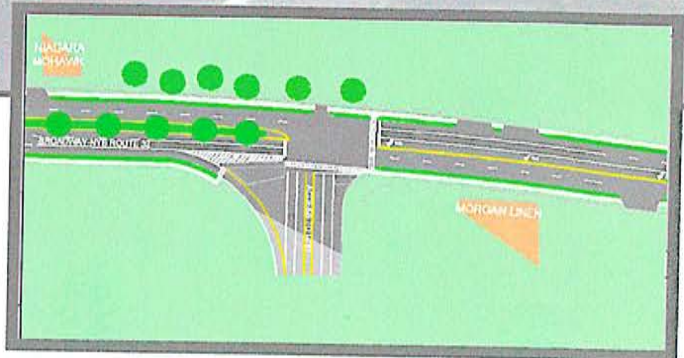
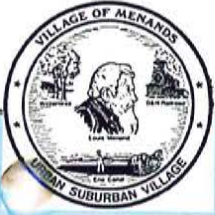


# Broadway Transportation Study



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Project #01-030d

February 2002

**Broadway Transportation Study**

**Village of Menands, New York**

CME Project 01-030d

Prepared for:

NYS DOT Region 1 and  
the Village of Menands

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## Executive Summary

The purpose of this study was to examine the existing transportation system and future transportation needs in the Broadway corridor (NYS Route 32), in the Village of Menands, and to identify the Village's long-term vision for transportation enhancements throughout the corridor.

For the majority of the corridor, Broadway is a four-lane arterial providing two travel lanes in each direction. In some areas the roadway is wider, such as in the vicinity of the I-787 interchange where a seven-lane cross section is provided.

Daily traffic volumes along the corridor have not changed significantly over the past 30 years. During calendar year 1972, the daily traffic volumes in the central portion of the corridor measured 10,200 vehicles per day (VPD). Today, the volumes in that segment are 11,400 VPD. This negligible growth occurred while I-787 increased from 18,400 VPD to 82,300 VPD.

The generous roadway width and relatively low traffic volumes provide an opportunity to reduce the number of travel lanes in the corridor, and still provide adequate traffic operations into the foreseeable future. A three-lane cross section providing a single travel lane in each direction plus a two-way continuous left turn lane, could replace the existing four-lane cross section in the central portion of the corridor. Similarly, the area in the vicinity of I-787 could be reduced from seven lanes to five. Additional lane reductions are also possible.

This roadway narrowing would have several benefits. It will create additional space for roadside enhancements such as a maintenance strip for snow storage, and curb bump-outs for bus stops, and/or bus shelters. It will improve bicycle and pedestrian accommodations, add green space, and improve landscaping and lighting opportunities. In addition to the roadside treatments, access management improvements could be progressed to improve traffic operations throughout the corridor, including raised medians, driveway consolidation, channelization, and shared access.

This study also analyzes several options for improving access to the Menands/Capital Regional Market located in the southeast quadrant of the Route 32/Route 378 interchange. One of the concepts involves the removal of several interchange ramps, and the construction of a new commercial access road opposite the Route 378 eastbound off ramp.

While this study presents long-term ideas for improvements throughout the corridor, it may be possible to pursue some of the concepts within existing projects currently planned or programmed by the Department. It is understood that this document will be referenced by the Village and the NYSDOT as part of future project initiation.



# Chapter I

## Introduction/Project Summary

The New York State Department of Transportation (NYSDOT) has programmed a project to resurface NY Route 32 (Broadway) in the Village of Menands (PIN 1460.40). While this project is tentatively scheduled to be constructed in Spring 2007, design work has not begun yet. