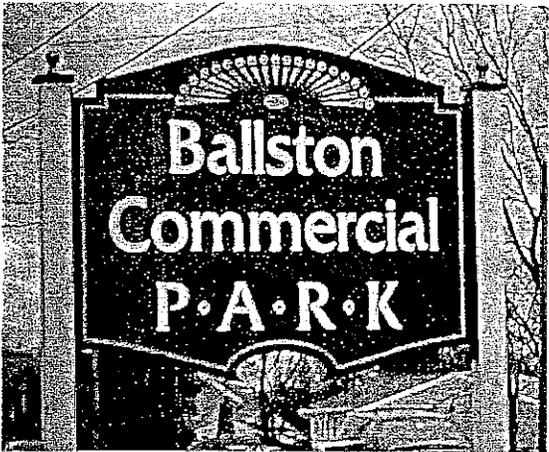
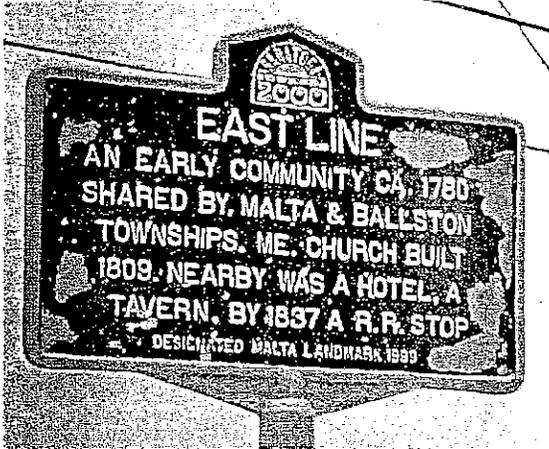


**Appendix H**  
**New York State Route 67 Traffic Impact Analysis,**  
**January 2006**



# Route 67 Corridor Study

in

The Towns of Ballston and Malta,  
Saratoga County

Prepared for the  
Capital District Transportation Committee  
(CDTC)

by  
Buckhurst Fish & Jacquemart, Inc.

January, 2006

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Prepared by:  
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## 1. Introduction

The Route 67 Corridor has experienced increased traffic demand as the surrounding towns have grown. Approximately 15,000 to 18,000 vehicles travel Route 67 between the Northway interchange and Route 50 daily, up from 13,500 to 16,000 just three years ago<sup>1</sup>. Route 67 has become a major east-west connector and congestion is becoming an issue. Projected development in the surrounding Village of Ballston Spa, and Towns of Ballston and Malta is expected to put increased pressure on the corridor.

The goal of the study is to provide short-term (one to six year) solutions to improve the transportation infrastructure. Specifically, this study will provide recommendations for intersection improvements, safe and more efficient roadway configurations and potential parallel access road configurations. BFJ does not recommend any of the development mentioned within the report, but simply advises ways to mitigate some of the negative traffic impacts if the proposed developments are built. In addition, an access management plan was developed in an effort to improve ingress/egress throughout the corridor. The study also developed a bicycle and pedestrian plan to facilitate safe crossings of the corridor. Finally, larger issues will be identified for future study considerations.

The study area includes Route 67 from V-Corners, where Route 67 intersects and overlaps with Route 50 to the I-87 interchange. Brookline Road, between Routes 50 and 67 is also part of the study area (see Figure 1.1). The study area is split between two towns, the Town of Ballston, which is located to the west of Eastline Road and the Town of Malta to the east. Due to increasing development pressures, the town of Malta enacted a building moratorium in August 2004 to rewrite their master plan. Malta's moratorium was enacted prior to the beginning of this study, and expired in August 2005. The Town of Ballston, which is facing similar congestion and development issues enacted a moratorium in February 2005 to update their master plan and zoning. The Town of Ballston's moratorium is expected to be in place for one year.

BFJ was retained by the Capital District Transportation Committee (CDTC) to provide suggestions on how to improve the corridor without widening Route 67. As part of the study process BFJ organized a series of five meetings with an advisory committee made up of representatives from the Planning Boards of the Towns of Malta & Ballston, Saratoga County Planning Department, CDTC, New York State Department of Transportation (NYSDOT) Region 1, and Town of Ballston Land Conservation Committee. The meetings were held both to gather information and to receive feedback from specific proposals put forth.

## 2. Existing Traffic Conditions

### 2.1. Existing Roadway Conditions

Route 67 runs in an east-west orientation in the eastern portion of the study area and a north-south direction in the western portion. The Route 67 Corridor which runs from the I-87 interchange to the overlap with Route 50 is approximately 3 ¼ miles in length. Brookline Road from Route 67 to Route 50 is approximately 0.5 miles in length. This two-lane urban arterial's

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<sup>1</sup> Capital District Transportation Committee, Route 67 Corridor Study RFP, November 2004, pg. 1



The Route 67 study corridor is represented by the red line. It begins at I-87 in the east and ends at the Route 67/50 overlap to the west.

Brookline Road between Route 67 and Route 50 is also included in the study area.

Property lines in the Town of Malta are yellow.  
Property lines in the Town of Ballston are white.

**FIGURE 1.1 STUDY AREA**

**ROUTE 67 CORRIDOR STUDY**

0.5 miles



BFJ Planning, June 2005  
Source: NYS GIS Clearinghouse

surface condition is generally perceived to be good. Route 67 between V-Corners and Eastline Road is 22 feet wide with 2-3 foot shoulders. The section between Eastline Road and I-87 is generally 24 feet wide with a two foot shoulder. There are no sidewalks along Route 67 within the study area. The speed limit along Route 67 is 45 MPH, while along Route 50 the speed limit is 40 MPH. At the start of the study, traffic signals spacing was one to two miles. Some of the signals at the easterly end of the corridor are in the process of being replaced by roundabouts.

## 2.2. Existing Land Uses and Zoning

In order to better understand the study area, a map was created showing the zoning in the two towns. As seen in Figure 2.1, zoning differs greatly between the Towns of Ballston and Malta, with the Town of Ballston dominated by Industrial and Commercial Zoning. In the Town of Malta, zoning is largely residential along the Route 67 corridor, with PDD (Planned Development District) being open to a variety of uses. Commercial activity is permitted along the Route 9 Corridor.

To better understand current development patterns, a land use survey was performed in February 2005. The results are shown in the existing Land Use Map (Figure 2.2). As can be seen, Malta's portion of the study area is dominated by former agricultural uses, while in the Town of Ballston, land uses are divided between vacant, industrial and residential. A "soft site" map which shows the locations where development is proposed, property is for sale or vacant is shown in Figure 2.3. As can be seen approximately 50% of the frontage along Route 67 falls into one of these categories.

## 2.3. Daily Traffic Volumes

Recent traffic volumes were obtained from NYSDOT for the study area. The traffic volume report shows the number of vehicles passing a specific location on an hourly basis. The readings are taken over several days. The average weekday and weekend counts are then multiplied by different factors (seasonal, local conditions) to get the estimated Average Annual Daily Traffic (AADT). Figure 2.4 shows the AADT volumes (with corresponding dates taken) for the various portions of the study area. Other readings are listed as ADT which are simply raw averages and have not been adjusted to compensate for seasonal variations. The AADT along Route 67 west of the Northway interchange is almost 18,000 for both directions together.

## 2.4. Peak Hour Traffic Volumes

BFJ gathered peak hour traffic volumes from a variety of sources, including CDTC, NYSDOT and traffic impact statements for projects within the study area. AM peak traffic volumes are displayed in Figure 2.5, and PM peak hour volumes in Figure 2.6. The peak hour varied by intersection as shown in Table 2.1, with the AM peak hour occurring between 7:00AM and 8:30AM, and the PM peak hour between 4:15PM and 5:45PM.

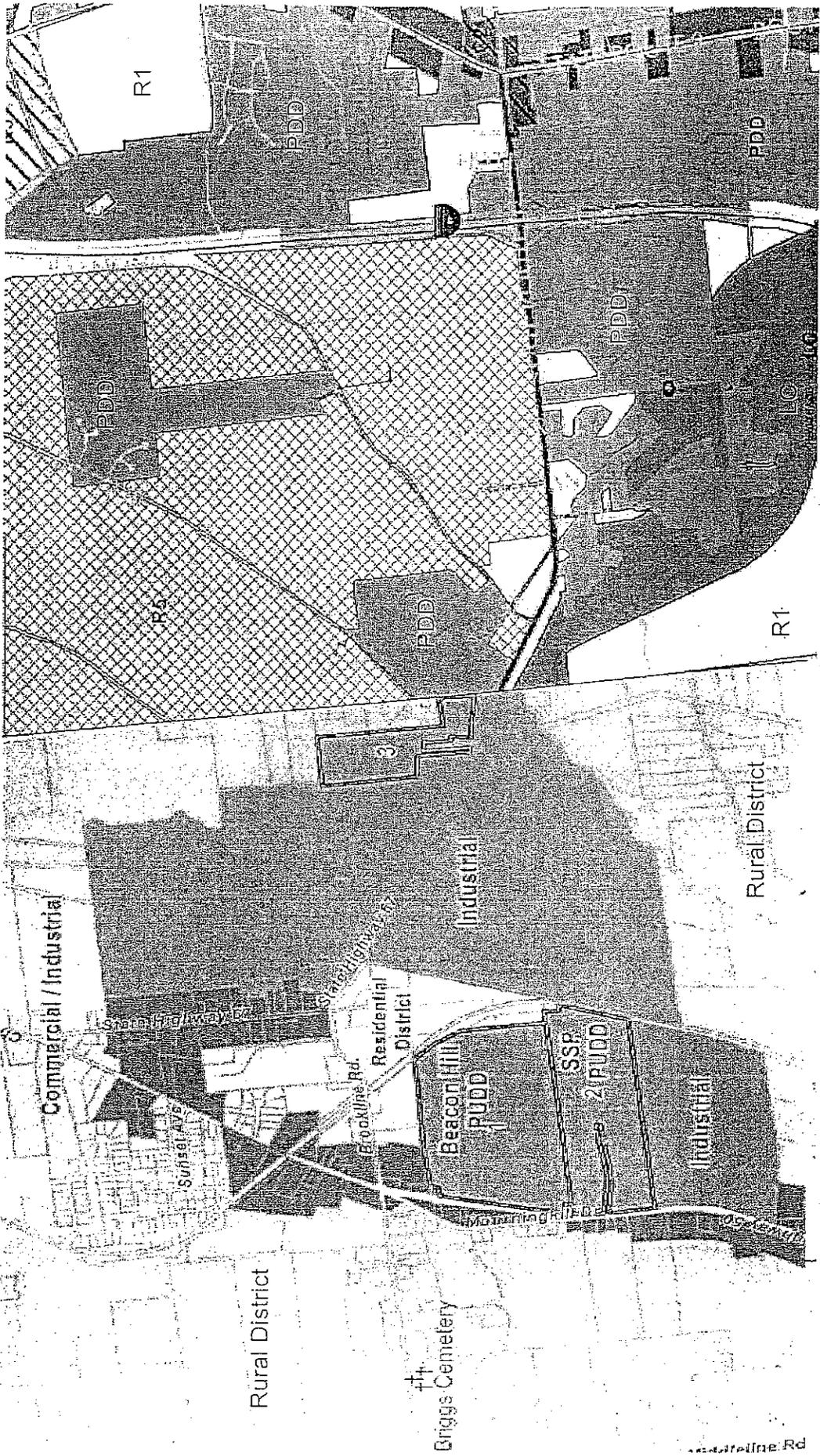


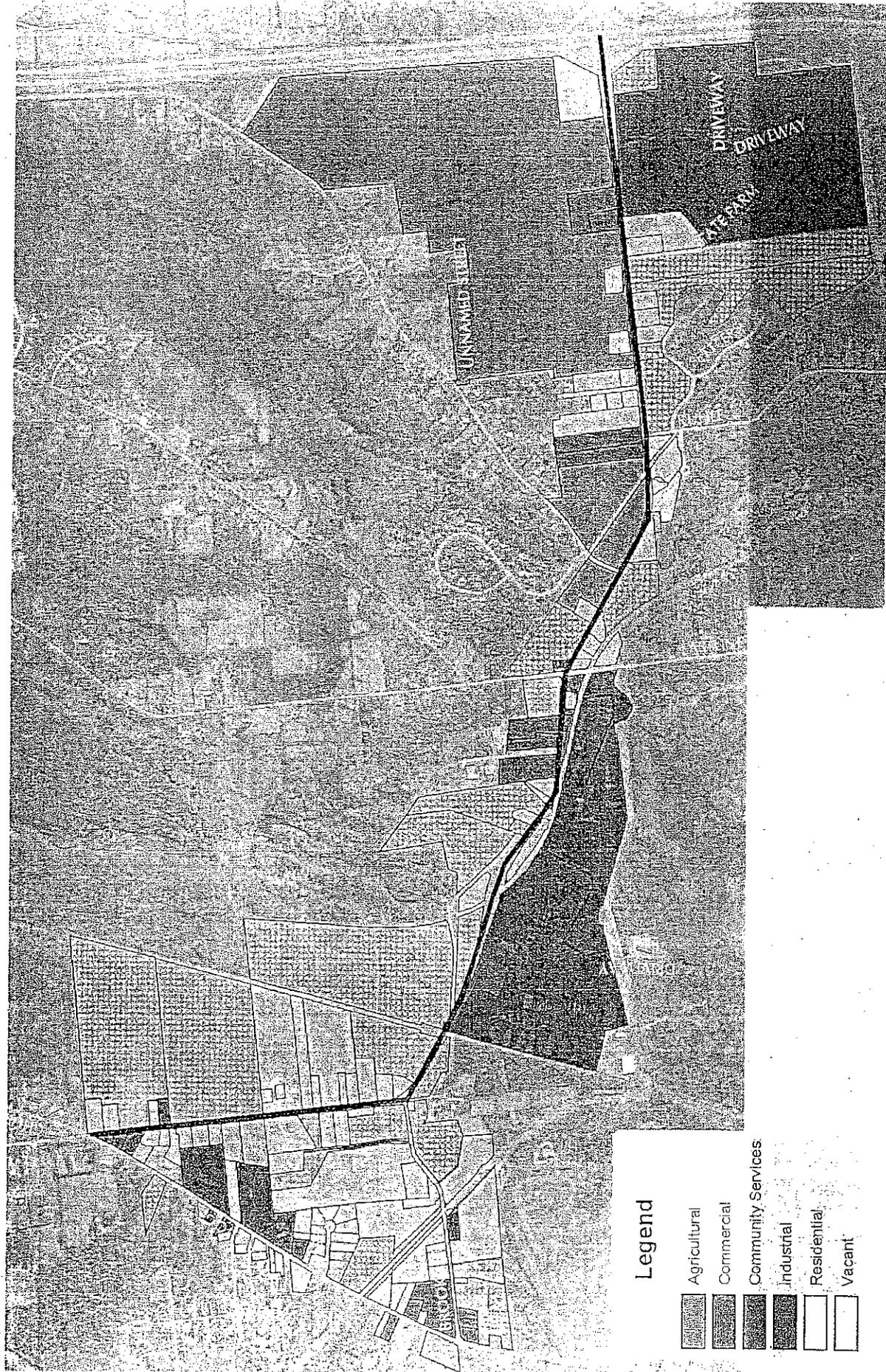
FIGURE 2.1 ZONING MAP - TOWNS OF BALLSTON AND MALTA

**ROUTE 67 CORRIDOR STUDY**

0.5 miles



BRT Planning June 2005  
 Source: Town of Malta  
 Town of Ballston



**ROUTE 67 CORRIDOR STUDY**  
**FIGURE 2.2 EXISTING LAND USES ALONG THE ROUTE 67 CORRIDOR**



**FIGURE 2.3 PROPERTIES FOR SALE, UNDER DEVELOPMENT OR VACANT ALONG THE CORRIDOR**

**ROUTE 67 CORRIDOR STUDY**

BEJ Planning June 2005  
 Source: Town of Ballston  
 Saratoga County  
 Land Use Survey

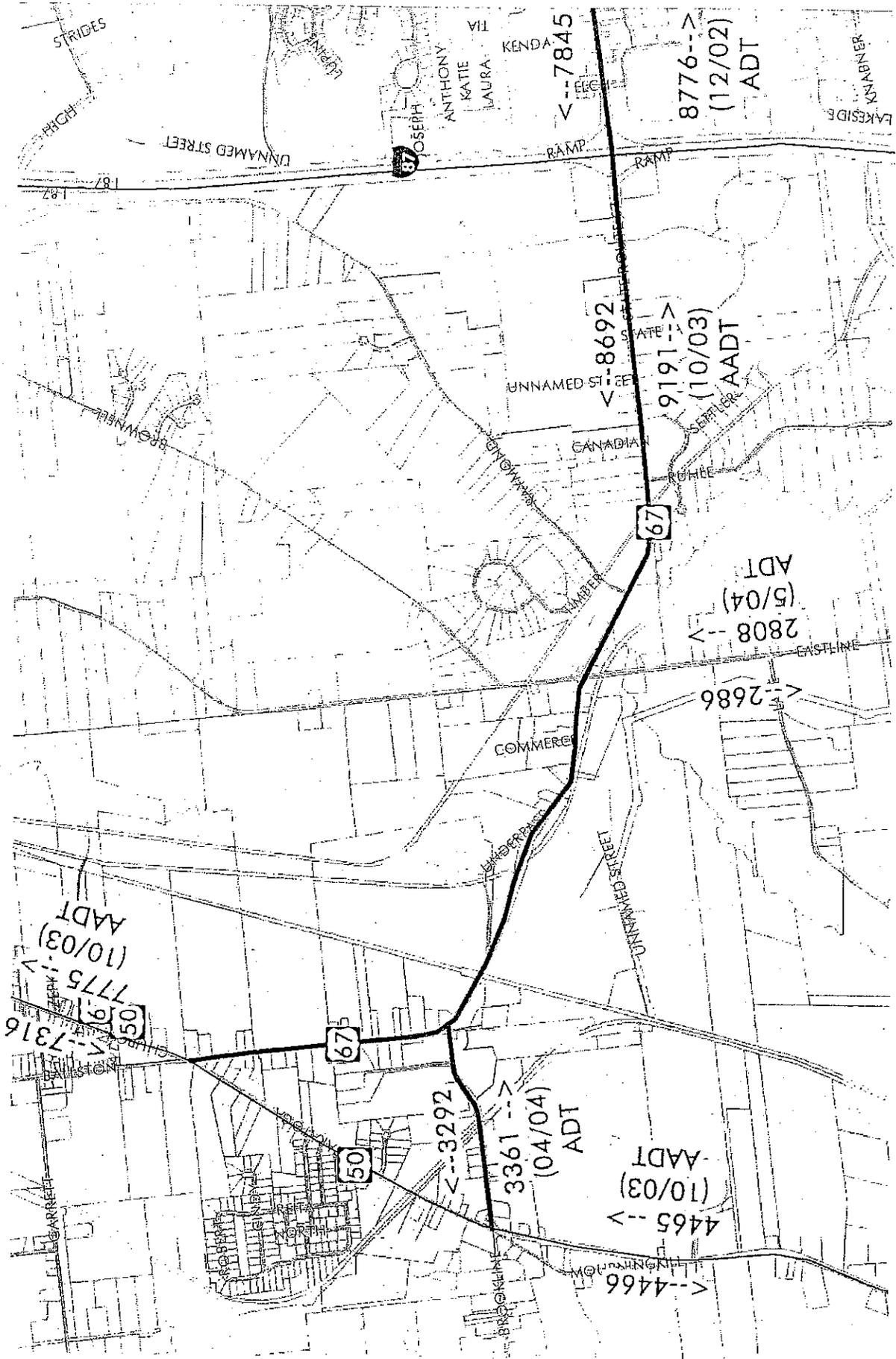


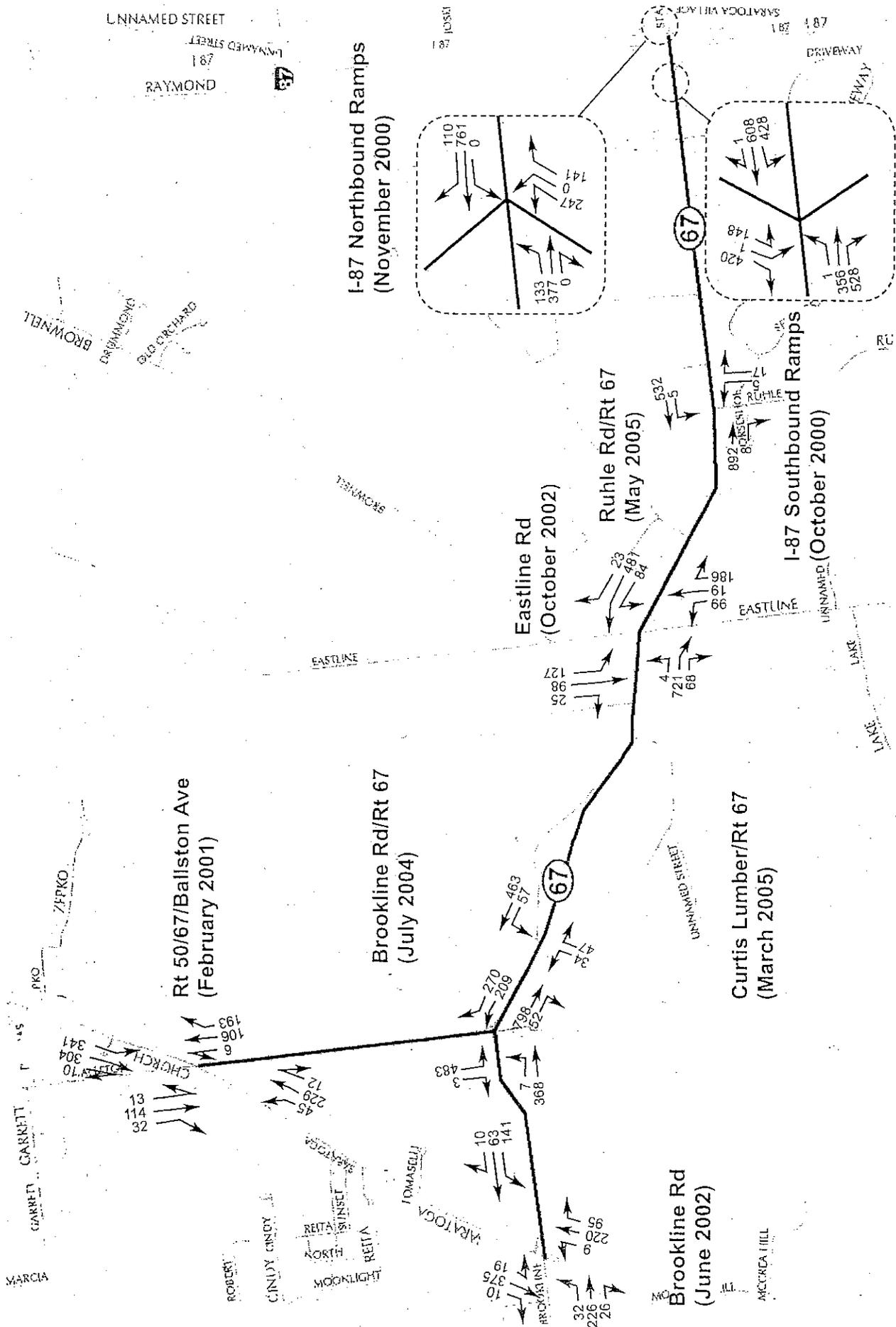
FIGURE 2.4 DAILY TRAFFIC VOLUMES

ROUTE 67 CORRIDOR STUDY

0.5 miles



BEJ Planning June 2005  
Source: NYSDOT



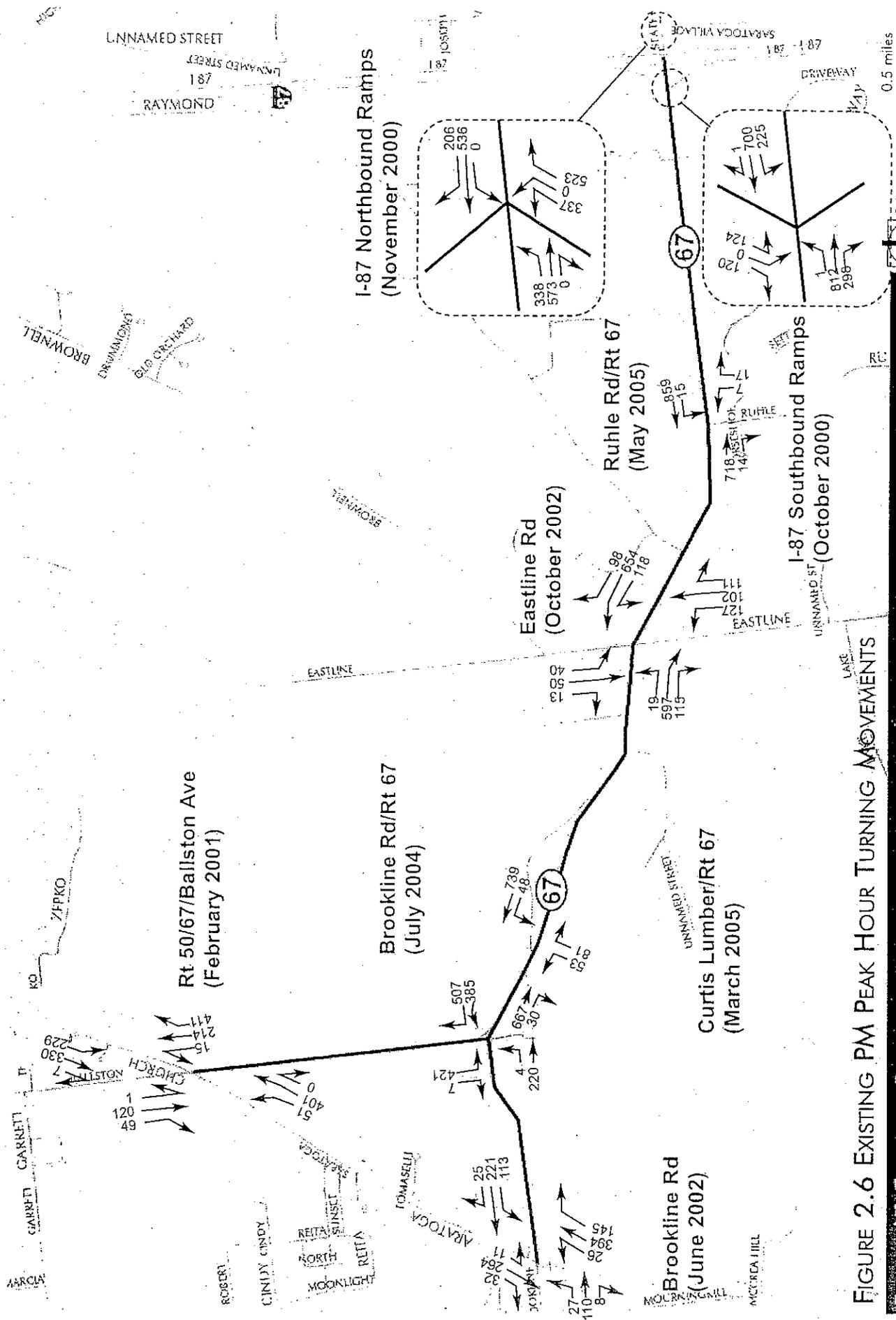
**FIGURE 2.5 EXISTING AM PEAK HOUR TURNING MOVEMENTS**

**ROUTE 67 CORRIDOR STUDY**

0.5 miles



BRJ Planning May 2005  
Source: CDTC, NYSDOT  
Creighton Manning



**FIGURE 2.6 EXISTING PM PEAK HOUR TURNING MOVEMENTS**

**ROUTE 67 CORRIDOR STUDY**

BRT Planning May 2005

Source: COTC, NYSDOT  
Creighton Manning

0.5 miles

AM Peak Hour	Intersection	PM Peak Hour	Intersection
7:00 to 8:00AM	V-Corners	4:15 to 5:15 PM	Curtis Lumber
	Eastline	4:30 to 5:30PM	67/Brookline
	I-87 SB Ramps		Eastline
	I-87 NB Ramps		I-87 SB Ramps
7:30 to 8:30 AM	Curtis Lumber		50/Brookline
	50/Brookline	4:45 to 5:45	I-87 NB Ramps
	67/Brookline		V-Corners

As can be seen in Figures 2.5 and 2.6 the traffic counts were taken between the years of 2000 and 2005. The numbers from prior years were increased by 2% per year to bring them up to 2004 levels. The 2% per year growth was based on the information published by NYSDOT in the *2003 Traffic Volume Report* which stated that traffic growth on Route 50 in the vicinity of V-Corners over the last several years was approximately 1.6%. To be on the conservative side, a background growth rate of 2% was applied to the traffic volumes at the study area intersections.<sup>2</sup> Turning movements taken in 2005 were not factored downwards.

#### 2.5. Existing Levels of Service and Delays

Based on the peak-hour traffic volumes and on geometric measurements made during the site evaluation, all intersections were analyzed using the Highway Capacity Manual method (Transportation Research Board, Special Report 209, Fourth Edition, 2000 Update). Traffic conditions are described in terms of level of service (LOS) with the levels ranging from LOS A, the best, to LOS F, the worst. Level of service C is generally considered the design level of service, while LOS D is generally considered as the acceptable limit during peak hours. Level of service E is typically at or near the capacity of the roadway or intersection and generally involves unacceptable delays.

Levels of service for signalized intersections are defined in terms of average control delay per vehicle. Delay is dependent on a number of variables including the quality of signal progression, cycle length, green ratio and the volume/capacity ratio for the lane group or approach in question. For signalized intersections, levels of service can be calculated and expressed for each movement or approach and for the total intersection as a weighted average of all movements. Specifically, level of service criteria are stated in terms of the average control delay per vehicle for the worst 15-minute period within the peak hour, as shown in Table 2.2. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

<sup>2</sup> Traffic Impact Study – Dunkin Donuts, Route 50, Town of Ballston, Saratoga County, NY; CME Project #04-138, January 24, 2005, pg. 2

Table 2.2 – Level of Service Criteria for Signalized Intersections<sup>3</sup>

Level of Service	Average Control Delay (seconds/vehicle)
A	10.0 or less
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	more than 80.0

Level of service analyses for an unsignalized intersection are based on average control delay, defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position. The total delay for a particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The level of service criteria for unsignalized intersections are shown in Table 2.3.

Table 2.3 – Level of Service Criteria for Unsignalized Intersections<sup>4</sup>

Level of Service	Average Control Delay (seconds/vehicle)
A	10.0 or less
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	more than 50.0

Using the capacity analysis methodology described above, peak-hour traffic volumes were analyzed to determine the existing levels of service for the six study intersections for the weekday morning and afternoon peak hours. Table 2.4 show the existing levels of service for each intersection approach as well as the overall level of delay.

As can be seen, nearly all of the intersections within the study area operate with good to acceptable levels of service at the peak hours analyzed, with the exception of two intersections during the PM peak period - Curtis Lumber approach to Route 67 intersection where the northbound left operates at a LOS F, with a delay of 163.6 seconds and the intersection of Eastline Road and Route 67 which is operating at LOS E and has a delay of 69.9 seconds.

<sup>3</sup> Highway Capacity Manual, TRB Special Report 209, Fourth Edition, 2000 Update.

<sup>4</sup> Highway Capacity Manual, TRB Special Report 209, Fourth Edition, 2000 Update.

Table 2.4 - Existing Levels of Service (LOS)

Intersection		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
Rt. 50 & Brookline Rd signalized	Overall	16.8	B	21.0	C
	Eastbound	21.1	C	16.3	B
	Westbound	31.1	C	40.0	B
	Northbound	9.5	A	14.8	B
	Southbound	10.6	B	9.6	A
V-Corners signalized	Overall	19.3	B	48.3	D
	Eastbound	20.3	C	19.2	B
	Westbound	25.2	C	101.1	F
	Northbound	19.3	C	24.7	C
	Southbound	16.0	B	18.3	B
Brookline & Rt. 67 unsignalized	Northbound Left	9.4	A	10.1	B
	Eastbound Left/Right	33.8	D	18.0	C
Curtis Lumber & Rt. 67 unsignalized	Westbound Left	10.9	B	9.9	A
	Northbound Left	67.6	F	157.9	F
	Northbound Right	19.5	C	17.7	C
Eastline & Rt. 67 signalized	Overall	30.2	C	69.9	E
	Eastbound	16.9	B	23.2	C
	Westbound	15.3	B	106.0	F
	Northbound Southbound	64.9	E	100.3	F
Ruhle Rd. & Rt. 67 unsignalized	Westbound Left	10.2	B	9.5	A
	Northbound Left/Right	23.1	C	26.0	D
I-87 SB Ramps & Rt. 67 signalized	Overall	52.6	D	34.5	C
	Eastbound	34.6	C	46.4	D
	Westbound	21.7	C	16.9	B
	Southbound	138.6	F	46.4	D
I-87 NB Ramps & Rt. 67 signalized	Overall	26.6	C	52.2	D
	Eastbound	14.4	B	25.7	C
	Westbound	33.4	C	32.8	C
	Northbound	27.3	C	97.0	F

### 2.6. Arterial Level of Service

To determine the arterial LOS for Route 67 a speed and delay timing exercise was performed by the CDTC on May 17<sup>th</sup>, 2005 (see the appendix for raw data). The travel times and speeds were analyzed using the Highway Capacity Manual Urban Streets Methodologies (HCM 2000, Chapter 15). LOS for streets are based upon both running speeds and control delays to determine average travel speed. This speed is then compared with the range of free-flow speeds (FFS) of various classes of streets to determine LOS. Route 67 between State Farm Road and within our study area did not fit neatly within any of the established classifications. From State Farm Road to the V-Corners Route 67 has only one signal. It does not conform to either

Class I or II, but it is not a rural two-lane highway either. Route 67 was determined to be on the lower end of Urban Street Class I, or the upper end of Urban Street Class II. For this reason, the LOS was computed for both classes as shown in Table 2.5 and the results are not as 'accurate' as they would be had the roadway fit within an established classification. If Route 67 is an Urban Street Class I, it generally operates at LOS C, while if it is considered Urban Street Class II, it operates at LOS B.

Table 2.5 - Existing Arterial Levels of Service (LOS)			
Based on Speed Delay Run - Route 67 from I-87 SB Ramps to Route 50			
AM Peak Hour			
	Average Travel Speed	LOS Urban Street Class I	LOS Urban Street Class II
Westbound	34.8	B	B
Eastbound	32.7	C	B
PM Peak Hour			
Westbound	32.3	C	B
Eastbound	32.2	C	B

Measurements were taken on May 17th & 18th 2005

Source: CDTC

To determine mid-block capacity, we relied on CDTC's research with regard to two-lane urban and suburban arterials<sup>5</sup>. These numbers assume that left turns are not managed. CDTC warns that these numbers should not be used as justification for widening a road, as other ways of managing traffic and land use must be considered.

Roadway Type	Approximate LOS D Capacity (each direction)	Approximate LOS E Capacity (each direction)
Surface Arterial - Single Lane (each direction)	1,000 vph	1,300 vph
Surface Arterial - Two Lane Undivided (each direction)	2,500 vph	3,120 vph <sup>6</sup>

Based on studies performed by CDTC, LOS D is reached for a single lane surface arterial at the threshold of 1,000 vph. As all of the listed volumes in Table 2.6 are lower than 1,000 vph, all existing volumes within the study area are LOS C or better.

Table 2.6 - Existing Arterial Volumes						
			AM		PM	
Roadway	Between		Eastbound	Westbound	Eastbound	Westbound
Brookline	Route 67	Route 50	358	213	245	376
Route 67	V-Corners	Brookline Rd	477	291	389	576
Route 67	Brookline	Eastline	819	551	740	791
Route 67	Eastline Rd	I-87	967	563	740	867

<sup>5</sup> CDTC - Procedures for Public/Private Financing in the Capital District, September 12, 1989

<sup>6</sup> CDTC - Urban Arterial, Collector, Expressway, and Local Road Mid-Block Capacity Thresholds, June 10, 2003

### 3. Safety

An accident analysis was conducted along the Route 67 Corridor to determine the location and severity of accidents along the corridor. Accident information was obtained by Saratoga County Planning from NYSDOT for the years 1999 to 2001. During the time period there were a total of 184 accidents including one fatality and 57 injury accidents which resulted in a total of 88 injuries. There was one accident involving a pedestrian and one involving a cyclist during the time period, both of which occurred north of the intersection of Brookline Road with Route 67. The accidents were plotted in Figure 3.1, which shows intersection accidents and their severity and Figure 3.2 which displays non-intersection accidents. The difference between the total number of accidents and total of fatality, injury and PDO crashes is the number of non-reportable accidents. As can be seen, the location with the highest accidents and also the greatest number of injury accidents is V-Corners, where 17 accidents occurred in a three year period, of which 7 resulted in injuries. The other high accident intersections are Route I-87 / 67 intersection where 16 accidents occurred, two of which resulted in injuries and the intersection of Route 67 / Eastline Road, where 14 accidents occurred, of which 5 resulted in injuries.

Table 3.1 - Accidents Along Route 67 Between V-Corners and I-87 from 1999 to 2001

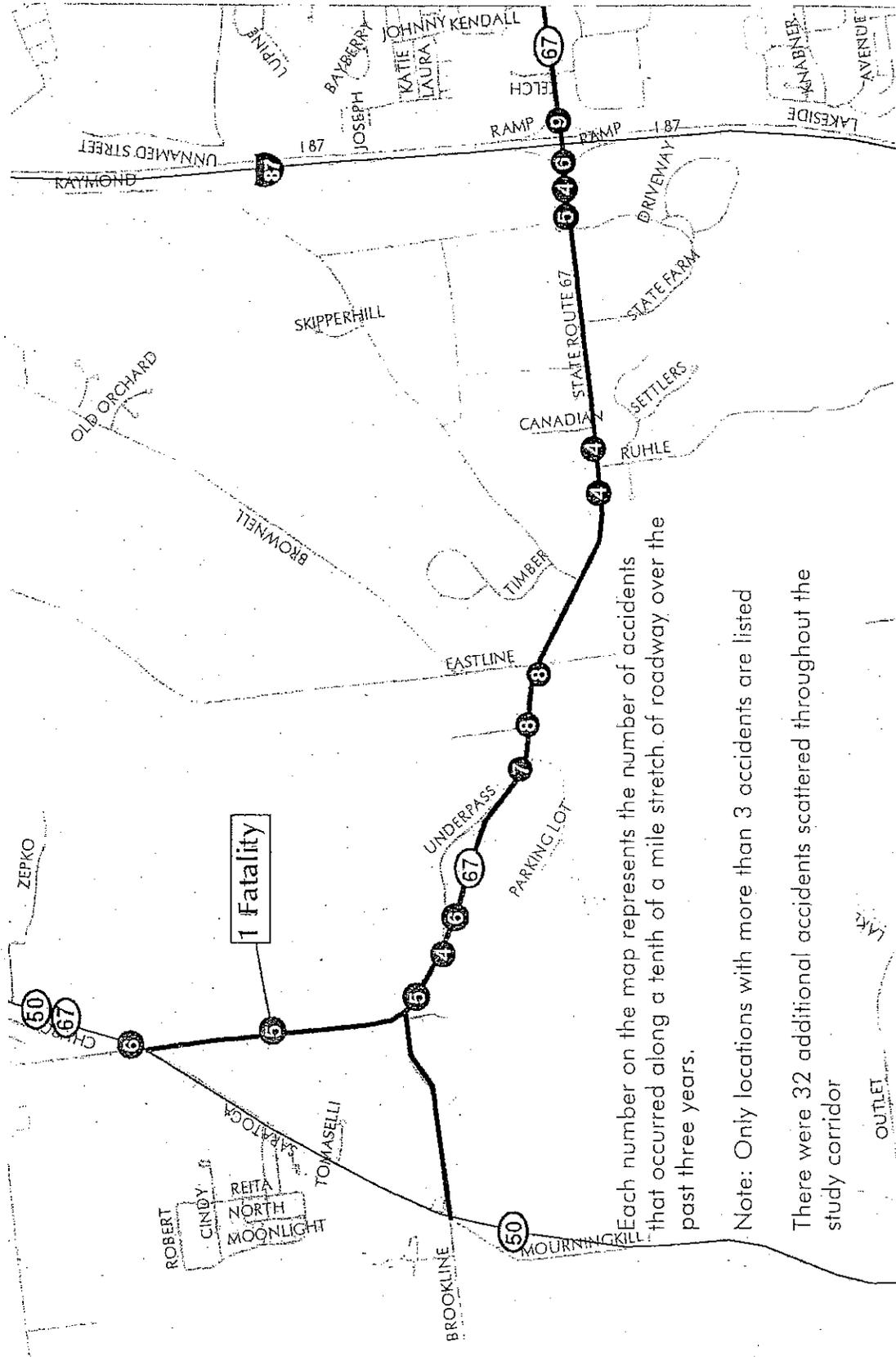
	Intersection Accidents	Non-Intersection Accidents	Total Accidents
Total Accidents	71	113	184
Total Fatalities	0	1	1
Injury Accidents	19	38	57
Total Injuries	26	62	88
Property Damage Only	23	41	64
Non-Reportable	29	33	62

Regarding non-intersection accidents, the greatest concentration occurred along Route 67 between the intersections with Brookline Road and Eastline Road. This 1.2 mile stretch (including the intersections) witnessed a total of 74<sup>7</sup> accidents during the three year period, of which 17 accidents resulted in an injury. This stretch of roadway averaged 24 accidents per year.

The accident rate for the entire corridor is 5.69 ACC/MVM (accidents per million vehicle miles), which is 156% more than the NY statewide average of 3.66 ACC/MVM for urban, undivided two lane State Highways. As seen in Table 3.2, breaking down the route into three segments results in the highlighting of the 1.2 mile stretch between Brookline and Eastline Roads where the accident rate is 6.30 ACC/MVM, which is 172% of the statewide average.

<sup>7</sup> The locations with fewer than four non-intersection accidents are not listed on Figure 3.2





Each number on the map represents the number of accidents that occurred along a tenth of a mile stretch of roadway over the past three years.

Note: Only locations with more than 3 accidents are listed

There were 32 additional accidents scattered throughout the study corridor

**FIGURE 3.2 NON-INTERSECTION ACCIDENTS OVER A THREE YEAR PERIOD (1999-2001)**

**ROUTE 67 CORRIDOR STUDY**

0.5 miles



Segment	V-Corners to Brookline Road	Brookline Road to Eastline Road	Eastline Road to I-87
Length of Segment	0.7	1.2	1.4
# of Crashes	36	74	74
Rate (ACC/MVM)	5.25	6.30	5.40
Increase over State Average	144%	172%	148%

#### 4. 2010 Traffic Conditions

##### 4.1. 2010 No-Build Traffic Conditions

To calculate the future traffic conditions for the corridor a background growth rate of 1.5% per year was applied to the base 2004 figures. This figure was based on CDTC's traffic forecasts, which predict an increase between 1.2% and 2% per year over the next several years. Although the CDTC recently lowered their estimate for future growth, the 1.5% background growth rate will be used to be conservative. The 1.5% growth per year leads to the "no build scenario". This means that if there is no new development along the Route 67 Corridor, the traffic will still increase by 1.5% per year due to vehicles traveling through the corridor. Due to the fact that the background growth rate is conservative, the 2010 traffic forecasts could be considered appropriate for 2015 or even 2020 estimates. The projected LOS for the 2010 no-build scenario are shown in Table 4.1. For the intersections of Route 67 and the I-87 ramps the roundabouts are assumed to be in place.

Table 4.1 - 2010 No Build LOS

Intersection		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
Rt. 50 & Brookline Rd	Overall	20.4	C	26.4	C
	Eastbound	22.9	C	16.5	B
	Westbound	50.0	D	56.3	E
	Northbound	9.8	A	16.6	B
	Southbound	11.3	B	9.9	A
V-Corners	Overall	20.9	C	60.4	E
	Eastbound	20.6	C	19.4	B
	Westbound	27.3	C	131.3	F
	Northbound	19.7	B	25.9	C
	Southbound	18.2	B	27.1	C
Brookline & Rt. 67	Northbound Left	9.8	A	10.7	B
	Eastbound Left/Right	67.7	F	22.0	C

Table 4.1 - 2010 No Build LOS (Continued)

Intersection		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
Curtis Lumber & Rt. 67	Westbound Left	11.5	B	10.3	B
	Northbound Left	109.9	F	oversaturated	F
	Northbound Right	22.1	C	20.0	C
Eastline & Rt. 67	Overall*	41.7	D	50.0	D
	Eastbound	20.9	C	23.3	C
	Westbound	13.2	B	40.4	D
	Northbound	98.4	F	129.1	F
	Southbound	91.1	F	22.3	C
Ruhle Rd. & Rt. 67	Westbound Left	10.7	B	9.8	A
	Northbound Left/Right	26.3	D	31.8	D
I-87 SB Ramps & Rt. 67	Overall	2.6	A	2.7	A
	Eastbound	2.4	A	3.0	A
	Westbound	3.0	A	2.4	A
	Southbound	2.4	A	2.4	A
I-87 NB Ramps & Rt. 67	Overall	2.4	A	2.6	A
	Eastbound	1.8	A	2.4	A
	Westbound	3.0	A	3.0	A
	Northbound	1.8	A	3.0	A

\*Assumes STAR project is implemented

Table 4.2 shows the arterial volumes for the no build scenario. Based on CDTC's threshold criteria LOS D is attained only for Route 67 eastbound between Brookline and Eastline Roads during the AM peak hour. All other roadway sections operate at LOS C or better.

Roadway	Between		AM		PM	
			Eastbound	Westbound	Eastbound	Westbound
Brookline	Route 67	Route 50	385	229	264	405
Route 67	V-Corners	Brookline	513	313	419	620
Route 67	Brookline	Eastline	882	594	797	852
Route 67	Eastline	I-87	1,042*	606	797	933

\*Operates at LOS D (all others operate at LOS C or better)

#### 4.2. Future (2010) Build Conditions

BFJ collected information for all development projects currently in the planning stages in the towns of Ballston and Malta (See Table 4.3). Overall 23 projects were identified ranging in size from 19 homes to the development of a technology park which is expected to add millions of square feet of manufacturing and office space to the area.

