		
95% queue length	0.29	0.03	1.79			5.71		
Control Delay	8.1	7.6	28.2			33.6		
LOS	A	A	D			D		
Approach Delay			28.2			33.6		
Approach LOS			D			D		

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLONBA1
 Date Performed: 04/03/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: North Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS
 Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		36			15	49		
Peak-Hour Factor, PHF		0.91			0.91	0.91		
Hourly Flow Rate, HFR		39			16	53		
Percent Heavy Vehicles		--	--		45	--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1			0	1		
Configuration		T			LT			
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Westbound			Eastbound		
		7 L	8 T	9 R	10 L	11 T	12 R
Volume				14			
Peak Hour Factor, PHF				0.91			
Hourly Flow Rate, HFR				15			
Percent Heavy Vehicles				0			
Percent Grade (%)		0			0		
Flared Approach: Exists?/Storage					/	/	
Lanes			1				
Configuration			R				

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config		LT			R			
v (vph)		16			15			
C(m) (vph)		1334			1038			
v/c		0.01			0.01			
95% queue length		0.04			0.04			
Control Delay		7.7			8.5			
LOS		A			A			
Approach Delay				8.5				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLONBP1
 Date Performed: 04/03/07
 Analysis Time Period: P.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: North Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound	
		1	2	3	4	5	6
		L	T	R	L	T	R

Volume			47		11	52	
Peak-Hour Factor, PHF			0.90		0.90	0.90	
Hourly Flow Rate, HFR			52		12	57	
Percent Heavy Vehicles			--	--	0	--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1			0	1
Configuration			T			LT	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Westbound			Eastbound		
		7	8	9	10	11	12
		L	T	R	L	T	R

Volume				12			
Peak Hour Factor, PHF				0.90			
Hourly Flow Rate, HFR				13			
Percent Heavy Vehicles				0			
Percent Grade (%)		0				0	
Flared Approach: Exists?/Storage					/		/
Lanes				1			
Configuration				R			

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Lane Config	1	4	LT		R			

v (vph)		12			13		
C(m) (vph)		1567			1021		
v/c		0.01			0.01		
95% queue length		0.02			0.04		
Control Delay		7.3			8.6		
LOS		A			A		
Approach Delay				8.6			
Approach LOS				A			

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLOSBA1
 Date Performed: 04/03/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: South Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Major Street:	Approach Movement	Vehicle Volumes and Adjustments					
		Northbound			Southbound		
		1	2	3	4	5	6
		L	T	R	L	T	R
Volume			36	14		49	
Peak-Hour Factor, PHF			1.00	1.00		1.00	
Hourly Flow Rate, HFR			36	14		49	
Percent Heavy Vehicles			--	--		--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		1	
Configuration				TR		T	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Vehicle Volumes and Adjustments					
		Westbound			Eastbound		
		7	8	9	10	11	12
		L	T	R	L	T	R
Volume		13					
Peak Hour Factor, PHF		0.91					
Hourly Flow Rate, HFR		14					
Percent Heavy Vehicles		40					
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage					/		/
Lanes		1					
Configuration		L					

Approach Movement	Delay, Queue Length, and Level of Service							
	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Lane Config			L					
v (vph)			14					
C(m) (vph)			823					
v/c			0.02					
95% queue length			0.05					
Control Delay			9.4					
LOS			A					
Approach Delay				9.4				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: WATBLOSBP1
 Date Performed: 04/03/07
 Analysis Time Period: P.M. Peak Hour
 Intersection: Waterbury & Blooms Corners Rds
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: South Leg
 East/West Street: Waterbury Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Major Street:	Approach Movement	Vehicle Volumes and Adjustments					
		Northbound			Southbound		
		1	2	3	4	5	6
		L	T	R	L	T	R
Volume			47	16		52	
Peak-Hour Factor, PHF			0.90	0.90		0.90	
Hourly Flow Rate, HFR			52	17		57	
Percent Heavy Vehicles			--	--		--	--
Median Type/Storage		Undivided			/		
RT Channelized?							
Lanes			1	0		1	
Configuration				TR		T	
Upstream Signal?			No			No	

Minor Street:	Approach Movement	Vehicle Volumes and Adjustments					
		Westbound			Eastbound		
		7	8	9	10	11	12
		L	T	R	L	T	R
Volume		23					
Peak Hour Factor, PHF		0.90					
Hourly Flow Rate, HFR		25					
Percent Heavy Vehicles		13					
Percent Grade (%)			0			0	
Flared Approach: Exists?/Storage					/		/
Lanes		1					
Configuration		L					