Table 4.3 - Traffic Planning Assumptions -Approved and Proposed Developments Near the Route 67 Corridor

Project	Use	Size	Source	Gross Traffic Generated		New Traffic Generated		% Double Counting Adjustment	% Non-Pass By <sup>5</sup>	Trips AM		Trips PM	
				Enter	Exit	Enter	Exit			Enter	Exit	Enter	Exit
<b>Ballston</b>													
1	Anderson Et. Al Subdivision		No project proposed, Only lays out an access road										
			Times Union Article 3/16/05 - pg B4, ITE Rate (813)										
2	Wal-Mart <sup>1</sup>	203,000 SF	Discount Superstore	191	183	386	400	100%	75%	143	137	290	300
			Feasibility Study ITE Trip Gen Handbook (813)										
3	Adirondack Trust Co <sup>2</sup>	1,800 SF	Bank							10	7	34	34
			11/8/01 Traffic Feasibility Study Addendum for Trusco Bank - non-pass by figures										
4	Toscana Adult Community	20 units	Mobile Home Park	4	14	8	5	85%	100%	3	12	7	4
			ITE Equation (240)										
5	Yarlin Ozbay	6 pumps	Gas Station	30	30	40	40	100%	45%	14	14	18	18
			ITE Rate (945) / ITE Trip Generation Handbook (945)										
6	Rolling Brook Meadows	19 units	SF Houses	4	10	12	7	85%	100%	3	9	10	6
			3/1/2004 Rolling Brook Meadows Traffic Impact Study w/Distribution Chart										
7	Brookline Condo Development	48 units	Townhouses	5	24	22	11	85%	100%	4	20	19	9
			ITE Equation (230)										
8	Saratoga Chapel "Weed"		Subdivision										
			No project proposed										
9	East Line Subdivision	123 units	SF Houses	24	72	81	48	85%	100%	20	61	69	41
			ITE Equation (210)										
10	Beacon Hill	86 units	SF Houses	17	52	59	35	85%	100%	14	44	50	30
			ITE Equation (210)										
		20 units	Townhouses	2	12	11	5	85%	100%	2	10	9	4
			ITE Equation (230)										
			Total	19	64	70	40			16	54	60	34
11	Dunkin Donuts <sup>3</sup>	2,244 SF	Impact Study- Contains Distribution Chart	116	102	38	43	Approx 50%		62	48	18	23
			1/24/05 Dunkin Donuts Traffic Impact Study- Contains Distribution Chart										

Table 4.3 - Traffic Planning Assumptions -Approved and Proposed Developments Near the Route 67 Corridor

Project	Use	Size	Source	Gross Traffic Generated		% Non-Pass By <sup>5</sup>	% Double Counting Adjustment	Net Traffic Generated	
				Trips AM	Trips PM			Trips AM	Trips PM
12 SSP / Tech Park Phase IV <sup>4</sup>	Industrial Park	325,000 SF	1998 Corporate Tech Park Traffic Impact Study w/Trip Distribution Chart	248	239	100%	90%	223	215
	Warehousing	16,000 SF	ITE Equation (150)	19	12	100%	90%	17	11
	Office Building	8,000 SF	ITE Equation (715)	32	40	100%	90%	29	36
	Total	24,000 SF		51	52			46	47
13 Aztech Tech. (SSP)	Office	20,124 SF	ITE Equation (715)	50	55	100%	90%	45	50
	Light Industry	40,076 SF	ITE Rates (110)	32	34	100%	90%	29	31
	Total	60,000 SF		82	89			74	80
14 SKS Bottling & Warehouse (SSP)	Shopping Center	279,000 SF	ITE Equation (820) The Daily Gazette Pg A1, Feb, 05 ITE Trip Generation Handbook (820)	177	641	75%	100%	133	481
	Total			177	591			85	443
15 Widewaters	Shopping Center			177	591	75%	100%	133	481

Table 4.3 - Traffic Planning Assumptions -Approved and Proposed Developments Near the Route 67 Corridor

Project	Use	Size	Source	Gross Traffic Generated				% Non-Pass By <sup>5</sup>	% Double Counting Adjustment	Net Traffic Generated			
				Trips AM	Trips PM	Enter	Exit			Trips AM	Trips PM	Enter	Exit
<b>Malta</b>													
16	Luther Forest Technology Campus (Phase I)		Luther Forest Technology Campus 11/4/2002 Draft Traffic Impact Study	1000	200	250	1000	100%	90%	900	180	225	900
17	Luther Forest Condos	140 units	ITE Equation (230)	11	56	53	26	100%	85%	9	48	45	22
	SF Houses	138 units	ITE Equation (210)	27	80	90	53	100%	85%	23	68	77	45
	Townhouses	32 units	ITE Equation (230)	4	17	16	8	100%	85%	3	14	14	7
18	Travers Meadows		Total	31	97	106	61			26	82	90	52
19	Northway Fellowship		Church 700 & 1500 seat rooms										
20	Keich Apartments	136 Units	ITE Equation (220)	14	56	60	32	100%	85%	12	48	51	27
21	Malta Farm Residential	46 Units	ITE Equation (230)	5	23	21	10	100%	85%	4	20	18	9
	SF Houses	56 Units	ITE Equation (210)	12	36	40	24	100%	85%	10	31	34	20
	Apartments	238 Units	ITE Equation (220)	24	96	97	52	100%	85%	20	82	82	44
	Shopping Center	60,000 SF	ITE Equation (820) Trip Gen Handbook equation (820)	70	45	214	232	75%	100%	53	34	161	174
	Office	55,000 SF	ITE Equation (710)	95	13	23	112	100%	90%	86	12	21	101
22	Park Place		Total	201	190	374	420			169	158	298	339
23	Blessed John Cemetery	100 Acres	ITE Rate (566)	12	5	28	56			12	5	28	56

Notes

- 1- SF Houses = Single Family Housing
- 1- 7/3/01 Rossi's Traffic Feasibility Study, Potential Commercial Development predicted: 31 AM / 58 PM Peak Trips
- 2- Figures from Trusco Bank and are approximate for Adirondack Bank
- 3- Trip Generation/Pass-By Trip Estimate from 1/25/04 Dunkin Donuts Traffic Impact Study - CME#04-138
- 4- Although the volumes for the SSP may be slightly lower, we used these figures to be conservative
- 5- Pass-by trip estimates based on Institute of Transportation Engineers Trip Generation Handbook, 7th Edition, where available

To estimate the number of trips generated by each project we relied on the Institute of Traffic Engineers (ITE) Trip Generation 7<sup>th</sup> Edition or we used the figures provided by the project's Traffic Impact Study when such a study was available. The column titled source in Table 4.3 describes the source that was used. The number under the field listed as "Gross Traffic Generated" is the base number which is provided by using these sources.

In an effort to refine the trip generation estimates two additional columns were created which reduce the "Gross Traffic Generated" figure. The first column is entitled, "% Non-Pass By", which is used to eliminate instances where the vehicle is already on the road. The best example is how a gas station functions. As seen in row #5, the Gross Traffic figure for the Yarlin Ozbay gas station project estimates that 30 vehicles will enter the gas station during the AM Peak period. A certain percentage of vehicles, the pass-by traffic, will be on the road anyway, even if this project is not built. Using the estimates of Pass-by trips provided by the ITE Trip Generation Handbook, 7<sup>th</sup> Edition, we calculate that 55% of the trips are pass-by trips. The remaining vehicles, 45% or 14 vehicles are counted as new trips generated by the presence of the gas station.

The next column titled "% Double Counting Adjustment" is used to prevent the counting of the same vehicle twice. For example, row 9 lists the East Line Subdivision, which is expected to generate 48 trips exiting the housing development during the PM peak hour. As a percentage of these vehicles will shop or work at the Wal-Mart (row #2), we lowered the gross figures by 15% for all residential projects and 10% for office projects to eliminate the number of trips that would be double counted. For the East Line Subdivision, this resulted in only 41 PM peak hour trips as the estimate.

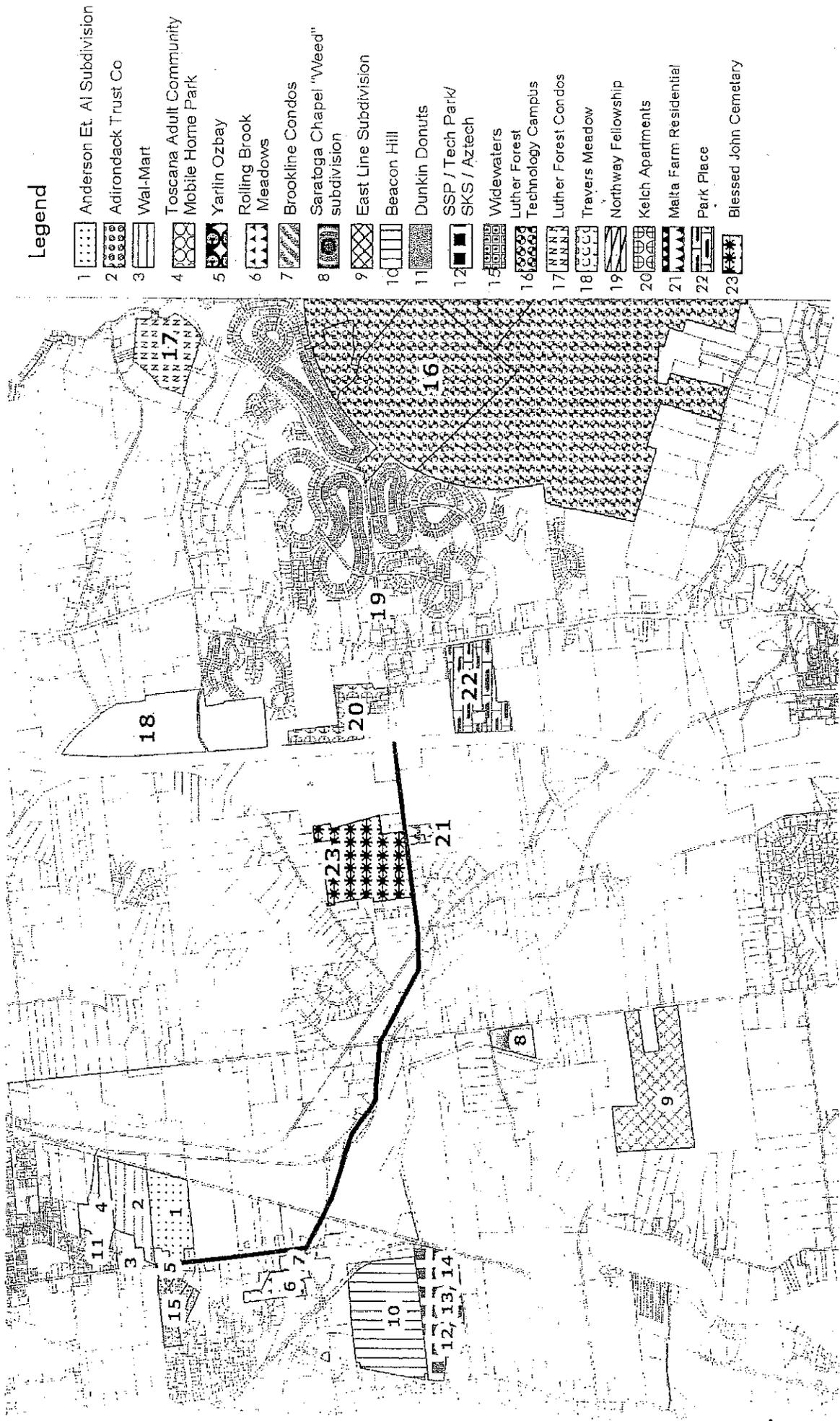
To determine which intersections these trips would impact, all the projects were geocoded as seen in Figure 4.1. It should be noted that there are nearly double the amount of projects in the Town of Ballston (14) as compared with the Town of Malta (9). A trip distribution chart, which distributes the traffic among the most logical routes for egress and ingress to or from the development site, was then developed for each project. When available the trip distribution percentages found in the projects' traffic impact study was used. These trips and their distribution percentages were then entered into a spreadsheet to determine the impact on each intersection in the study area. Detailed tables of distribution are available in the Appendix.

The traffic data for each intersection showing 2004 peak hour traffic volumes, 2010 peak hour no build traffic volumes and 2010 peak hour build traffic volumes are shown in Table 4.4. The first column lists the name of the project and the corresponding project number which can be found on Figure 4.1. It should be noted that projects #1, Anderson Et. Al Subdivision is not included in Table 4.4 since the proposal was only to build a new road on the property nor is #19 Northway Fellowship included, as all trips are expected to occur during off-peak periods. The second column displays the total amount of vehicular trips the project is expected to generate during the AM and PM peak hours. The remaining columns display the impact the project will have on each intersection. For example, project #22 Park Place 169 vehicles are expected to enter the project site during the AM peak hour. Of those trips, only two vehicles are expect to travel through the intersection of Route 50 and Brookline, while 101 vehicles are predicted to exit I-87 northbound at Route 67 on their way to Park Place in the AM peak hour.

Table 4.4 - Traffic Forecasts for Study Intersections

Development	Net Traffic Generation		Rt. 50 & Brookline		V-Corners		Bookline & Rt. 67		Curtis Lnbr & Rt. 67		Eastline & Rt. 67		Ruhle Rd. & Rt. 67		I-87 SB & Rt. 67		I-87 NB & Rt. 67		
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
	2004 Volume		1227	1377	1405	1898	1340	1544	1451	1618	1935	2045	1459	1630	2492	2281	1770	2512	
2010 Volume (1.5%)*		1341	1506	1536	2075	1465	1688	1587	1769	2115	2236	1595	1782	2724	2494	1935	2747		
2 Wal-Mart	In	143	290	14	29	79	159	43	87	43	87	43	87	36	72	36	72	21	43
	Out	137	300	14	30	75	165	41	90	41	90	41	90	34	75	34	75	21	45
3 Adirondack Trust Co	In	10	34	1	3	6	19	3	10	3	10	3	9	3	9	2	5		
	Out	7	34	1	3	4	19	2	10	2	10	2	9	2	9	1	5		
4 Toscana Mobile Home Park	In	3	7	1	2	3	6	2	4	2	4	2	4	2	4	1	3		
	Out	12	4	4	1	11	4	7	3	7	3	7	3	7	3	2	1		
5 Yarlin Ozboy - Gas Station	In	14	18	4	5	9	13	4	5	4	5	4	5	3	5	3	5	2	3
	Out	14	18	4	5	9	13	4	5	4	5	4	5	3	5	3	5	2	3
6 Rolling Brook Meadows	In	3	10	1	4	0	1	2	6	2	6	2	6	2	6	2	6	1	4
	Out	9	6	3	2	1	1	5	4	5	4	5	4	5	4	5	4	2	1
7 Brookline Condo Develop	In	4	19	0	2	0	0	0	0	3	11	0	0	3	11	0	0	0	0
	Out	20	9	0	0	0	0	0	0	12	6	6	3	12	6	0	0	2	1
9 East Line Subdivision	In	20	69	0	1	2	6	2	7	7	7	7	24	7	7	4	14	2	7
	Out	61	41	1	1	5	3	6	4	6	4	21	14	6	4	12	8	12	8
10 Beacon Hill	In	16	60	11	42	2	6	10	36	10	36	10	36	10	36	10	36	6	24
	Out	54	34	38	24	5	3	33	20	33	20	33	20	33	20	33	20	11	7
11 Dunkin Donuts	In	62	18	6	2	34	10	19	5	19	5	19	5	16	5	16	5	9	3
	Out	48	23	5	2	26	13	14	7	14	7	14	7	12	6	12	6	7	3
12 SSP/Tech Park Phase IV	In	223	58	167	43	78	20	67	17	67	17	67	17	67	17	67	17	45	12
	Out	50	215	37	161	17	75	15	65	15	65	15	65	15	65	15	65	7	32
13 Aztech Tech	In	46	10	34	7	16	3	14	3	14	3	13	3	13	3	13	3	8	2
	Out	7	47	5	35	3	16	2	14	2	14	2	13	2	13	2	13	1	7
14 SKS Bottling & Office/Warehouse	In	74	14	55	10	26	5	22	4	22	4	22	4	22	4	22	4	15	3
	Out	9	80	7	60	3	28	3	24	3	24	3	24	3	24	3	24	1	12
15 Widewaters	In	133	443	40	133	93	310	40	133	40	133	40	133	33	111	33	111	20	66
	Out	85	481	25	144	59	337	25	144	25	144	25	144	21	120	21	120	13	72
16 Luther Forest (Phase I)	In	900	225	9	2	72	18	81	20	20	20	81	20	20	20	261	65	261	65
	Out	180	900	2	9	14	72	16	81	16	81	16	81	16	81	16	81	52	261
17 Luther Forest Condos	In	9	45	0	0	1	4	1	4	0	0	1	4	4	4	3	13	3	13
	Out	48	22	0	0	4	2	4	2	4	4	4	2	4	2	4	2	14	6
18 Travers Meadows	In	26	90	0	1	2	8	3	9	0	0	3	9	9	9	9	32	16	54
	Out	82	52	1	1	7	5	8	5	9	9	8	5	8	5	29	18	49	31
20 Kelch Apts	In	12	51	0	1	1	5	1	5	0	0	1	5	5	5	4	18	7	31
	Out	48	27	0	0	4	2	5	3	5	5	5	3	5	3	17	10	29	16
21 Malta Farm Residential	In	4	18	0	1	1	3	1	4	0	0	1	4	4	4	3	14	2	8
	Out	20	9	1	0	3	1	4	2	4	4	4	2	4	2	16	7	9	4
22 Park Place	In	169	298	2	3	15	27	17	30	0	0	17	30	30	30	59	104	101	179
	Out	158	339	2	3	14	31	16	34	30	30	16	34	16	34	55	119	95	204
23 Blessed John Cemetery	In	12	28	1	1	2	4	2	6	0	0	2	6	6	6	10	22	5	13
	Out	5	56	0	3	1	8	1	11	6	6	1	11	1	11	4	45	2	25
2010 Build Volume		1850	2296	2247	3501	2025	2628	2123	2709	2694	3202	2098	2638	3589	3695	2800	4036		
% Increase over 2010 No Build				38%	52%	46%	69%	38%	56%	34%	53%	27%	43%	31%	48%	32%	48%	45%	47%

\*CDTC Estimates 0.5% background growth - 1.5% is a conservative estimate



**Legend**

- 1 Anderson Et. Al Subdivision
- 2 Adirondack Trust Co
- 3 Wal-Mart
- 4 Toscana Adult Community Mobile Home Park
- 5 Yarlin Ozbay
- 6 Rolling Brook Meadows
- 7 Brookline Condos
- 8 Saratoga Chapel "Weed" subdivision
- 9 East Line Subdivision
- 10 Beacon Hill
- 11 Dunkin Donuts
- 12 SSP / Tech Park/ SKS / Aztech
- 13 Widewaters
- 14 Luther Forest Technology Campus
- 15 Luther Forest Condos
- 16 Travers Meadow
- 17 Northway Fellowship
- 18 Kelch Apartments
- 19 Malta Farm Residential
- 20 Park Place
- 21 Blessed John Cemetary

0.5 miles



BFJ Planning May 2005  
 Source: Town of Ballston  
 Saratoga County

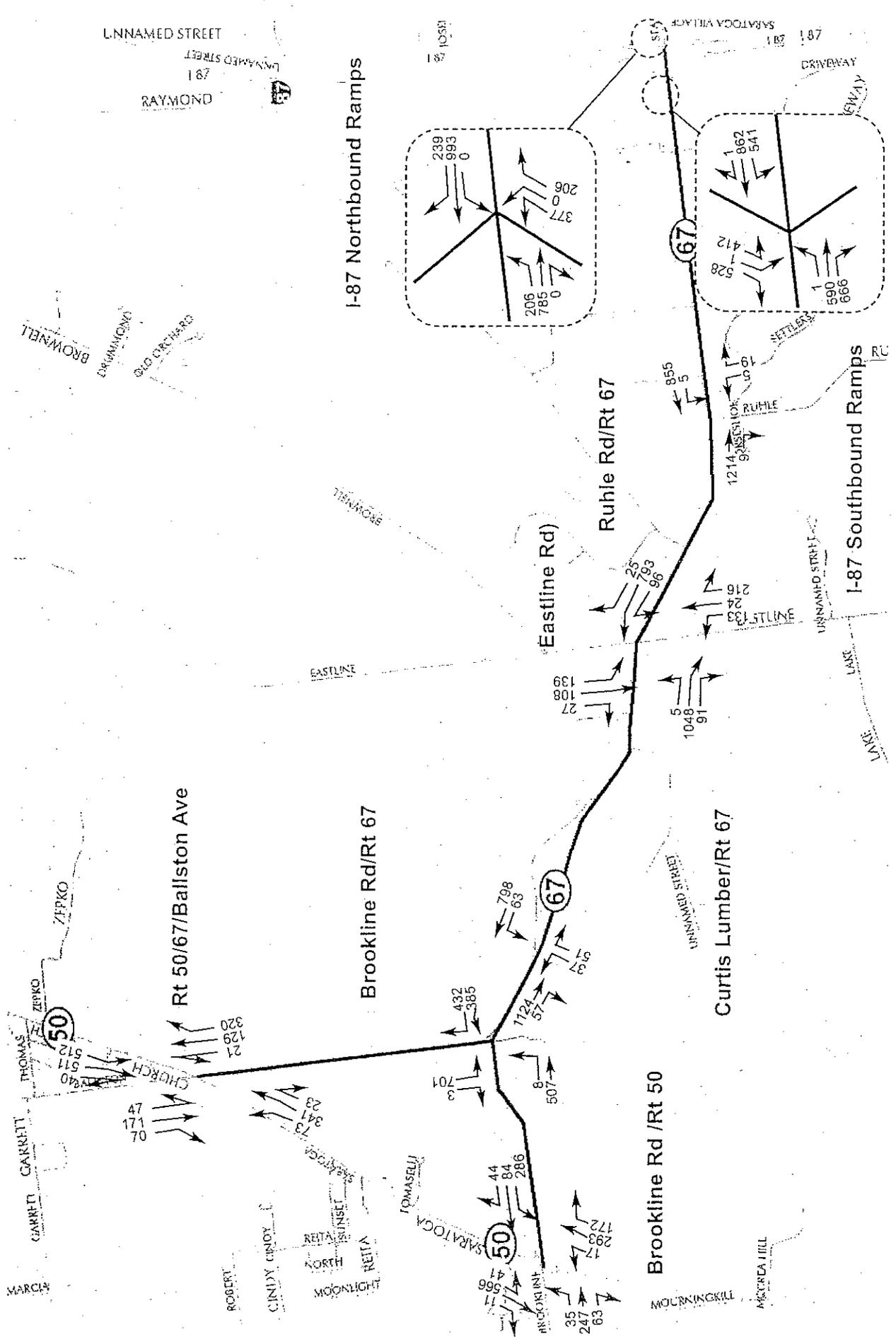
**FIGURE 4.1 DEVELOPMENT PROJECTS**

**ROUTE 67 CORRIDOR STUDY**

The second to last row of Table 4.4 displays the predicted 2010 build volume, which is a sum of the background traffic growth combined and all the traffic of all the specific development projects. The last row in Table 4.4 shows the expected increase over the 2010 no build scenario, which shows the increase in projected trips generated from all the development projects. The greatest increase is expected to occur at V-Corners during the PM peak period, where the volume of vehicles is expected to increase by 69% as the result of all development projects. Table 4.4 also shows that the most significant contributors to this increase are the Widewaters project (#15) with more than 300 vehicles in each direction and the Wal-Mart project (#2) with more than 150 vehicles in each direction.

These volumes were used to develop Figures 4.2 and 4.3 which display the AM and PM peak hour build volumes, respectively. An HCS analysis was performed to determine the LOS for each intersection based on the traffic volumes from Table 4.4. The results are displayed in the 2010 Build LOS in Table 4.5.

The large increase in traffic volume is expected to cause many intersections to fail given the projected traffic volumes without any improvement to the roadway configuration. At two unsignalized intersections (Brookline/Route 67 & Curtis Lumber/Route 67), our analysis indicates it will be extremely difficult to make a left turn out of the side street during AM and PM peak hours.



**FIGURE 4.2 BUILD 2010 AM PEAK HOUR TURNING MOVEMENTS**

**ROUTE 67 CORRIDOR STUDY**

0.5 miles



BRJ Planning May 2005  
Source: CDTC, NYSDOT  
Creighton Manning

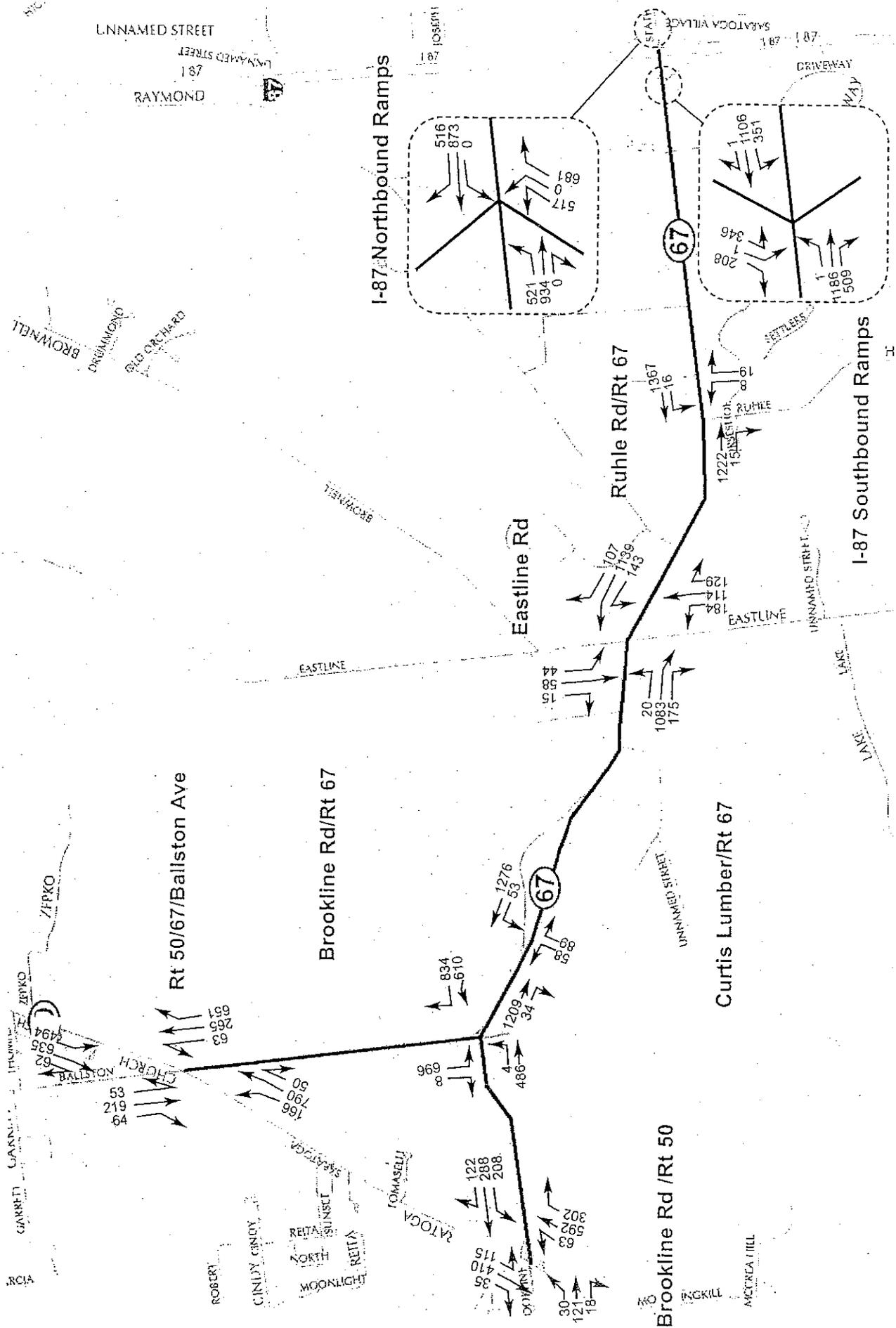


FIGURE 4.3 BUILD 2010 PM PEAK HOUR TURNING MOVEMENTS

**ROUTE 67 CORRIDOR STUDY**

0.5 miles  
 BRTJ Planning May 2005  
 Source: CDTC, NYSDOT  
 Creighton Planning

Table 4.5 - 2010 Build Levels of Service (LOS)

Intersection		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
Rt. 50 & Brookline Rd	Overall	100.5	F	181.1	F
	Eastbound	27.8	C	16.9	B
	Westbound	398.5	F	317.2	F
	Northbound	11.5	B	153.4	F
	Southbound	18.1	B	106.9	F
V-Corners	Overall	53.0	D	244.2	F
	Eastbound	40.9	D	113.5	F
	Westbound	67.4	E	409.3	F
	Northbound	23.1	C	255.9	F
	Southbound	61.6	E	147.3	F
Brookline & Rt. 67	Northbound Left	13.4	B	20.4	C
	Eastbound Left/Right	oversaturated	F	oversaturated	F
Curtis Lumber & Rt. 67	Westbound Left	13.8	B	14.2	C
	Northbound Left	oversaturated	F	oversaturated	F
	Northbound Right	37.7	D	66.8	F
Eastline & Rt. 67	Overall*	79.8	E	191.5	F
	Eastbound	89.6	F	226.2	F
	Westbound	26.7	C	158.9	F
	Northbound	156.2	F	224.8	F
	Southbound	96.8	F	22.3	C
Ruhle Rd. & Rt. 67	Westbound Left	12.2	B	12.5	B
	Northbound Left/Right	47.1	E	165	F
I-87 SB Ramps & Rt. 67	Overall	3.6	A	4.6	C
	Eastbound	3.6	A	6.0	A
	Westbound	3.6	A	3.6	A
	Southbound	4.2	A	3.6	A
I-87 NB Ramps & Rt. 67	Overall	3.1	A	4.5	A
	Eastbound	2.4	A	3.6	A
	Westbound	3.6	A	5.4	A
	Northbound	2.4	A	4.8	A

\*Assumes STAR project is implemented

Table 4.6 – 2010 Build Arterial Volumes & LOS

Roadway	Between		AM				PM			
			Eastbound		Westbound		Eastbound		Westbound	
Brookline	Route 67	Route 50	488	C+	401	C+	514	C+	618	C+
Route 67	V-Corners	Brookline	705	C+	455	C+	734	C+	909	C+
Route 67	Brookline	Eastline	1,160	D	907	C+	1,288	D	1,334	E
Route 67	Eastline	I-87	1,313	E	1,247	D	1,247	D	1,382	E

As seen in Table 4.6, under the build scenario, the arterial volumes are expected to exceed the LOS D and E thresholds for Route 67 East of Brookline Road. Even though the future "build" volumes exceed the LOS E limits the arterial traffic condition does not necessarily require any roadway widening. For instance, within the Capital District, a section of New Karner Road in Colonie carries 1780 vehicles during the PM peak hour with an average speed of 24.4 MPH which corresponds to LOS D for a Class I arterial.<sup>8</sup>

#### 4.3. Future Traffic Conditions without Major Retail Centers

In an effort to both analyze the impact of the major retailer centers which are proposed for the Route 67 Corridor near V-Corners and calculate the future traffic conditions if these developments are not completed, the figures were recalculated removing both the Wal-Mart (#2) and the Widewaters project (#15). These two projects combined generate almost 1,500 trips during the PM peak hour. As shown in Table 4.7, the last row, '% Increase over 2010 No Build' is reduced by between 4 and 47 percentage points, with the greatest reduction occurring at V-Corners. The volumes were used to develop Figures 4.4 and 4.5 which display the AM and PM peak hour build volumes, respectively for the scenario without the major retailing centers. An HCS analysis was performed to determine the LOS for each intersection based on the traffic volumes in the 2010 Build LOS without the major retail centers (Table 4.8). As can be seen all intersections will operate at LOS F during the PM peak period, and still require mitigation measures. The presence of the additional 1,500 trips exacerbates the problem and increases delays substantially.

<sup>8</sup> Pinebush Transportation Study Update, CDTC, September 2004

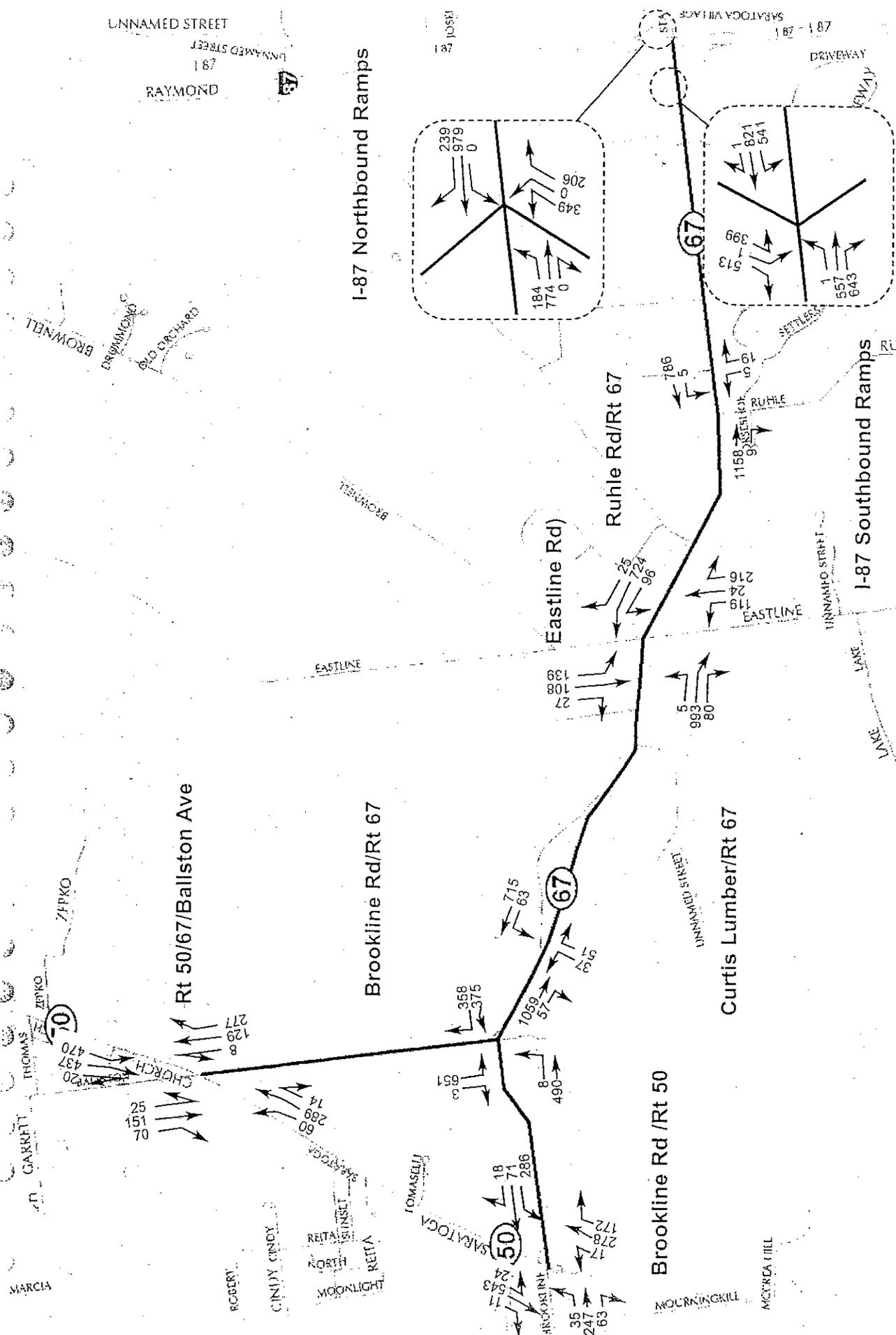


FIGURE 4.4 BUILD 2010 AM PEAK HOUR TURNING MOVEMENTS WITHOUT MAJOR RETAIL CENTERS

**ROUTE 67 CORRIDOR STUDY**

0 0.5 miles

BEY Planning May 2005  
Source: CDTC, NYSDOT  
Creighton Manning

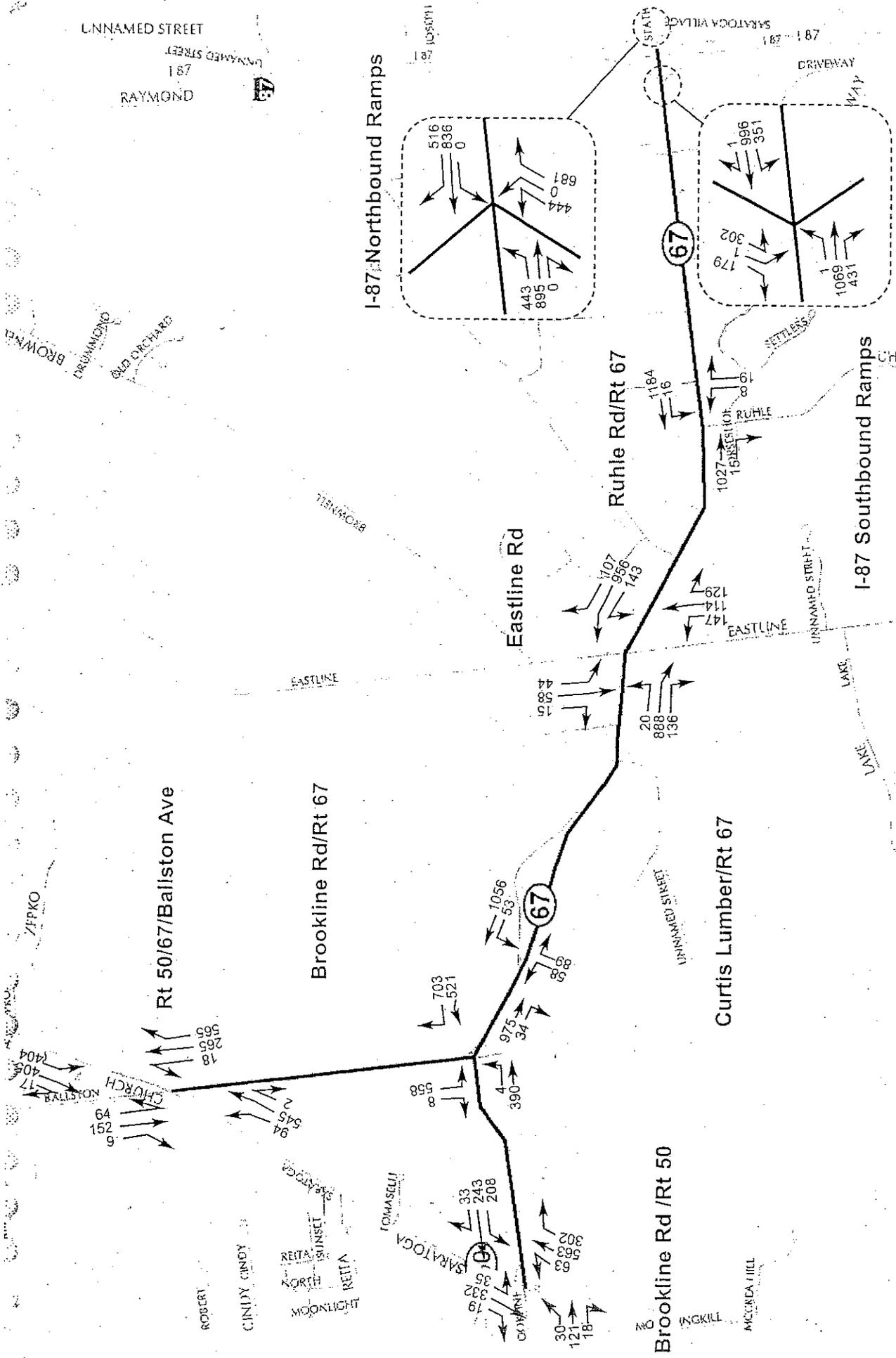


FIGURE 4.5 BUILD 2010 PM PEAK HOUR TURNING MOVEMENTS WITHOUT MAJOR RETAIL CENTERS

**ROUTE 67 CORRIDOR STUDY**

Table 4.7 - Traffic Forecasts for Study Intersections without Major Retail Centers

Development	Net Traffic Generation		Rt. 50 & Brookline		V-Corners		Bookline & Rt. 67		Curtis Lnbr & Rt. 67		Eastline & Rt. 67		Ruhle Rd. & Rt. 67		I-87 SB & Rt. 67		I-87 NB & Rt. 67		
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
	2004 Volume		1227	1377	1405	1898	1340	1544	1451	1618	1935	2045	1459	1630	2492	2281	1770	2512	
2010 Volume (1.5%)*		1341	1506	1536	2075	1465	1688	1587	1769	2115	2236	1595	1782	2724	2494	1935	2747		
3 Adirondack Trust Co	In	10	34	1	3	6	19	3	10	3	10	3	9	3	9	2	5		
	Out	7	34	1	3	4	19	2	10	2	10	2	9	2	9	1	5		
4 Toscana Mobile Home Park	In	3	7	1	2	3	6	2	4	2	4	2	4	2	4	1	3		
	Out	12	4	4	1	11	4	7	3	7	3	7	3	7	3	2	1		
5 Yarlin Ozbay Gas Station	In	14	18	4	5	9	13	4	5	4	5	3	5	3	5	2	3		
	Out	14	18	4	5	9	13	4	5	4	5	3	5	3	5	2	3		
6 Rolling Brook Meadows	In	3	10	1	4	0	1	2	6	2	6	2	6	2	6	1	4		
	Out	9	6	3	2	1	1	5	4	5	4	5	4	5	4	2	1		
7 Brookline Condo Develop	In	4	19	0	2	0	0	0	0	3	11	0	0	3	11	0	0		
	Out	20	9	0	0	0	0	0	0	12	6	6	3	12	6	0	0		
9 East Line Subdivision	In	20	69	0	1	2	6	2	7	7	7	7	24	7	7	4	14		
	Out	61	41	1	1	5	3	6	4	6	4	21	14	6	4	12	8		
10 Beacon Hill	In	16	60	11	42	2	6	10	36	10	36	10	36	10	36	6	24		
	Out	54	34	38	24	5	3	33	20	33	20	33	20	33	20	11	7		
11 Dunkin Donuts	In	62	18	6	2	34	10	19	5	19	5	19	5	16	5	16	5		
	Out	48	23	5	2	26	13	14	7	14	7	14	7	12	6	12	6		
12 SSP/Tech Park Phase IV	In	223	58	167	43	78	20	67	17	67	17	67	17	67	17	45	12		
	Out	50	215	37	161	17	75	15	65	15	65	15	65	15	65	7	32		
13 Aztech Tech	In	46	10	34	7	16	3	14	3	14	3	13	3	13	3	8	2		
	Out	7	47	5	35	3	16	2	14	2	14	2	13	2	13	1	7		
14 SKS Bottling & Office/Warehouse	In	74	14	55	10	26	5	22	4	22	4	22	4	22	4	15	3		
	Out	9	80	7	60	3	28	3	24	3	24	3	24	3	24	1	12		
16 Luther Forest (Phase I)	In	900	225	9	2	72	18	81	20	20	20	81	20	20	20	261	65		
	Out	180	900	2	9	14	72	16	81	16	81	16	81	16	81	52	261		
17 Luther Forest Condos	In	9	45	0	0	1	4	1	4	0	0	1	4	4	4	3	13		
	Out	48	22	0	0	4	2	4	2	4	2	4	2	4	2	14	6		
18 Travers Meadows	In	26	90	0	1	2	8	3	9	0	0	3	9	9	9	16	54		
	Out	82	52	1	1	7	5	8	5	9	9	8	5	8	5	29	31		
20 Kelch Apts	In	12	51	0	1	1	5	1	5	0	0	1	5	5	5	7	31		
	Out	48	27	0	0	4	2	5	3	5	5	5	3	5	3	29	16		
21 Malta Farm Residential	In	4	18	0	1	1	3	1	4	0	0	1	4	4	4	2	8		
	Out	20	9	1	0	3	1	4	2	4	4	4	2	4	2	9	4		
22 Park Place	In	169	298	2	3	15	27	17	30	0	0	17	30	30	30	101	179		
	Out	158	339	2	3	14	31	16	34	30	30	16	34	16	34	95	204		
23 Blessed John Cemetery	In	12	28	1	1	2	4	2	6	0	0	2	6	6	6	5	13		
	Out	5	56	0	3	1	8	1	11	6	6	1	11	1	11	2	25		
2010 Build Volume				1757	1960	1941	2530	1876	2174	1973	2255	2545	2748	1973	2260	3464	3317	2725	3809
% Increase over 2010 No Build				31%	30%	26%	22%	28%	29%	24%	27%	20%	23%	24%	27%	27%	33%	41%	39%

\*CDTC Estimates 0.5% background growth - 1.5% is a conservative estimate

Table 4.8 - 2010 Build Levels of Service (LOS)  
without Major Retail Centers

Intersection		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
Rt. 50 & Brookline Rd	Overall	87.2	F	112.0	F
	Eastbound	27.7	C	16.8	B
	Westbound	357.4	F	181.5	F
	Northbound	11.2	B	130.1	F
	Southbound	15.0	B	10.6	B
V-Corners	Overall	30.5	C	128.5	F
	Eastbound	22.5	C	20.6	C
	Westbound	39.1	D	256.6	F
	Northbound	20.5	C	37.3	D
	Southbound	32.3	C	101.0	F
Brookline & Rt. 67	Northbound Left	12.2	B	13.2	B
	Eastbound Left/Right	oversaturated	F	320.1	F
Curtis Lumber & Rt. 67	Westbound Left	13.1	B	12.0	B
	Northbound Left	oversaturated	F	oversaturated	F
	Northbound Right	30.5	D	32.8	D
Eastline & Rt. 67	Overall*	66.1	E	108.1	F
	Eastbound	64.0	E	108.6	F
	Westbound	24.6	C	94.8	F
	Northbound	132.0	F	163.5	F
	Southbound	100.6	F	22.5	C
Ruhle Rd. & Rt. 67	Westbound Left	11.8	B	11.1	B
	Northbound Left/Right	40.2	E	68.9	F

\*Assumes STAR project has been implemented

## 5. 2010 Traffic Management Program

### 5.1. Route 67 Within Malta

#### I-87 Northbound and Southbound

In the summer of 2005, NYSDOT is expected to break ground on a project to build five two-lane roundabouts on the eastern edge of the study area. The five roundabouts will be constructed at the intersections of Route 67 with, from east to west, (1) Route 9, (2) Kelch Drive, (3) I-87 Northbound ramps, (4) I-87 Southbound ramps and (5) State Farm Entrance.

Completion of the project is scheduled for the fall of 2007. These two-lane roundabouts will provide a high level of service, effectively turning Route 67 into a four lane roadway, and will

minimize traffic delays. As shown in Table 4.5 the two roundabouts at the I-87 interchange are projected to operate at levels of service A during both peak hours.

#### Eastline Road

NYS DOT recently upgraded the intersection of Route 67 with Eastline Road, which is located on the border between the Towns of Malta and Ballston. The improvement was part of the Short Term Accident Reduction Program, also known as a STAR project. Left turn lanes were added, widening Route 67 from a two-lane to a three-lane road at the intersection. As can be seen in Table 4.5, even with the STAR Project improvements, this intersection is predicted to operate at LOS F during the peak PM hour for the 2010 build scenario.

BFJ proposes to install a two-lane roundabout at this intersection, which would reduce delays to 5.1 and 11.5 seconds and result in LOS to B during both the AM and PM peak periods. The development of multiple roundabouts along the corridor will improve safety by minimizing the need for left turns, into and out of adjacent sites, as vehicles can make right turns with a U-turn at the nearest roundabout.

#### 5.2. Southerly Section of Route 67 in Ballston

##### Curtis Lumber

BFJ explored three options to provide improvements in both LOS and safety for this area: (A) grade separated roadway access, (B) at-grade signalized intersection, and (C) right-turns-in and right-turns-out with two roundabouts. All options include the addition of a left turn lane, which will be added as part of the bridge replacement project. The grade separated option (shown in Figure 5.1) provides improved access for both Curtis Lumber and the proposed industrial park to be located on the north side of Route 67 across from Curtis Lumber. This option will also have the greatest safety improvement, which is especially important, as Curtis Lumber is in the center of a high crash area. The existing overpass has a vertical clearance of 25' and a width of 96'. This overpass is structurally deficient and in need of replacement. The current plan is to lower Route 67 and to replace the overpass with a culvert that is high enough for the Zim Smith Trail to pass under Route 67. Alternative A would consist in replacing the existing overpass with a modified overpass that would be lower and narrower, and that would allow a two-lane roadway plus the Zim Smith Trail to pass underneath Route 67. Further study is needed to determine the viability and cost of this option. Initial review by NYS DOT determined that the cost of a precast concrete bridge with a 36' opening would be approximately \$1.0 million. In addition, to ensure safe sight lines on the overpass, the industrial access roadway may need to be depressed under Route 67 by 5' to 10', raising the cost of the roadway to approximately \$1.5 million per lane mile. A very preliminary cost provided by NYS DOT for the incremental difference between a bridge structure that would accommodate an access road and multi-use path and a precast concrete structure to accommodate a multi-use path would be approximately \$2.3 million. This cost would also include the depression of the access road and trail under Route 67 and the work on the County's sanitary sewer transmission line.

2005-05

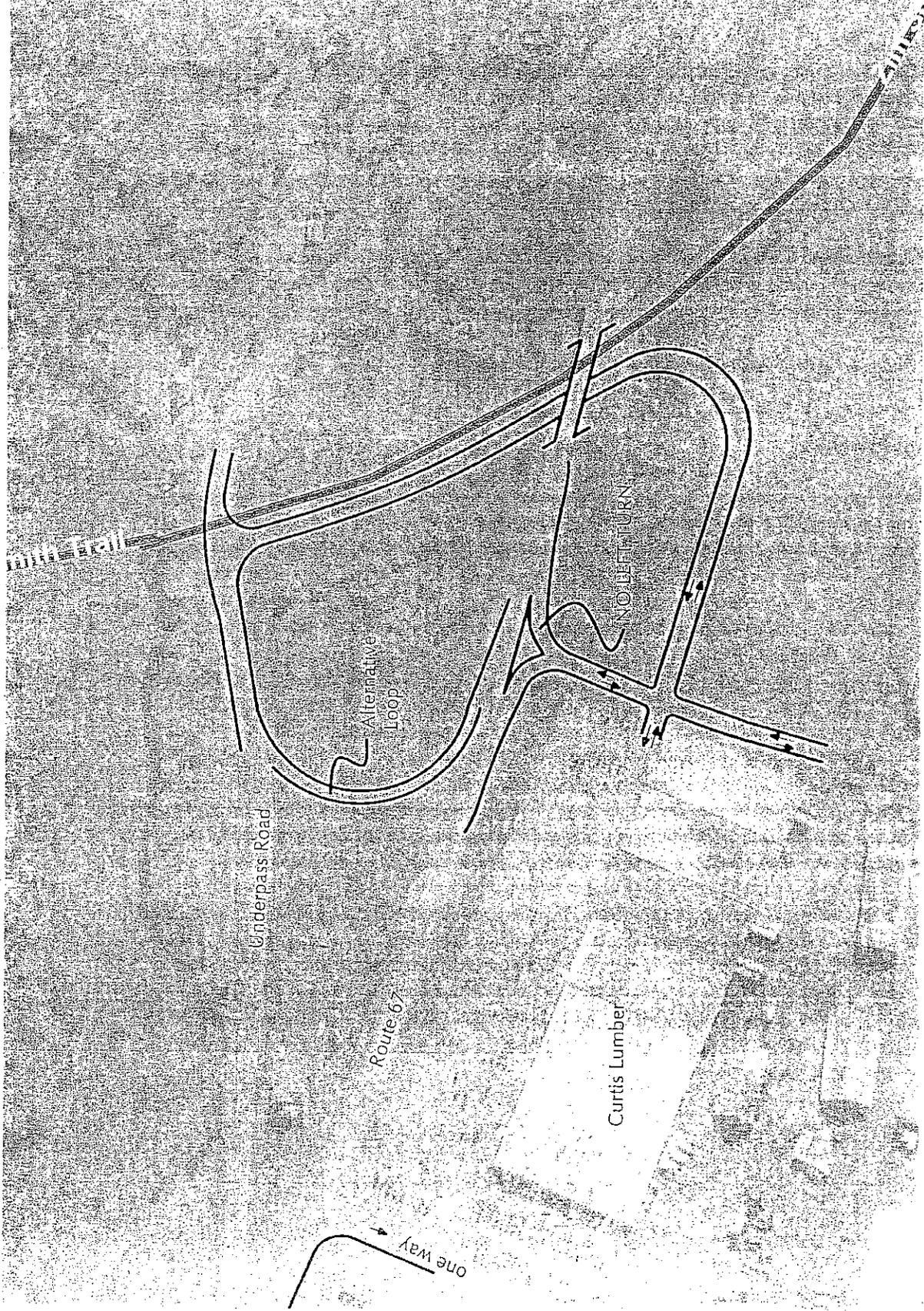


FIGURE 5.1 OPTION A - GRADE SEPARATED ACCESS TO CURTIS LUMBER

**ROUTE 67 CORRIDOR STUDY**

Option B, shown in Figure 5.2, involves the installation of a traffic signal at the intersection of the Curtis Lumber driveway and Route 67 and the widening of Route 67 to five lanes (2 lanes in each direction plus a left-turn lane) for a length of about 600 to 1,000 feet. Traffic would merge back to one lane after the signalized intersection. The installation of a traffic signal is contingent on meeting the warrants for signalization.

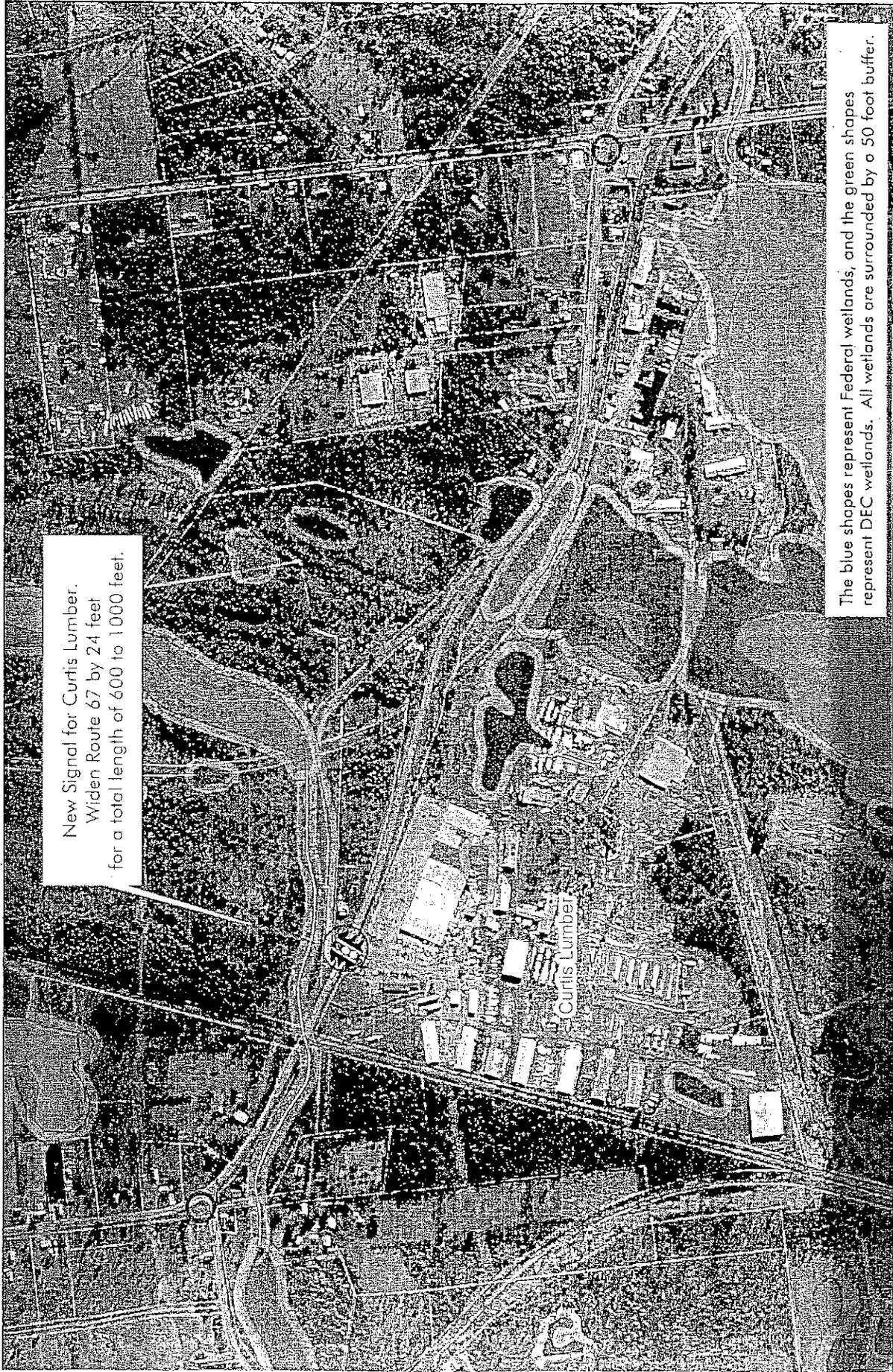
Option C (Figure 5.3), would rely on roundabouts on each end of the segment at Brookline and Eastline Road, and prohibition of left turns at Curtis Lumber. A new right-turn only exit would be built at the easterly edge of the Curtis Lumber parking lot. All west bound vehicles would be required to travel approximately 3,000 feet to the roundabout located at Eastline Road where they would make a U-turn. Vehicles coming from the east and wanting to turn into Curtis Lumber would be directed to the roundabout at Brookline Road where they would make a U-turn and travel back about 1,500 feet to turn right into Curtis Lumber. Another alternative (Option C.1) – possibly a short-term solution or one for off-peak hours – would be to allow westbound left turns into Curtis Lumber from an unsignalized left-turn lane.

From a safety standpoint, Option A or C is recommended, but due to budgetary and timeline issues Option A might not be feasible at this time. Option A will lead to the greatest reduction in crashes, while Option C will also lead to a reduction in accidents in this segment of the corridor. In conjunction with the above options, we advise that Curtis Lumber alter the current roadway configurations on their property. At the current time, Curtis Lumber maintains two separate entrances, one for the industrial park and a second for the lumber yard. We recommend that these two operations be connected by an internal roadway. Curtis Lumber should have a connection with Eastline Road, which would provide additional options and flexibility. Access from Curtis Lumber to Eastline Road will help reduce the traffic along Route 67.

		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Option B	Signalized	16.9	B	19.9	B
Option C	Exit Right Only	20.4	C	Oversaturated	F
Option C.1	New Entrance – Left Turn In	10.7	B	15.1	C

#### Brookline Road

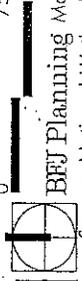
Brookline Road is currently an unsignalized intersection. As the volume of traffic increases, this intersection will pass a threshold which will require mitigation. Even under the no-build scenario, the intersection is projected to operate at LOS F during the AM peak hour. In order to accommodate the increased traffic volumes, there are two available options, signalization or development of a roundabout. We believe a roundabout is the most viable and safest option (see Figure 5.4). In addition, as this intersection is located in an environmentally sensitive area due to the wetlands and wildlife corridors, the development of a roundabout will allow the roadway to maintain its two lane profile. Signalization will require a minimum of four lanes to



**FIGURE 5.2 OPTION B - NEW SIGNALIZED INTERSECTION AT CURTIS LUMBER WITH ROUTE 67 WIDENED**

**ROUTE 67 CORRIDOR STUDY**

750 feet.



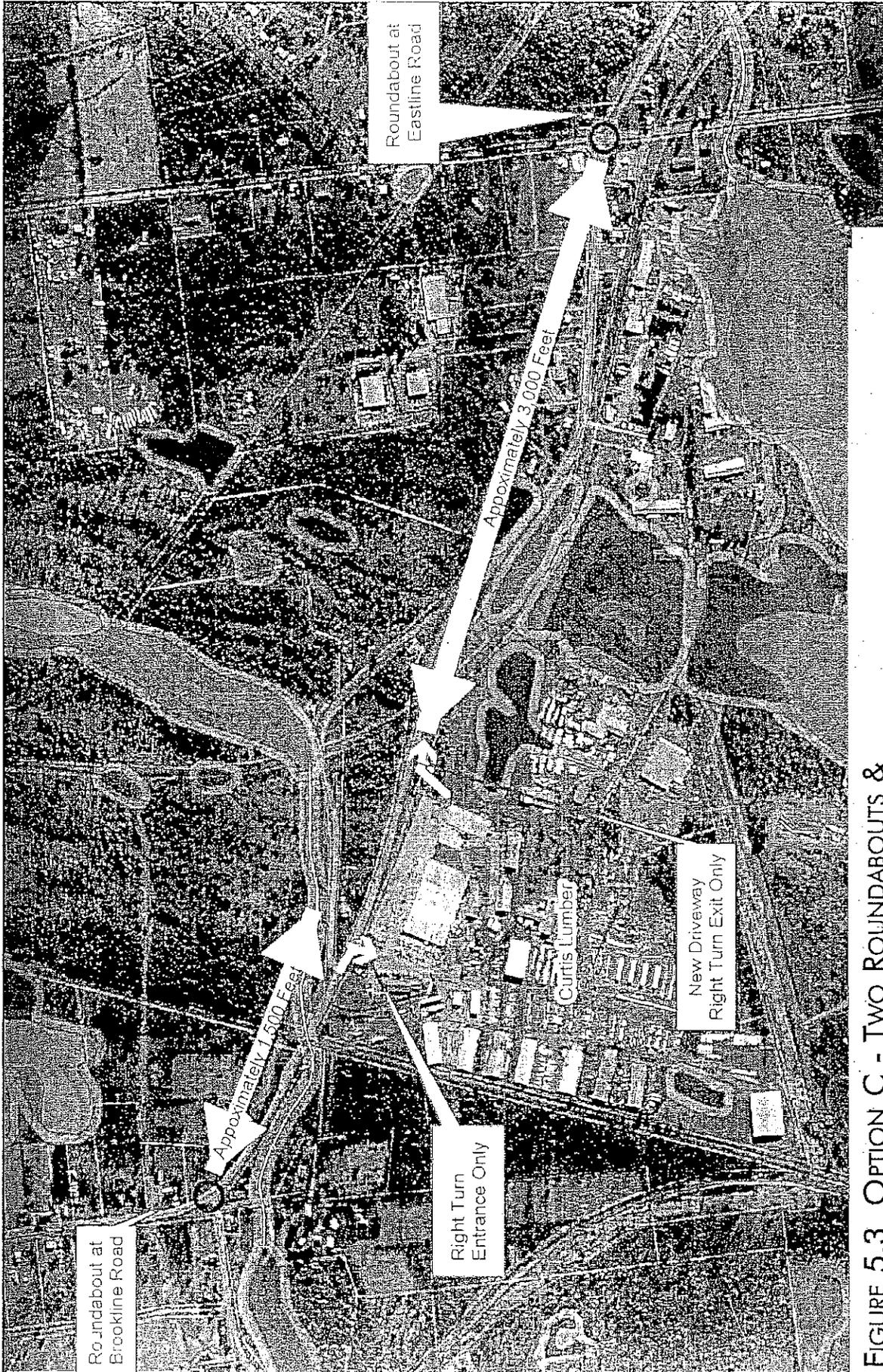
BBJ Planning May 2005

Source: National Wetlands Inventory

NYDEC

NYS GIS Clf

house



**FIGURE 5.3 OPTION C - TWO ROUNDABOUTS & NEW RIGHT TURN ONLY EGRESS FOR CURTIS LUMBER**

store vehicles while waiting at the intersection. The installation of a roundabout will result in LOS B with a delay of 14.1 seconds during the AM and a LOS D with a 26.7 second delay during the PM peak hour. The roundabout should be constructed to enable a 4<sup>th</sup> leg to be connected should the proposed parallel access road be developed. The proposed roundabout at the Brookline Road is the most logical southern terminus for the parallel access road.

### 5.3. V-Corners

This intersection has a very difficult geometry, which leads to its distinctive name. Instead of the 90° angles found in a typical intersection, this intersection is composed of two angles of approximately 40°, and two at approximately 135°. These angles restrict the maximum carrying capacity of this intersection and are a significant reason for the high accident statistics at this location. Regardless of the development plans for this area, the intersection of Route 67 with Route 50 and Ballston Road will need to be upgraded. In the event that the two major shopping complexes proceed, a Wal-Mart to the east and the Widewaters shopping center to the west, the intersection will experience significant traffic delays. In order to increase traffic flow and reduce conflicts, this intersection should be broken into two separate intersections.

As shown in Figure 5.5, we recommend a single-lane roundabout at each intersection. The roundabouts will reduce delays for through traffic as well as provide access to neighboring properties, if they are developed. Together with right-turn bypass lanes, the single-lane roundabouts will provide an acceptable LOS, and also produce a pedestrian friendly design. They will permit Route 67 to remain a two-lane roadway. If these two intersections were signalized, they would require a minimum of four lanes, and may be required to expand to five or six lanes to accommodate additional turning lanes. Such a configuration deters non-motorized users as the crossing distances become too great.

### 5.4. Route 50 & Brookline Rd

The intersection of Route 50 and Brookline Road is located at the west end of the study area. It is currently an actuated signalized intersection operating at LOS B during both the AM and PM peak periods. Under the future no-build scenario, approximately 5 seconds of additional delay is added to both the AM and PM peak periods, reducing the LOS to C. The future LOS of the intersection deteriorates under the future build scenario to LOS F, with delays of 100 & 180 seconds during the AM and PM peak periods. Adding an exclusive left-turn lane to the northbound, southbound and westbound approaches, along with shifting 5 seconds of green time from the north-south phase to east-west phase, will result in a LOS of C (23.4 seconds) and D (53.2 seconds) during the AM and PM peak periods, respectively. Widening of Route 50 to accommodate additional turn lanes is a recommended mitigation in the 1998 Traffic Impact Study for SSP/Tech Park<sup>9</sup>, which should be a source of funding.

### 5.5. Future Traffic Conditions with Improvements.

Table 5.3 contains all the proposed mitigations listed above along with the projected LOS and delays. The suggestions are a baseline of what can be accomplished to ameliorate and improve upon the traffic conditions. Table 5.2 still shows poor levels of service for some

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<sup>9</sup> Traffic Impact Study - Proposed Corporate Technology Park, NYS Route 50, Clough, Harbour & Associates, LLP, 1998, pg17

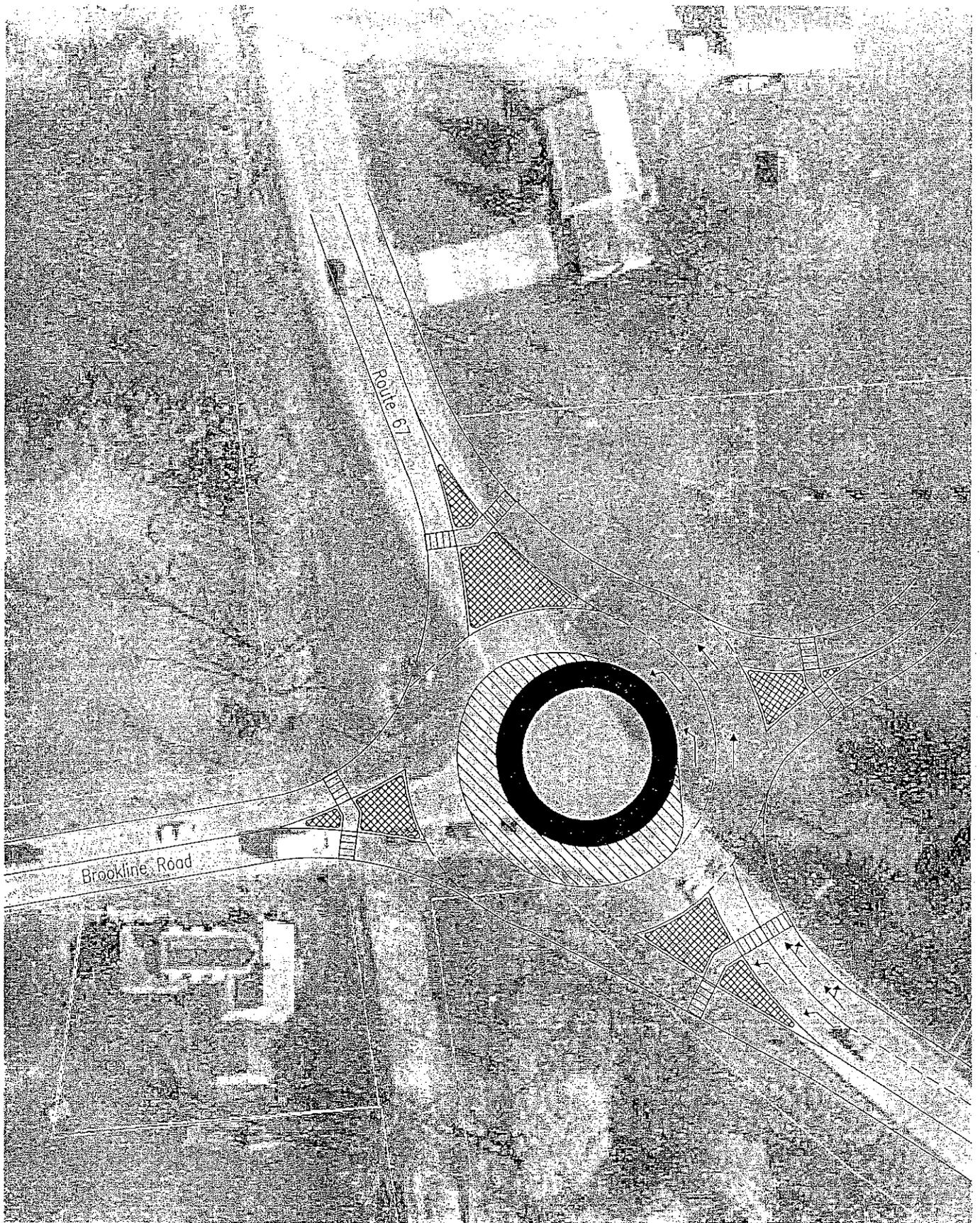


FIGURE 5.4 PROPOSED ROUNDABOUT AT ROUTE 67 AND BROOKLINE ROAD

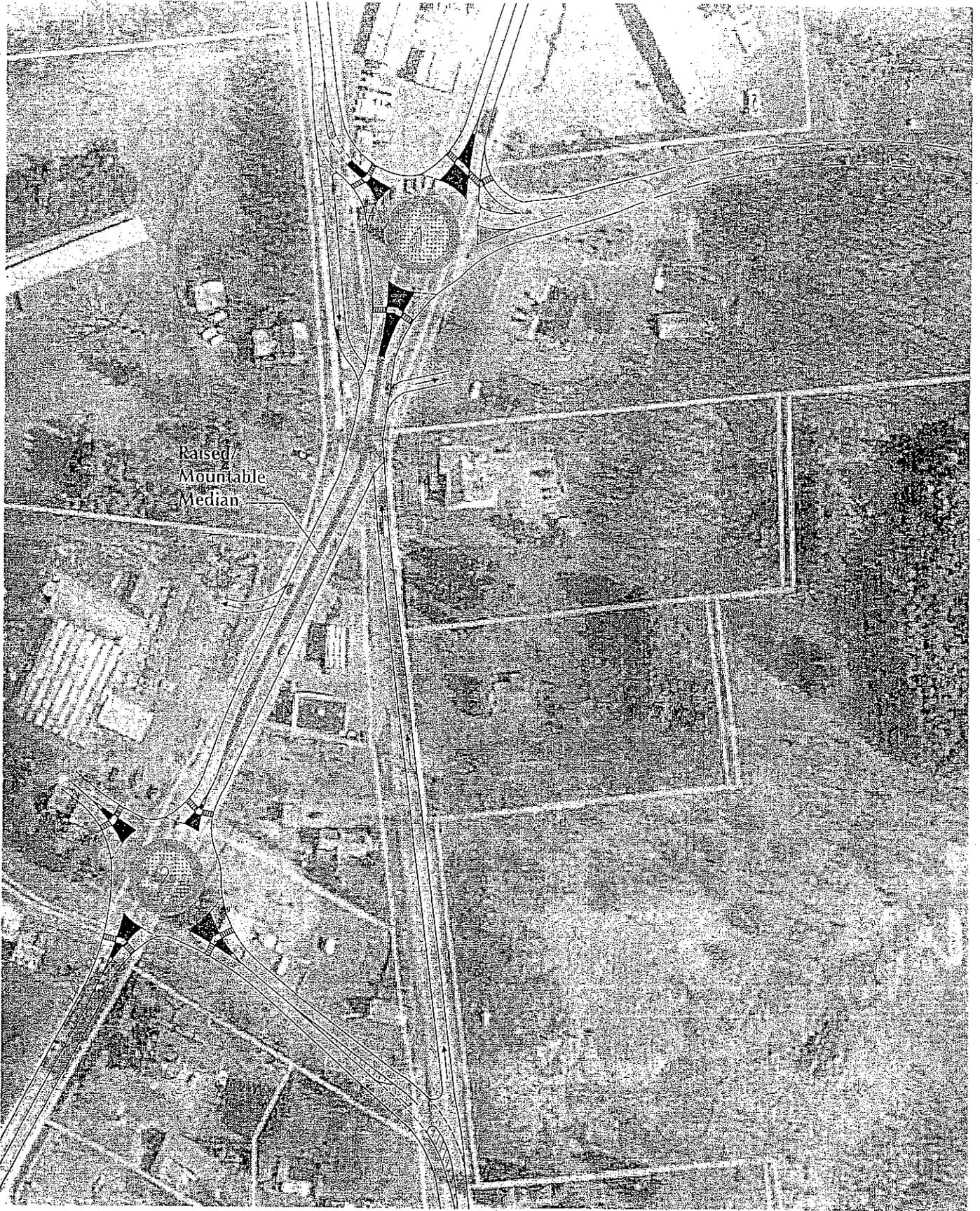


FIGURE 5.5 PROPOSED ROUNDABOUTS AT V-CORNERS

movements. The south roundabout at the V-Corners may need an additional right-turn bypass lane. It should be noted that the above calculations do not take into consideration the effect of the parallel road on the V-Corners roundabouts. Also the LOS F estimate for the proposed right-turn out of Curtis Lumber does not take into consideration the traffic reduction resulting from the connection to Eastline Road. Since the number of vehicles exiting the Curtis Lumber driveway is relatively low this condition can be mitigated by the connection.

Table 5.2 Proposed Mitigation Measures and Resulting LOS

Intersection		Proposed Mitigation Measures	AM Peak		PM Peak	
			Delay	LOS	Delay	LOS
Rt. 50 & Brookline Rd	Widen road to add exclusive left-turn lanes for the northbound, southbound and westbound approaches. During AM peak hr shift 5 seconds of green time from NS phase to EW phase. During PM peak hr increase cycle length to 90 seconds and include exclusive left-turn phases for the NS approach along Brookline Rd.	Overall	23.4	C	53.2	D
		Eastbound	16.0	B	32.5	C
		Westbound	39.9	D	56.4	D
		Northbound	15.6	B	74.4	E
		Southbound	22.9	C	19.3	B
V-Corners	North Roundabout (#1) South Roundabout (#2)		10.0	B	20.2	C
			8.2	B	47.5	E
Brookline & Rt. 67	Roundabout		14.1	B	26.7	D
Rt. 67 & Curtis Lumber	Option A: Grade Separation / Option C: Two Roundabouts – no left turns*	Northbound right turn out	20.4	C	oversaturated	F
		Westbound left turn in	10.7	B	15.1	C
	Option B: Signalized Intersection**: Two Eastbound Lanes, Two Westbound Lanes w/exclusive Left Turn Lane	Overall	16.9	B	19.9	B
		Eastbound	9.2	A	12.7	B
		Westbound	21.6	C	27.2	C
Northbound	21.2	C	21.0	C		
Eastline & Rt. 67	Proposed 2-lane Roundabout		5.1	B	11.5	B
Rt. 67 & Ruhle Rd	Northbound left turns made via roundabout at State Farm approximately 3,500 feet to the east	Northbound right turn out	27.9	D	29.0	D
		Westbound left turn in	12.2	B	12.5	B

\*Assumes no road widening. Only 147 vehicles are expected to exit from Curtis Lumber, a portion of which will use the proposed connection at Eastline Road. The remaining vehicles will operate at LOS A

\*\*Assumes road will be widened by at least 24' to accommodate signalization

We also prepared the mitigation analysis without the presence of the major retail centers (Walmart and Widewaters), the results of which are shown in Table 5.4. As can be seen, due to the lower volumes, the required mitigations would be reduced. In the case of Brookline Road and Route 50 intersection, the full build-out requires the addition of three new lanes (northbound, southbound and westbound), while without the shopping centers, the road only needs to be widened by one lane (westbound). At V-Corners, due to increased volumes, major re-construction would be required at full buildout, but without the major retailers traffic delays only require the

intersection to be widened by one lane (westbound) and the signal needs to be retimed. From the standpoint of safety the roundabouts should be developed at V-Corners regardless of the shopping center development. In addition, the intersection at Eastline Road would be able to handle traffic volumes without the major retailers by adding two additional left-turn lanes (northbound and southbound) as well as retiming the signal. The intersection of Brookline and Route 67 would still operate at LOS F and a roundabout is recommended.

Table 5.3 - Proposed Mitigation Measures and Resulting LOS without Major Retail Centers

Intersection	Proposed Mitigation Measures		AM Peak		PM Peak	
			Delay	LOS	Delay	LOS
Rt. 50 & Brookline Rd	Widen Road to add exclusive left-turn lane for the WB approach along Brookline Road. During AM peak hr, provide a phase for WB movement only by reducing the green time for the EW & NS phase by 4 sec each. During PM peak hr, shift 4 seconds of green time from EW phase to NS phase.	Overall	30.2	C	45.1	D
		Eastbound	61.9	E	25.8	C
		Westbound	28.4	C	37.8	D
		Northbound	14.6	B	68.3	E
		Southbound	21.5	C	7.9	A
V-Corners	Add exclusive right-turn lane for the WB approach along Rt 67. Reduce green time for EW movement by 2 sec & for NS movement by 4 sec and provide and add it to the SB movement only phase.	Overall	22.3	C	33.9	C
		Eastbound	21.6	C	21.4	C
		Westbound	6.5	A	7.3	A
		Northbound	25.8	C	63.3	E
		Southbound	28.9	C	42.8	D
Brookline & Rt. 67	Additional lane added on Brookline Rd. Not possible to improve LOS without signalization or roundabout.	Eastbound Left	110.6	F	301.2	F
		Eastbound Right	459.6	F	57.1	F
		Northbound Left	12.2	B	13.2	B
Rt. 67 & Curtis Lumber	Option A: Grade Separation / Option C: Two Roundabouts*	Northbound right turn out	18.3	C	85.3	F
		Westbound left turn in	10.3	B	12.6	B
Eastline & Rt. 67	Add exclusive left-turn lanes along the NB & SB approach on Eastline Road. During AM peak, increase cycle length from 73 sec to 80 sec, provide WB movement only phase and add 3 sec of green time for the EW phase. During PM peak, increase cycle length to 97 sec, provide WB movement only phase and add 17 sec of green time to EW movement.	Overall	30.2	C	51.2	D
		Eastbound	74.4	E	75.3	E
		Westbound	13.5	B	22.8	C
		Northbound	33.4	C	65.4	E
		Southbound	51.2	D	43.0	D
Rt. 67 & Ruhle Rd	Northbound left turns out prohibited	Northbound right or left turn out	25.8	D	22.0	C
		Westbound left turn in	11.8	B	11.1	B

\*Assumes no road widening. Only 147 vehicles are expected to exit from Curtis Lumber, a portion of which will use the proposed connection at Eastline Road. The remaining vehicles will operate at LOS A

## 6. Parallel Road

One method to improve the traffic flow in the area around V-Corners, where build volumes may increase by nearly 70%, is the development of a parallel-access road. The development of a parallel access road was explored since the improvements proposed at V-Corners would only achieve a LOS E during the PM peak hour. This access road should be added to the official map for the Town. This road will serve to both improve traffic flow by providing an alternative roadway, and also open up new areas for development, which will increase traffic demand in this area.

As seen in Figures 6.1 and 6.2, the northern portion of the access road would connect to the Rossi Property. The building plans filed with the Town of Ballston show a loop road serving development sites within the Rossi property. The roadway within the Rossi property should be connected to the parallel access road. The roadway would then travel south and would be parallel to Route 67, avoiding the wetlands. The southern terminus would be the proposed roundabout at Brookline Road. The road would be approximately one mile in length, with a proposed speed limit of 35 MPH.

We recommend a 60' right-of-way (ROW), which is the width proposed in the Rossi plan. As shown in the cross-section (Figure 6.3), the roadway should be 41' curb to curb. The travel lanes should be 11' wide, with a 4' shoulder which can accommodate cycling. A 5' sidewalk should be present along the entire west side. The center median will serve as a location for a turning lane and will also serve as a pedestrian refuge in certain sections where we may have a pedestrian or trail crossing. At the pedestrian/trail crossing locations the median lane could be raised possibly with landscaping that does not obstruct sight lines (either high-canopy trees or low-level plantings).

The parallel road would have a more commercial and service function as compared to Route 67. Traffic to the commercial uses east of Route 67 would be directed to the parallel road. Vehicles leaving the commercial uses located east of Route 67 could leave via Route 67 if they will go northbound (right-turn only exits on Route 67) or they could leave via the parallel road. It is expected that the current Route 67 would continue to function as the state route, but that its traffic volumes would be reduced.

## 7. Access Management Plan

### 7.1. Goals of an access management plan

One of the best ways to improve traffic flow along Route 67 would be by employing access management strategies, which aim to alleviate the inherent conflicts between the function of through traffic of an arterial or state highway, and the local function of access to abutting properties. As traffic volumes increase along these types of roads, these conflicts become more and more problematic in terms of congestion and accidents, and will eventually hamper the economic well being, as well as the quality of life along the corridor. Access management attempts to group some of the turning movements in and out of properties, or shift them to side streets or service roads or to minimize the more problematic turns, i.e. the left turns. As shown in the figure below, left turns in and out of driveways are the main culprits for crashes.

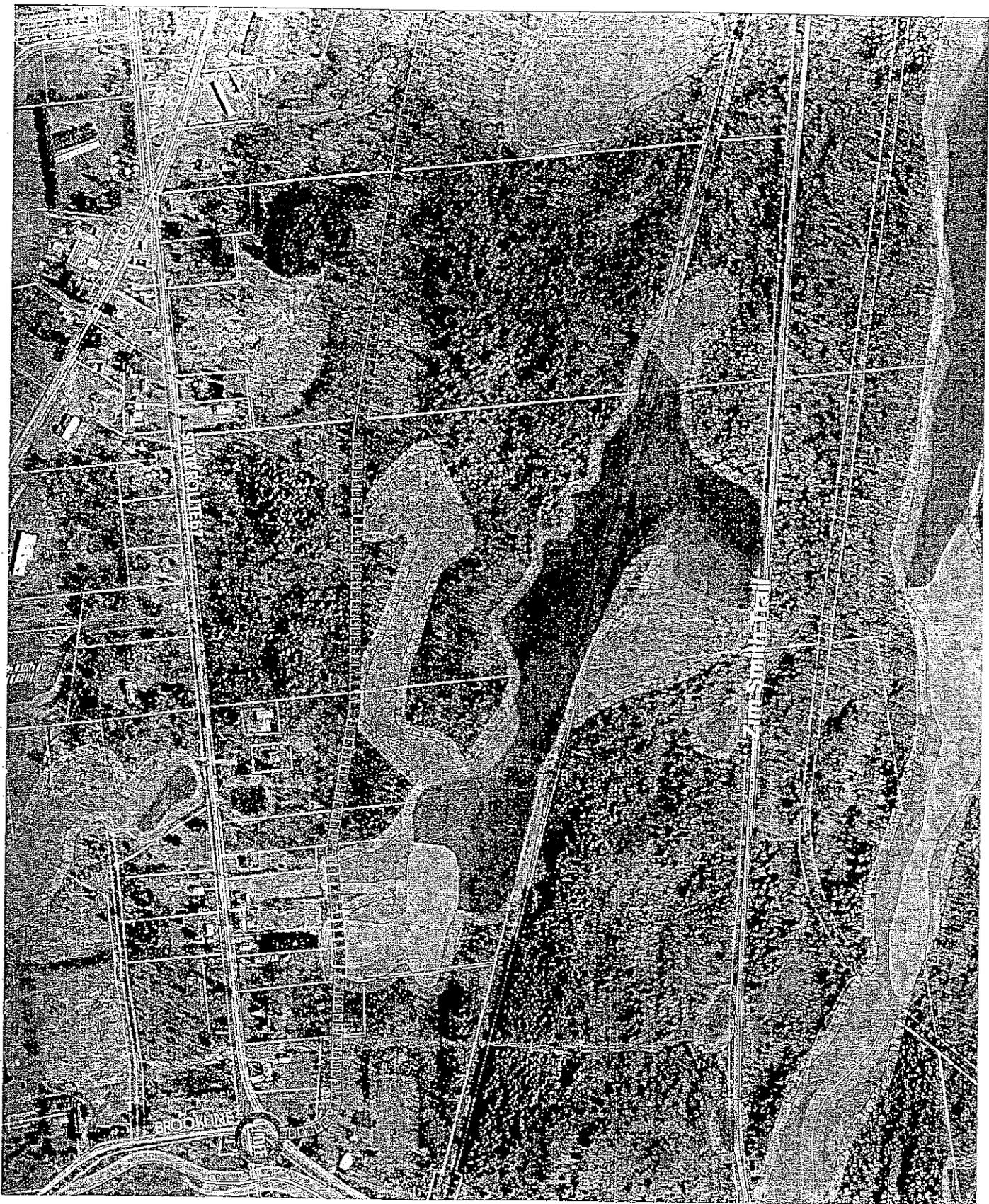
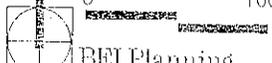


FIGURE 6.1 SOUTHERN PORTION OF PARALLEL ROAD

ROUTE 67 CORRIDOR STUDY

0 1000 feet



BEJ Planning June 2005  
 Source: National Wetlands Inventory  
 NYDEC

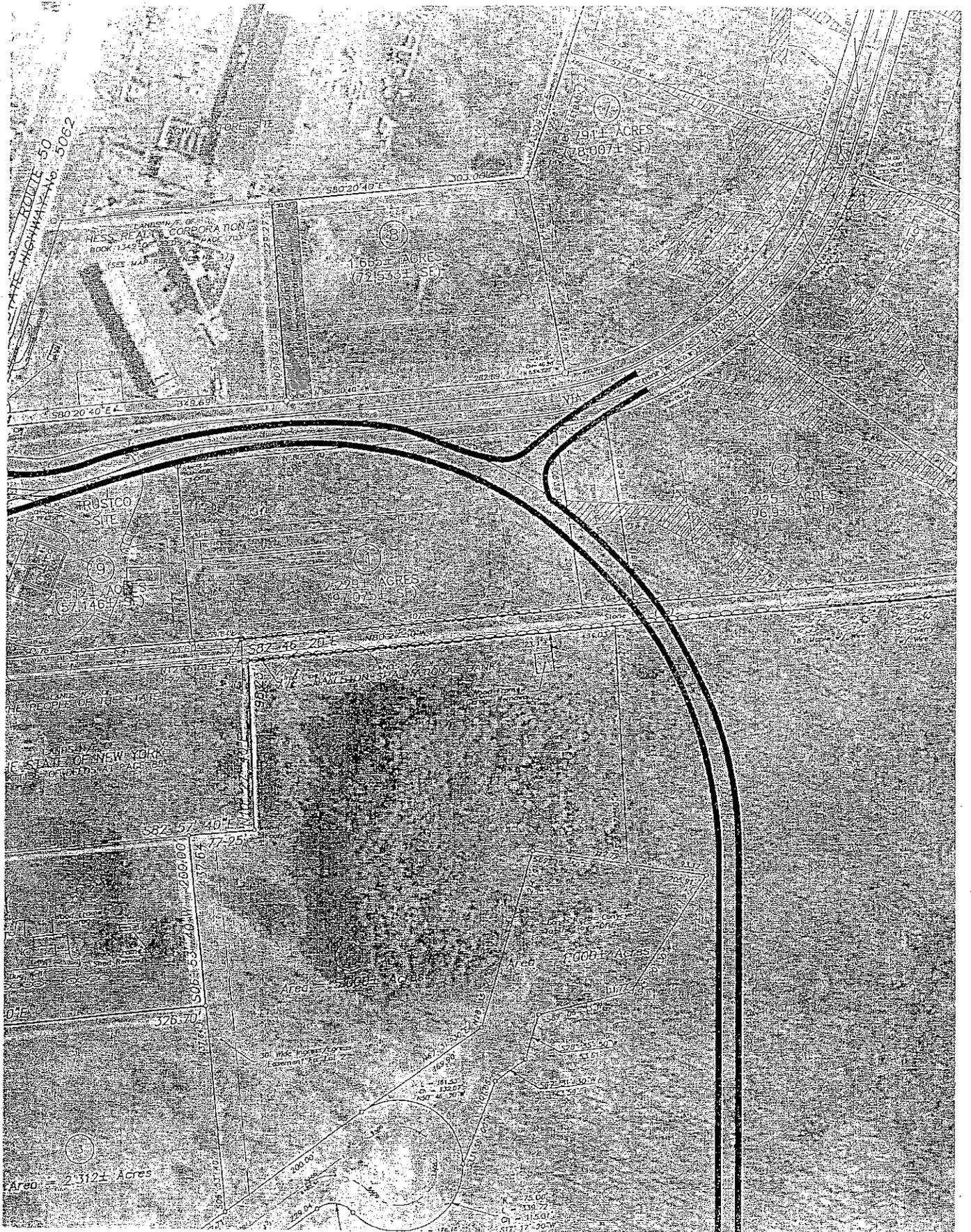


FIGURE 6.2 NORTHERN PORTION OF PARALLEL ROAD  
**ROUTE 67 CORRIDOR STUDY**



150 feet

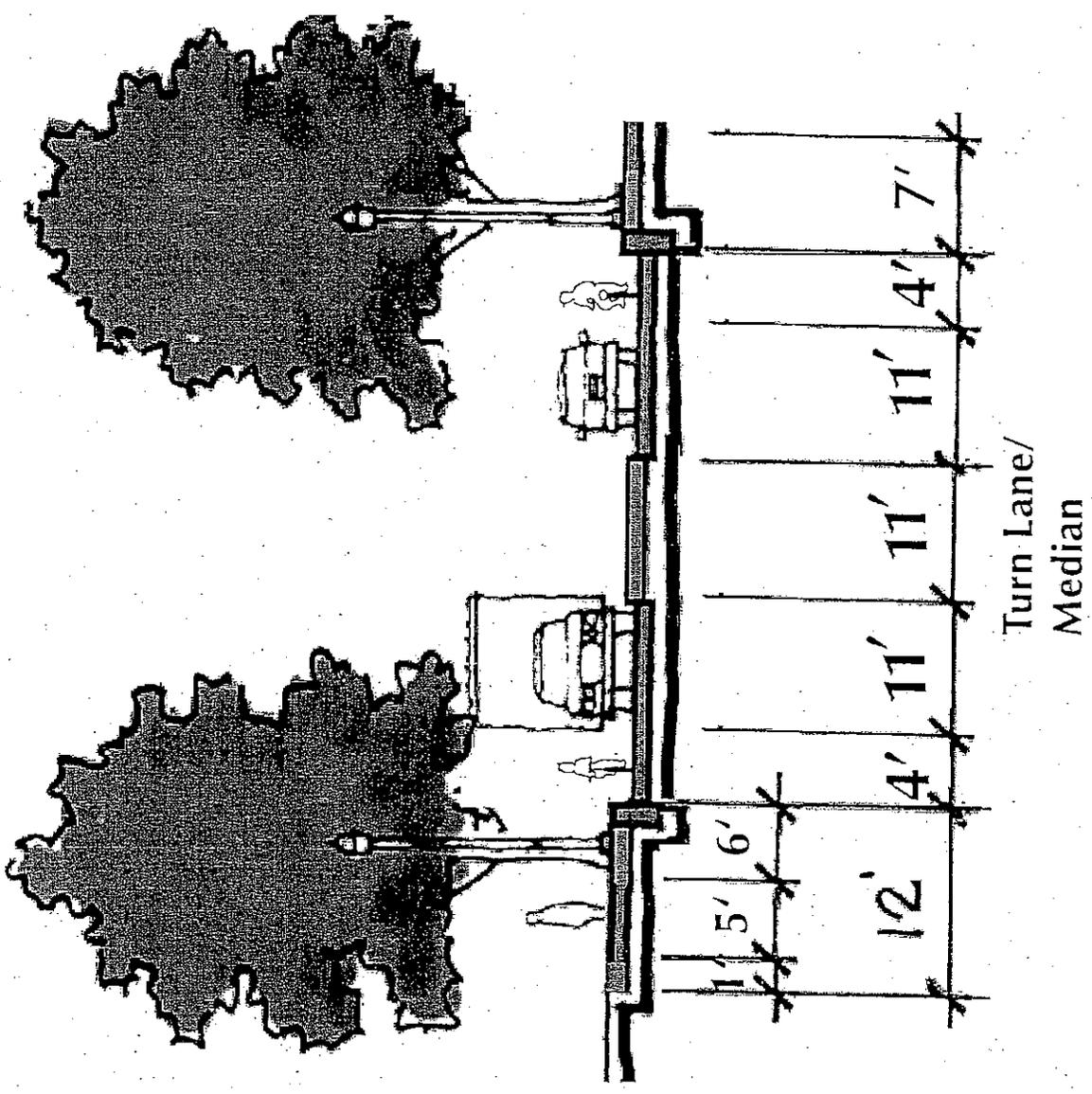
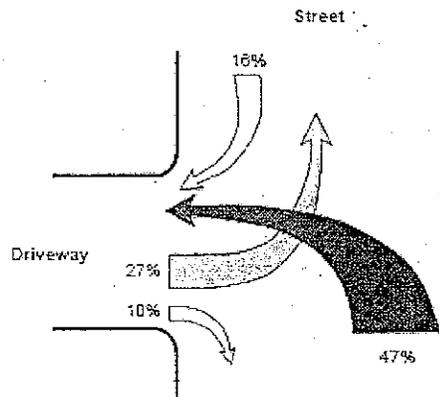


FIGURE 6.3 CROSS SECTION OF PARALLEL ACCESS ROAD

**ROUTE 67 CORRIDOR STUDY**

Figure 7.1 -  
Percentage of Driveway Crashes by Movement<sup>10</sup>



The basic goal is to improve traffic flow and safety along the arterial without reducing access. The elimination or discouragement of certain turns in and out driveways is often seen as a reduction in accessibility. However, this potential reduction is generally offset by increased accessibility to the property from side streets or from adjacent properties. By facilitating traffic flow along Route 67 these actions will make it easier for the volume of vehicles to grow in this corridor, which will be beneficial in the long term and will increase property values. Accident rates along arterials such as Route 67 are related to the density of driveways. Studies have shown that for every ten additional access points per mile, there is an approximate 24% increase in the number of crashes<sup>11</sup>.

It is important to understand that the municipality has a responsibility for access management along Route 67 even though it is a State Highway. The right of way is maintained by the State, and the property owners have to obtain a highway access permit from the State to build a driveway. However, the State has limited authority to control and manage access along a State highway, and the municipality maintains all land-use authority. The land-use authority of the municipality offers the best regulatory means to manage access along an arterial. By preparing an access management program, the Town can work to minimize and possibly eliminate the most hazardous movements (left turns in and out) along the corridor.

## 7.2. Access Management Benefits

Studies have shown that an effective access management program can reduce crashes by as much as 50%, increase roadway capacity by 23% to 45%, and reduce travel time and delay as much as 40% to 60%. Among the many benefits of a managed roadway are increased public safety, reduction of congestion, extended life of the roadway and improved appearance of the built environment. Access management also serves to preserve the transportation functions of roadways as well as the long-term property values and the economic viability of abutting

<sup>10</sup> Access Management Manual, Transportation Research Board, Washington, D.C. 2003, pg 10

<sup>11</sup> Access Management Manual, Transportation Research Board, Washington, D.C. 2003, pg 16

development. A further benefit is the ability to concentrate commercial activity in a smaller area, which is less damaging to landscapes and the environment.

Access management strategies have beneficial impacts on pedestrian circulation because they encourage more walking between adjacent properties (by providing connections) and by making walking more pleasant along sidewalks, due to reduced numbers of driveways and vehicular turns. Aesthetics are generally also improved by access management plans.

BFJ recommends the installation of four roundabouts in the study area. Roundabouts have been found to reduce vehicle delays, increase capacity of the intersection, improve safety, and improve aesthetics. A recent nation-wide study of roundabout safety, comparing before and after crashes for various roundabout installations, has shown that roundabouts reduce total crashes by 47% and injury crashes by 72%. This study included 5 roundabouts that replaced traffic lights. This group of conversions showed a 37% reduction in total crashes and a 75% reduction in injury crashes<sup>12</sup>. Safety statistics from Europe have shown also that single-lane roundabouts are significantly safer for pedestrians than other types of intersections. In addition, roundabouts are excellent in allowing U-turns, which permit drivers to minimize hazardous left turns. They are, therefore, an ideal access management tool. Roundabouts also serve as a traffic calming device, acting as a gateway to the commercial corridors for the Towns for Ballston and Malta.

### 7.3. Access Management Plan

The principles of access management should be considered whenever a property owner applies for development or redevelopment. It is recommended that all commercial parcels along Route 67 be required to connect to the adjacent commercial parcels. The goal is to develop a continuous connection system, equivalent to a service road that can be used for traffic circulating from parcel to parcel.

It is recognized that it will take the cooperation of both property owners to implement the connections between two parcels, and that at the time of the application by one owner it may not be possible to gain approval from the abutting owner. In this case the applicant should be required to provide an easement for future connection. The location of the easement should be coordinated with the adjacent property owner. The connection will then be required if and when the abutting owner applies for a change on his parcel.

As the area is expected to develop rapidly over the next decade, there is a significant opportunity to develop the corridor in a manner that complies with access management principles. Separate pedestrian connections should be provided between adjacent commercial lots. This will permit a patron to walk from one commercial property to another, reducing the number of vehicle trips. These connected parking lots provide the added benefit of 'shared parking', which generally can reduce the amount of required parking in each separate parking lot. At the current time, there are few instances where commercial properties abut, offering the potential to design the community with access management principles in mind.

The proposed parallel access road is in compliance with access management principles. For the property owners, the roadway represents an opportunity for higher density development for

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<sup>12</sup> Toolbox on Intersection Safety and Design (Chapter 8), Institute of Transportation Engineers and Federal Highway Administration, September 2004

the properties located between Route 67 and the parallel access road, and also between the parallel access road and the railroad tracks. In exchange for being permitted to construct at a higher density, the community benefits by requiring these properties to meet access management requirements. Specific requirements include: 1) All properties/parking lots must interconnect; 2) All properties with frontage along Route 67 must only permit right turns in and right turns out, left turns will be prohibited along Route 67. This also applies to the properties on either side of V-Corners, as all turns must be right turns in and out. Anyone wishing to make a left turn will be required to make right turn followed by a U-turn at the proposed roundabouts. Left turns will be allowed along the parallel road.

As mentioned earlier the Curtis Lumber yard and the Curtis Industrial Park should provide an internal road network that is also connected to Eastline Road. Developing a redundant road network will improve safety, reliability and capacity of Route 67.

The other main opportunity along the corridor is the prohibition of cul-de-sac style developments with the sole connection to Route 67. These cul-de-sac developments should all be required to interconnect (or to provide the right-of-way or easement for future connections) so that more flexible road networks are created.

## 8. Bicycle / Pedestrian Circulation Plan

By installing single-lane roundabouts, rather than signaling intersections, the Route 67 Corridor will be able to maintain largely its current two-lane profile and provide a more pedestrian friendly atmosphere. The area surrounding V-Corners would be best served if it is developed with retail frontage along Route 67 between the two roundabouts. The parking for these stores should be provided in the rear of the lot, with access via the parallel access road. By placing the parking in the rear of the lots, drivers will be encouraged to make use of the parallel road. The roundabouts will reduce travel speeds along this portion of Route 67 to a maximum of 30 MPH in the V-Corners area, which will create a more bicycle-friendly area. Speed is the most dangerous factor in collisions, therefore lower speeds will result in less severe collisions. To improve bicycle opportunities along Route 67 consistent shoulders should be provided with a width of at least 5 feet. At the current time the shoulders in the corridor range between 3 to 4 1/2 feet. To offer the maximum flexibility and opportunities to bicyclists both Route 67 and the parallel access road should be designed for bicycles.

As the Zim Smith Trail provides an excellent off-street pathway from just outside the Village of Ballston Spa to the Town of Halfmoon, efforts should be made to integrate it with the on-street network. Specifically, east-west connections between the Zim Smith Trail and the section of Route 67 to the south of V-Corners should be developed. At a minimum east-west access should connect Zim Smith with Brookline Road, V-Corners and the High School (See Figure 8.1). East-west connections will provide the opportunity for greater access to the commercial center and Ballston School. Another excellent location for an east-west connection is the existing school bus depot. All east-west connections which connect to the Zim Smith Trail need to cross the active rail line and therefore be coordinated with the railroad. In addition, the sewer line right-of-way should also be investigated for an east-west connection between Route 67 and the Zim Smith Trail.

The Zim Smith Trail, near the intersection with Route 67 is located at the crossroads of four major greenway systems the Ballston Lake / Alplaus Kill north-south greenway the Mourning Kill

/ Kayaderosseras north-south greenway and east-west corridors. Effort should be made to maintain greenway linkages through the area. A linked trail corridor will attract more users, as it will provide embarkation points and destinations in multiple towns and villages. To establish a trail loop linking Schenectady with Saratoga Springs, right-of-way is required to be established through the industrially zoned area in and around Curtis Lumber. An easement should be provided through this area which would improve pedestrian and cycling access for the region.

In conjunction with the access management strategies mentioned above, the municipalities should also require that developers build pedestrian connections between adjacent commercial sites as well as sidewalks adjacent to the street. These connections could occur via sidewalks adjacent to the roadway, as long as the building entrances are close to the sidewalks, or they could be located further back from the roadway. Other pedestrian-friendly actions include park-and-walk strategies in the more central area of the corridor, particularly the V-Corners. Park-and-walk strategies would imply allowing off-site parking and shared parking. Shared parking allows two different uses with different parking pattern and peaks to share some parking spaces in common. For instance, an office building and a retail facility or a movie theatre have different peaks and can share some of their parking supply, thereby reducing the overall number of spaces required and encouraging more walking. Manchester Center, a successful retail outlet village in Southwestern Vermont has adopted this concept. The private parking areas at the edge of the commercial center have park-and-walk signs inviting shoppers to park in the private lot and walk to their destination. These parking strategies move away from the typical suburban model where each use has its own independent parking and make the area more attractive and pedestrian friendly. The applicant needs to demonstrate that shared parking is feasible by following the calculation methodologies suggested by the Urban Land Institute or the Institute of Transportation Engineers.

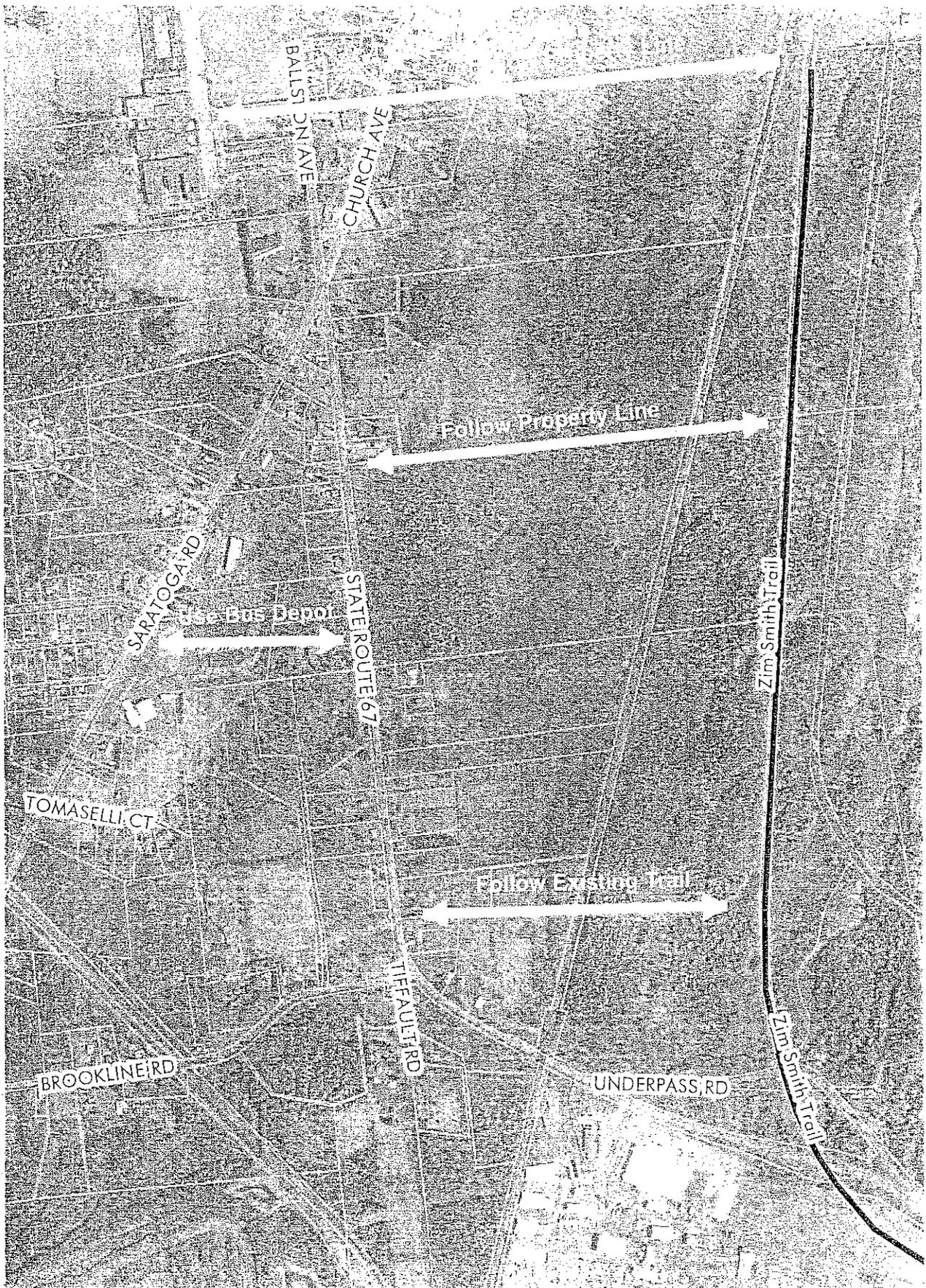
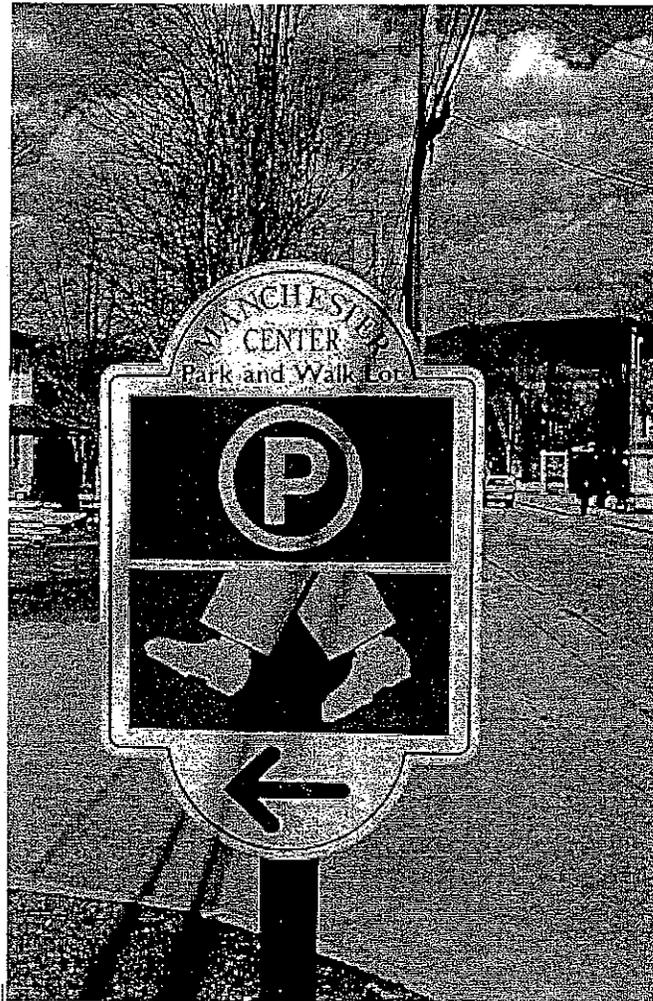


FIGURE 8.1 PROPOSED CONNECTIONS TO ZIM SMITH TRAIL



Figure 8.2 - Park and Walk Sign



The large commercial establishments should also be required to provide bicycle parking in addition to the standard automobile parking. A suggested standard may be 3 bicycle parking spots for every 100 car spots. The bicycle spots should be located at the most convenient places on site. During the winter time the bicycle parking spaces can be used for snow storage.

## 9. Implementing the Improvements

### 9.1 . . Matrix of Improvements

Table 9.1 shows all of the proposed improvements for the Route 67 Corridor, together with order-of-magnitude cost estimates for each improvement. These estimates are 'ballpark' figures which will require detailed engineering analysis to develop more precise estimates. The table also mentions the most logical funding source for each improvement, as well as their linkage to specific developments and their priority.

Short-term projects are those scheduled for the next two to three years, mid-term for the next three to five years and long-term for the years six and beyond. The phasing will depend on the strength of the local economy and the related development pressure and also on the availability of funding at the state and federal levels.

In terms of implementation responsibility there are three basic categories of projects:

1) TIP or State Funded, 2) front door improvements and 3) major off-site mitigation projects, i.e. the parallel service road.

TIP or State Funded are defined as being on State highways, being affected significantly by a high proportion of through traffic and not located at the front doors of major developments. These projects include the improvements of Brookline Road/Rte 50 intersection, the Brookline Road/Rte 67 intersection and the Rte 67/Eastline Road intersection and the provision of consistent five foot shoulders along Rte 67. These are all projects that could not easily be assigned to any other party. Identified projects could be submitted to CDTC by NYSDOT or the municipality as candidates for inclusion in the Transportation Improvement Program (TIP). They are also of a scale that could be considered by NYSDOT for state funding.

Front door improvements are those projects that are required to provide access to major new developments. The two roundabouts proposed at V-Corners can be funded by the development that may occur at the abutting properties. These improvements include the roundabouts as well as the connections between the two roundabouts. The owners of those development parcels should be made aware of these improvements so that they can be incorporated into their plans. The other front-door improvement is related to any future changes in the Curtis Lumber yard or industrial park. Improving access to and from (especially the left-turns out of) the lumber yard becomes critical as traffic volumes along Route 67 and the lumber yard traffic increase.

Several options are proposed for access to the lumber yard and to the connected industrial yard. One is related to the current proposal to rebuild and lower the overpass over the abandoned rail tracks. The overpass is proposed to be replaced with a culvert large enough to permit pedestrians and bicyclists to pass. The first option (A) involves rebuilding the overpass at a height and width that would allow truck traffic underneath (14-foot vertical clearance instead of the current 24-foot clearance). The cost estimate indicated for this project (item #7) in Table 9.1 reflects only the estimate for the incremental costs beyond the costs of the plan that is currently under consideration. All three options for this improvement could become a shared responsibility among NYSDOT and Curtis Lumber/Industrial Yard.

Table 9.1 - Matrix of Improvement Projects

#	Location	Project	Order of Magnitude Cost Estimate	Funding Source	Development Linkage	Phasing
1	Route 50 and Brookline Road intersection	Widen intersection, adding left-turn lanes for the northbound, southbound and westbound	\$150,000	TIP or State	Various	mid-term
2	V-Corners	Southern Roundabout - provides access to undeveloped land to the west and for through traffic	\$400,000	TIP, State or property developer to the west	Adjacent property to the west	short-term
3	V-Corners	Northern Roundabout - provides access for undeveloped land to the east and for through traffic	\$400,000	TIP, State or property developer to the east	Adjacent property to the east	short-term
4	V-Corners	Cross Road Linking Roundabouts	\$300,000	TIP, State or property developer to the east and west	Adjacent development	short-term
5	V-Corners Area	Build a sidewalk network for commercial core	\$100,000	TIP or State/CDTDC/Adjacent Developers/ Others	Adjacent development	short-term
6	East of Route 67 Between Brookline Road and V-Corners	Development of a parallel access/service Road, including sidewalk	\$4,000,000	Property developers of adjacent property	Property developers of adjacent properties	long-term
7	East of Route 67 Between Brookline Road and V-Corners	Zim Smith Trail East-West Connections	\$200,000	TIP or State/CDTDC/Adjacent Developers/ Others	None	mid-term
8	Brookline Road / Route 67	Install Roundabout	\$300,000	TIP or State	None	short-term
9	Curtis Lumber	Option A - Grade Separation - build roadway underneath Route 67 overpass	\$750,000	TIP or State/ Curtis Lumber	Rebuild overpass	mid-term
11	Curtis Lumber	Add new exit at the eastern end of the property	\$100,000	Curtis Lumber	Curtis Lumber	mid-term
12	Curtis Lumber	Option B - Install traffic signal, widen roadway, new eastbound lane, exclusive left turn lane to accommodate signal.	\$500,000	TIP or State / Curtis Lumber	Curtis Lumber	mid-term
13	Curtis Lumber	Build an internal access road that connects with Eastline Road	\$200,000	Curtis Lumber	Curtis Lumber	short-term
14	Eastline Road / Route 67	Install Roundabout	\$400,000	TIP or State	None	mid-term
15	Rhule Road and Route 67 intersection	Prohibit northbound left turns - Install Sign		Town of Malta		mid-term
16	Corridor Wide	Widen Shoulder to a width of 5 feet to accommodate cycling	\$500,000	TIP or State	None	short-term

Short Term - One to Five Years, Mid-Term - Five to Ten Years, Long Term - Beyond Ten Years  
 Order of Magnitude Cost - Rough estimates that will require detailed engineering analysis for more precise estimates.  
 TIP - Transportation Improvement Program  
 Note: Above Estimates do not include Right-Of-Way costs

The Parallel Service Road that is proposed east of Route 67 involves several participants and contributors. The first group includes the larger traffic generators that need this improvement so that the increased traffic flows can be accommodated in the north-south corridor. These are the Wal-Mart and the Widewaters retail projects or the replacement projects proposed on these sites. Other developments may also be included in this group: The second group consists of the land-owners that would benefit from the improved accessibility provided by the new road. A SEQRA-based contribution mechanism is proposed. All new projects in the Route 67/Route 50 corridor between the Village border in the north and Brookline Road in the south should be required to estimate their traffic generation and traffic impacts as part of their application process and pursuant to State Environmental Quality Review requirements. A contribution mechanism should be developed whereby each commercial project will mitigate its traffic impacts by contributing towards the costs of the parallel road in proportion to the amount of traffic generated during the afternoon peak hour. Those developers that will provide the right-of-way for sections of the parallel road would be credited for the value of the right-of-way. The Town would set up a corridor improvement fund that would be the recipient of the mitigation contributions by the developers. The Town may advance funds to the corridor improvement fund to implement this new road at a reasonable pace even if the development slows down. If the funds are not spent within a certain number of years on the corridor improvements, the contributions would revert back to the developers.

Another similar method is CDTC's capacity based approach to public/private financing policy which is documented in "Procedures for Public/Private Highway Financing in the Capital District"<sup>13</sup>. This approach requires each developer to pay a fair share of the cost towards improvements when their project necessitates capacity upgrades. This method has been successfully implemented in the Town of Colonie.

The next step in this process would be a more detailed design of the parallel road and a cost estimation, including the right-of-way costs. A mitigation contribution per pm vehicle trip can then be calculated. The Town can then use that mechanism to fund the needed improvement. The critical elements for this process will be that the mitigation contribution is in proportion to each project's impacts, that all beneficiaries contribute (either funds or right-of-way) and that all contributors benefit from the improvement. Front-door improvements will not count in this mechanism.

## 9.2. - Implementing Town Regulatory Changes

Independent of any zoning changes that the Towns may consider in terms of uses and densities, the Towns (both Ballston and Malta) should consider requiring access management strategies as part of their zoning regulations. The regulations may refer to this study as well as to the Town of Malta's linkage study. The municipalities should consider the following actions for all properties along Route 67 and 50:

- Any subdivision plan must include side streets connecting to the State highway, and no driveways are allowed onto the State highways. The side streets (collectors) must connect as much as possible to other local streets to form a road network that allows flexibility and distributes the traffic loads over several roads. If no connection can be achieved in the short term, the applicant must provide easements for future connections.

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<sup>13</sup> Procedures for Public/Private Highway Financing in the Capital District, Capital District Transportation Committee, September 21, 1989

- All commercial properties along Route 67 and 50 must provide a vehicular connection to adjacent properties to allow vehicles to drive from one to the other without driving onto the State highway. If no connection can be provided in the short term, the applicant must provide an easement for a future connection. When the neighboring property owner comes to the Town for a site plan approval or building approval, the Town can then require the connection. These interconnections may eventually lead to the equivalent of a service road between the commercial properties.
- Property owners along Route 67 and 50 should be encouraged to combine and share their driveways.
- All driveways along Route 67 require a special permit and are allowed on a temporary basis only. If and when an alternate access can be found in the future the driveway would then be discontinued.

The above actions seem restrictive, however, they are required in the long term to maintain a safe and efficient highway. The access limitation off Route 67 will be more than offset by the access improvements from side streets and from adjacent properties. Businesses will benefit from the connections to adjacent properties, since a person in the adjacent property is more likely to patronize the business than the drivers on Route 67. Property owners along similar state highways with higher traffic volumes have learned that there is no other alternative to manage traffic along these arterials, and that eventually the left turns become very difficult anyway.

The access management plan along Route 67 does not require any municipal intervention in the short term, other than adopting the above policies and regulations. It is a long-term action plan requiring diligence and attention on the part of the Planning Boards. Access management gets implemented gradually as new development applications come in front of the Planning Boards.

The regulations should also mention that off-site and shared parking is allowed, but applicants have to obtain the approval by the Town Planning Board. The regulations should mention that the applicant has to submit shared-parking calculations to the Planning Board so that the Board can review the calculations.

## Appendix A – Speed Delay Run Summary

## CDTC Speed Delay Run Summary Route 67 from I-87 SB Ramps to Saratoga Rd (Route 50)

### AM COUNT

18-May-05	Eastbound		
Starting Time	Average Overall Speed	Average Running Speed	Total Stopped Delay*
7:21-7:28	30	36	68
7:36-7:42	33	39	62
7:50-7:56	34	40	49
Average	32	38	60

\* 49 of the total stopped delay occurred at Route 67

18-May-05	Westbound		
Starting Time	Average Overall Speed	Average Running Speed	Total Stopped Delay*
7:14-7:20	33	40	60
7:29-7:35	33	41	70
7:44-7:50	36	39	31
Average	34	40	54

\* 54 of the total stopped delay occurred at Route 67

### PM COUNT

17-May-05	Eastbound		
Starting Time	Average Overall Speed	Average Running Speed	Total Stopped Delay
4:42-4:48	31	35	54
5:00-5:05	38	40	14
5:14-5:21	29	37	80
5:34-5:40	35	38	20
5:49-5:56	28	37	100
Average	32	37	54

\* 54 of the total stopped delay occurred at Route 67

17-May-05	Westbound		
Starting Time	Average Overall Speed	Average Running Speed	Total Stopped Delay
4:34-4:40	24	34	24
4:53-4:58	39	39	0
5:06-5:13	30	37	67
5:26-5:33	30	38	86
5:42-5:48	35	39	39
Average	32	37	43

\* 43 of the total stopped delay occurred at Route 67

## Appendix B – Detailed Traffic Forecasts

Development	Net Traffic Generation	Route 50 & Brookline Road																				Rt. 50 & Brookline			
		Rt. 50 From North				Brookline Road From East				Rt. 50 From South				Brookline Road From West											
		Left	Thru	Right	Right	Left	Thru	Right	Right	Left	Thru	Right	Right	Left	Thru	Right	Right								
2004 Volume	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM			
2010 Volume (1.5%)*	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM			
Outbound %																									
Inbound %																									
2	Wal-Mart	0	0	10%	10%																0	0			
3	Adirondack Trust Co	10	34	10%	10%																1	3			
	Toscana Mobile Home Park	3	7	30%	30%																1	2			
4	Yarlin Ozbay - Gas Station	14	18	20%	20%	10%	10%	10%	10%	20%	20%											4	5		
6	Rolling Brook Meadows	3	10			30%	30%			10%	10%					30%	30%					1	4		
7	Brookline Condo Develop	4	19	10%	10%	30%	30%			10%	10%					30%	30%					2	7		
9	East Line Subdivision	20	89			2%	2%									2%	2%					0	1		
10	Beacon Hill	16	60													10%	10%	60%	60%			11	42		
11	Dunkin Donuts	62	18	10%	10%											10%	10%					6	2		
12	SSP/Tech Park Phase IV	223	58	35%	35%	30%	30%			10%	10%	35%	35%	30%	30%					10%	10%	167	43		
13	Aztech Tech	46	10									10%	10%	35%	35%	30%	30%					10%	10%	34	7
14	SKS Bottling & Office Warehouse	74	14	35%	35%	30%	30%					10%	10%	35%	35%	30%	30%					10%	10%	55	10
15	Widewaters	0	0	20%	20%	10%	10%															0	0		
16	Luther Forest (Phase I)	900	225					1%	1%									1%	1%			9	2		
17	Luther Forest Condos	9	45					1%	1%									1%	1%			0	0		
18	Travers Meadows	26	90													1%	1%					0	1		
20	Kelch Apts	12	51					1%	1%									1%	1%			0	1		
21	Malta Farm Residential	4	18					5%	5%									5%	5%			0	1		
22	Park Place	169	298					1%	1%									1%	1%			2	3		
23	Blessed John Cemetery	12	25					5%	5%									5%	5%			1	1		
2010 Build Volume																									
% Increase over 2010																									
No Build																									

\*CDTC Estimates 0.5% background growth - 1.5% is a conservative estimate



Development	Brookline & Rt. 67																	Bookline & Rt. 67				
	Net Traffic Generation		Rt. 67 From North						Rt. 67 From South						C.R. 60 Brookline Rd. From West			AM	PM			
	AM	PM	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	AM	PM						
	2004 Volume		NA	NA	483	421	3	7	209	385	270	507	0	0	7	4	NA	NA	368	220	1340	1544
	2010 Volume (1.5%)		NA	NA	528	460	3	8	229	421	295	554	0	0	8	4	NA	NA	402	241	1465	1688
2	Wai-Mart	Inbound %	0	0															0	0		
		Outbound %	0	0															0	0		
3	Adirondack Trust Co	Inbound %																				
		Outbound %	10	34															3	10		
		Inbound %	7	34															2	10		
	Toscana Mobile Home Park	Inbound %																				
		Outbound %	3																2	4		
4		Inbound %	12	4															7	3		
		Outbound %																				
5	Yarfin Ozbay Gas Station	Inbound %																				
		Outbound %	14	18															4	5		
		Inbound %	14	18															4	5		
6	Rolling Brook Meadows	Inbound %																				
		Outbound %	3	10															2	6		
		Inbound %	9	16															5	4		
7	Brookline Condo Develop	Inbound %																				
		Outbound %	4	19															3	11		
		Inbound %	20	8															12	6		
9	East Line Subdivision	Inbound %																				
		Outbound %	20	69															2	7		
		Inbound %	61	41															6	4		
10	Beacon Hill	Inbound %																				
		Outbound %	16	60															10	36		
		Inbound %	54	34															33	20		
11	Dunkin Donuts	Inbound %																				
		Outbound %	62	18															19	5		
		Inbound %	48	21															14	7		
12	SSP/Tech Park Phase IV	Inbound %																				
		Outbound %	223	56															67	17		
		Inbound %	50	215															15	65		
13	Aztech Tech	Inbound %																				
		Outbound %	46	10															14	3		
		Inbound %	7	47															2	14		
14	SKS Bottling & Office/Warehouse	Inbound %																				
		Outbound %	74	4															22	4		
		Inbound %	9	80															3	24		
15	Widewaters	Inbound %																				
		Outbound %	0	0															0	0		
		Inbound %	0	0															0	0		
16	Luther Forest (Phase I)	Inbound %																				
		Outbound %	900	225															81	20		
		Inbound %	180	900															16	81		
17	Luther Forest Condos	Inbound %																				
		Outbound %	9	45															1	4		
		Inbound %	48	22															4	2		
18	Travers Meadows	Inbound %																				
		Outbound %	26	90															3	9		
		Inbound %	62	52															8	5		
20	Keich Apts	Inbound %																				
		Outbound %	12	51															1	5		
		Inbound %	48	27															5	3		
21	Malts Farm Residential	Inbound %																				
		Outbound %	4	16															1	4		
		Inbound %	20	8															4	2		
22	Park Place	Inbound %																				
		Outbound %	169	298															17	30		
		Inbound %	158	339															16	34		
23	Blessed John Cemetery	Inbound %																				
		Outbound %	12	28															2	6		
		Inbound %	5	96															1	11		
	2010 Build Volume		NA	NA	651	558	3	8	358	521	375	703	0	0	8	4	NA	NA	490	390	1876	2174
	% Increase over 2010		NA	NA	23%	21%	0%	0%	57%	24%	27%	27%	NA	NA	0%	0%	NA	NA	22%	62%	28%	29%
	No Build																					

\*CDTC Estimates 0.5% background.

**Curtis Lumber & RL 67**

Development	Net Traffic Generation	Rt. 67												Curtis Lumber From South				Rt. 67 From West				Curtis Lmbr & RL 67	
		From East						From South						From West									
		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		AM	PM		
2010 Volume (1.5%)*		62	52	798	667	NA	NA	34	53	NA	NA	47	81	NA	NA	463	739	52	30	1451	1618		
Inbound %				30%	30%											30%	30%						
Outbound %																							
2 Wal-Mart		0	0																	0	0		
Inbound %		0	0																	0	0		
Outbound %																							
3 Adirondack Trust Co		10	34																	3	10		
Inbound %		7	34																	2	10		
Outbound %																							
4 Toscana Mobile Home Park		3	7																	2	4		
Inbound %		12	4																	7	3		
Outbound %																							
5 Yarin Ozbay Gas Station		14	18																	4	5		
Inbound %		14	18																	4	5		
Outbound %																							
6 Rolling Brook Meadows		3	0																	2	6		
Inbound %		9	6																	5	4		
Outbound %																							
7 Brookline Condo Develop		4	19																	3	11		
Inbound %		20	9																	12	6		
Outbound %																							
9 East Line Subdivision		20	89																	7	7		
Inbound %		61	41																	6	4		
Outbound %																							
10 Beacon Hill		16	60																	10	36		
Inbound %		54	34																	33	20		
Outbound %																							
11 Dunkin Donuts		62	18																	19	5		
Inbound %		48	23																	14	7		
Outbound %																							
12 SSP/Tech Park Phase IV		223	58																	67	17		
Inbound %		50	715																	15	65		
Outbound %																							
13 Aztech Tech		46	10																	14	3		
Inbound %		7	17																	2	14		
Outbound %																							
14 SKS Bottling & Office Warehouse		74	14																	22	4		
Inbound %		9	80																	3	24		
Outbound %																							
15 Widewaters		0	0																	0	0		
Inbound %		0	0																	0	0		
Outbound %																							
16 Luther Forest (Phase I)		900	225																	20	20		
Inbound %		180	900																	16	81		
Outbound %																							
17 Luther Forest Condos		9	45																	4	4		
Inbound %		48	22																	4	2		
Outbound %																							
18 Travers Meadows		26	90																	9	9		
Inbound %		62	52																	8	5		
Outbound %																							
20 Keich Apts		12	51																	5	5		
Inbound %		48	27																	5	3		
Outbound %																							
21 Malta Farm Residential		4	18																	4	4		
Inbound %		20	9																	4	2		
Outbound %																							
22 Park Place		169	236																	30	30		
Inbound %		158	339																	16	34		
Outbound %																							
23 Blessed John Cemetery		12	26																	6	6		
Inbound %		5	56																	1	11		
Outbound %																							
2010 Build Volume		63	53	1081	978	NA	NA	37	58	NA	NA	51	89	0	0	693	1054	57	34	1873	2255		
% Increase over 2010				2%	0%	24%	34%	NA	NA	0%	0%	NA	NA	0%	0%	NA	NA	37%	30%	0%	3%	24%	27%
No Build																							

\*CDTC Estimates 0.5% background

Development		Eastline Rd. & Rt. 67																				Eastline & Rt. 67						
		Eastline From North						Rt. 67 From East						C.R. 82 (Eastline Rd.) From South						Rt. 67 From West								
		Net Traffic Generation		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right										
AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM											
2004 Volume		127	40	98	50	25	13	84	118	481	654	23	96	99	127	19	102	186	111	4	19	721	597	68	115	1935	2045	
2010 Volume (1.5%*)		139	44	107	54	27	15	92	129	526	715	25	107	108	139	20	112	203	121	5	20	788	653	74	125	2115	2235	
2010 Build Volume																												
% Increase over 2010																												
No Build																												
2010 Build Volume		139	44	108	58	27	15	96	143	724	956	25	107	119	147	24	114	216	129	5	20	993	888	80	136	2545	2748	
% Increase over 2010																												
No Build																												
2010 Build Volume																												
% Increase over 2010																												
No Build																												

\*CDTC Estimates 0.5% background.

Table R-2 & R-67

Development	Net Traffic Generation	Rt. 67												Ruhle Rd. & Rt. 67							
		From East						From South						From West							
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right					
2004 Volume		5	15	532	859	NA	NA	5	7	NA	NA	17	17	NA	NA	892	718	8	14	1459	1630
2010 Volume (1.5%)		5	16	582	939	NA	NA	5	8	NA	NA	19	19	NA	NA	975	785	9	15	1595	1782
Inbound %				25%	25%											25%	25%				
Outbound %																					
2 Wal-Mart		0	0																	0	0
Inbound %		0	0																	0	0
Outbound %																					
3 Adirondack Trust Co		10	34													25%	25%			3	9
Inbound %		7	34																	2	9
Outbound %																					
Tescana Mobile Home Park		3	7													60%	60%			2	4
Inbound %		12	4																	7	3
Outbound %																					
5 Yarin Ozbay - Gas Station		14	18													25%	25%			3	5
Inbound %		14	18																	3	5
Outbound %																					
6 Rolling Brook Meadows		3	10													60%	60%			2	6
Inbound %		9	6																	5	4
Outbound %																					
7 Brookline Condo Develop		4	19													60%	60%			3	11
Inbound %		20	9																	12	6
Outbound %																					
9 East Line Subdivision		20	69													10%	10%			7	7
Inbound %		61	41																	6	4
Outbound %																					
10 Beacon Hill		16	60													60%	60%			10	36
Inbound %		54	34																	33	20
Outbound %																					
11 Dunkin Donuts		62	18													25%	25%			16	5
Inbound %		48	23																	12	6
Outbound %																					
12 SSP/Tech Park Phase IV		223	58													30%	30%			67	17
Inbound %		50	715																	15	65
Outbound %																					
13 Aztech Tech		46	10													28%	28%			13	3
Inbound %		7	47																	2	13
Outbound %																					
14 SKS Bottling & Office/Warehouse		74	14													30%	30%			22	4
Inbound %		9	80																	3	24
Outbound %																					
15 Widewaters		0	0													25%	25%			0	0
Inbound %		0	0																	0	0
Outbound %																					
16 Luther Forest (Phase I)		900	225													9%	9%			20	20
Inbound %		180	900																	16	81
Outbound %																					
17 Luther Forest Condos		9	45													9%	9%			4	4
Inbound %		48	22																	4	2
Outbound %																					
18 Travers Meadows		26	90													10%	10%			9	9
Inbound %		62	52																	8	5
Outbound %																					
20 Keich Apts		12	51													10%	10%			5	5
Inbound %		48	27																	5	3
Outbound %																					
21 Malta Farm Residential		4	18													20%	20%			4	4
Inbound %		20	3																	4	2
Outbound %																					
22 Park Place		159	298													10%	10%			30	30
Inbound %		158	338																	16	34
Outbound %																					
23 Blessed John Cemetery		12	28													20%	20%			6	6
Inbound %		5	56																	1	11
Outbound %																					
2010 Build Volume				5	16	786	1184	NA	NA	5	8	NA	NA	19	19	0	0	1158	1027	9	15
% Increase over 2010				0%	0%	35%	26%	NA	NA	0%	0%	NA	NA	0%	0%	NA	NA	19%	31%	0%	0%
No Build																				24%	27%

\*CDTC Estimates 0.5% background

Development	Net Traffic Generation	I-87 Southbound Exit Ramp & Rt. 67																				I-87 SB & Rt. 67											
		I-87 Southbound Exit Ramp From North								Rt. 67 From East				I-87 SB Entrance Ramp - From South									Rt. 67 From West										
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right												
	2004 Volume	148	124	1	0	420	120	428	225	608	700	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	356	812	528	298	2492	2281	
	2010 Volume (1.5%)	162	135	1	0	480	132	468	246	664	765	1	1	0	0	0	0	0	0	0	0	0	0	1	1	389	888	577	326	2724	2494		
	Inbound %					10%	10%			15%	15%																15%	15%	10%	10%			
2	Wal-Mart	0	0																												0	0	
	Outbound %	0	0																												0	0	
3	Adirondack Trust Co	10	34																											3	9		
	Inbound %	7	34			10%	10%			50%	50%																			2	9		
	Outbound %																																
4	Toscana Mobile Home Park	3	7																											2	4		
	Inbound %	12	4			10%	10%			15%	15%																			7	3		
	Outbound %																																
5	Yarlin Ozbay Gas Station	14	18																											3	5		
	Inbound %	14	18			10%	10%			50%	50%																			3	5		
	Outbound %																																
6	Rolling Brook Meadows	3	10																											2	6		
	Inbound %	9	6			10%	10%			50%	50%																			5	4		
	Outbound %																																
7	Brookline Condo Develop	4	19																											3	11		
	Inbound %	20	9			10%	10%			10%	10%																			12	6		
	Outbound %																																
9	East Line Subdivision	20	69																											4	14		
	Inbound %	61	41			10%	10%			50%	50%																			12	8		
	Outbound %																																
10	Beacon Hill	16	60																											10	36		
	Inbound %	54	34			10%	10%			15%	15%																			33	20		
	Outbound %																																
11	Dunkin Donuts	62	18																											16	5		
	Inbound %	48	23			10%	10%			20%	20%																			12	6		
	Outbound %																																
12	SSP/Tech Park Phase IV	223	58																											67	17		
	Inbound %	50	15			10%	10%			18%	18%																			15	65		
	Outbound %																																
13	Aztech Tech	46	10																											13	3		
	Inbound %	7	47			10%	10%			20%	20%																			2	13		
	Outbound %																																
14	SKS Bottling & Office Warehouse	74	14																											22	4		
	Inbound %	9	80			10%	10%			15%	15%																			3	24		
	Outbound %																																
15	Widewaters	0	0																											0	0		
	Inbound %	0	0			20%	20%																							0	0		
	Outbound %																																
16	Luther Forest (Phase I)	900	225																											261	65		
	Inbound %	180	900			20%	20%			9%	9%																			16	81		
	Outbound %																																
17	Luther Forest Condos	9	45																											3	13		
	Inbound %	46	22			25%	25%																							4	2		
	Outbound %																																
18	Travers Meadows	26	80																											9	32		
	Inbound %	82	52			25%	25%			25%	25%	10%	10%																	29	18		
	Outbound %																																
20	Kelch Apts	12	51																											4	18		
	Inbound %	48	27			35%	35%			45%	45%																			17	10		
	Outbound %																																
21	Malta Farm Residential	4	16																											3	14		
	Inbound %	20				25%	25%																							16	7		
	Outbound %																																
22	Park Place	109	298																											59	104		
	Inbound %	158	338			35%	35%			45%	45%																			55	119		
	Outbound %																																
23	Blessed John Cemetery	12	28																											10	22		
	Inbound %	5	56																											4	45		
	Outbound %																																
	2010 Build Volume	399	302	1	0	513	178	541	351	821	996	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	% Increase over 2010	No Build				146%	123%	0%	NA	12%	36%	16%	43%	24%	30%	0%	0%	NA	NA	NA	NA	NA	NA	NA	NA	0%	0%	43%	20%	11%	32%	27%	33%

\*CDTC Estimates 0.5% background.

Development		I-87 Northbound Exit Ramps & Rt. 67																				I-87 NB & Rt. 67																	
		I-87 Northbound Exit Ramp								Rt. 67				I-87 Northbound Entrance Ramp -																									
		From North				From East				From South				From West																									
Net Traffic Generation		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM																
2004 Volume		0	0	0	0	0	0	0	0	761	536	110	206	247	337	0	0	141	523	133	338	377	573	0	0	1770	2512												
2010 Volume (1.5%)*		0	0	0	0	0	0	0	0	833	586	120	226	270	368	0	0	154	571	148	369	413	627	0	0	1935	2747												
Inbound %										5%	5%					10%	10%																						
Outbound %																		10%	10%	5%	5%																		
2	Wal-Mart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
Inbound %																						0	0																
Outbound %																						0	0																
3	Adirondaek Trust Co	10	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5													
Inbound %																		10%	10%	5%	5%																		
Outbound %																						1	5																
4	Toscana Mobile Home Park	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3													
Inbound %										5%	5%					10%	10%																						
Outbound %																						2	1																
5	Yarlin Ozbay Gas Station	14	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3													
Inbound %																		10%	10%	5%	5%																		
Outbound %																						2	3																
6	Rolling Brook Meadows	3	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4													
Inbound %																		10%	10%	10%	10%																		
Outbound %																						2	1																
7	Brookline Condo Develop	4	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7													
Inbound %										10%	10%									10%	10%	10%	10%																
Outbound %																						4	2																
9	East Line Subdivision	20	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7													
Inbound %																		10%	10%	10%	10%																		
Outbound %																						12	8																
10	Beacon Hill	16	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	24													
Inbound %										5%	5%					10%	10%																						
Outbound %																						11	7																
11	Dunkin Donuts	62	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	3													
Inbound %										5%	5%					15%	15%																						
Outbound %																						7	3																
12	SSP/Tech Park Phase IV	223	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	12													
Inbound %										4%	4%					14%	14%																						
Outbound %																						7	32																
13	Aztech Tech	46	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2													
Inbound %										5%	5%					15%	15%																						
Outbound %																						1	7																
14	SKS Bottling & Office Warehouse	74	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	3													
Inbound %										5%	5%					10%	10%																						
Outbound %																						1	12																
15	Widewaters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
Inbound %																		10%	10%	5%	5%																		
Outbound %																						0	0																
16	Luther Forest (Phase I)	900	225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261	65													
Inbound %										9%	9%	20%	20%									29%	29%																
Outbound %																						52	261																
17	Luther Forest Condos	9	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13													
Inbound %										9%	9%	20%	20%									25%	25%	35%	35%														
Outbound %																						14	6																
18	Travers Meadows	26	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	54													
Inbound %										35%	35%	25%	25%									25%	25%	35%	35%														
Outbound %																						49	31																
20	Keich Apts	12	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	31													
Inbound %										35%	35%	25%	25%									25%	25%	35%	35%														
Outbound %																						29	16																
21	Malta Farm Residential	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8													
Inbound %										10%	10%					35%	35%																						
Outbound %																						9	4																
22	Park Place	169	298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	179													
Inbound %										35%	35%	25%	25%									35%	35%	10%	10%														
Outbound %																						95	204																
23	Blessed John Cemetery	12	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	13													
Inbound %										10%	10%					35%	35%																						
Outbound %																						2	26																
2010 Build Volume		0	0	0	0	0	0	0	0	979	836	239	516	349	444	0	0	206	681	184	443	774	895	0	0	2725	3809												
% Increase over 2010		No Build																				18%	43%	99%	129%	29%	21%	NA	NA	34%	19%	26%	20%	87%	43%	NA	NA	41%	39%

\*CDTC Estimates 0.5% background