Approach	Delay, Queue Length, and Level of Service							
	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config			L					
v (vph)			25					
C(m) (vph)			853					
v/c			0.03					
95% queue length			0.09					
Control Delay			9.3					
LOS			A					
Approach Delay				9.3				
Approach LOS				A				

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: NEWBLOWBA1
 Date Performed: 04/02/07
 Analysis Time Period: A.M. Peak Hour
 Intersection: Newport Bridge-Blooms Corners
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: West Leg
 East/West Street: Newport Bridge Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Eastbound				Westbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		32	11			9		
Peak-Hour Factor, PHF		0.78	0.78			0.78		
Hourly Flow Rate, HFR		41	14			11		
Percent Heavy Vehicles		--	--			--	--	
Median Type/Storage		Undivided		/				
RT Channelized?								
Lanes		1	0			1		
Configuration			TR			T		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Northbound				Southbound		
		7 L	8 T	9 R	10 L	11 T	12 R	
Volume		19						
Peak Hour Factor, PHF		0.78						
Hourly Flow Rate, HFR		24						
Percent Heavy Vehicles		17						
Percent Grade (%)			-3			0		
Flared Approach: Exists?/Storage				/			/	
Lanes		1						
Configuration		L						

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
			7 L	8	9	10	11	12
Lane Config	1	4						
v (vph)				24				
C(m) (vph)				912				
v/c				0.03				
95% queue length				0.08				
Control Delay				9.1				
LOS				A				
Approach Delay					9.1			
Approach LOS					A			

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: NEWBLOWBP1
 Date Performed: 04/02/07
 Analysis Time Period: P.M. Peak Hour
 Intersection: Newport Bridge-Blooms Corners
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: West Leg
 East/West Street: Newport Bridge Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Eastbound				Westbound		
		1 L	2 T	3 R	4 L	5 T	6 R	
Volume		30	9			23		
Peak-Hour Factor, PHF		0.89	0.89			0.89		
Hourly Flow Rate, HFR		33	10			25		
Percent Heavy Vehicles		--	--			--	--	
Median Type/Storage		Undivided			/			
RT Channelized?								
Lanes		1	0			1		
Configuration			TR			T		
Upstream Signal?		No				No		

Minor Street:	Approach Movement	Northbound				Southbound		
		7 L	8 T	9 R	10 L	11 T	12 R	
Volume		44						
Peak Hour Factor, PHF		0.89						
Hourly Flow Rate, HFR		49						
Percent Heavy Vehicles		0						
Percent Grade (%)			-3			0		
Flared Approach: Exists?/Storage					/		/	
Lanes		1						
Configuration		L						

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
			7 L	8	9	10	11	12
Lane Config	1	4						
v (vph)				49				
C(m) (vph)				948				
v/c				0.05				
95% queue length				0.16				
Control Delay				9.0				
LOS				A				
Approach Delay					9.0			
Approach LOS					A			

TWO-WAY STOP CONTROL SUMMARY

Analyst: jls
 Agency/Co.: File: NEWBLOCBA1
 Date Performed: 5/23/2007
 Analysis Time Period: A.M. Peak Hour
 Intersection: Newport Bridge-Blooms Corners
 Jurisdiction:
 Units: U. S. Customary
 Analysis Year: 2012 Build
 Project ID: Single Intersection (Combined)
 East/West Street: Newport Bridge Road
 North/South Street: Blooms Corners Road
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach Movement	Northbound				Southbound			
		1 L	2 T	3 R	4 L	5 T	6 R		
Volume		9	36			19	19		
Peak-Hour Factor, PHF		0.78	0.78			0.78	0.78		
Hourly Flow Rate, HFR		11	46			24	24		
Percent Heavy Vehicles		17	--	--		--	--		
Median Type/Storage RT Channelized?		Undivided /							
Lanes Configuration		0	1			1	0		
Upstream Signal?		LT No				TR No			

Minor Street:	Approach Movement	Westbound				Eastbound			
		7 L	8 T	9 R	10 L	11 T	12 R		
Volume					32		11		
Peak Hour Factor, PHF					0.78		0.78		
Hourly Flow Rate, HFR					41		14		
Percent Heavy Vehicles					7		17		
Percent Grade (%)		0				5			
Flared Approach: Exists?/Storage						/	No /		
Lanes Configuration						0	0		
						LR			

Delay, Queue Length, and Level of Service

Approach Movement	NB 1	SB 4	Westbound				Eastbound			
			7	8	9	10	11	12		
Lane Config	LT									LR
v (vph)	11							55		
C(m) (vph)	1468							903		
v/c	0.01							0.06		
95% queue length	0.02							0.19		
Control Delay	7.5							9.2		
LOS	A							A		
Approach Delay								9.2		
Approach LOS								A		

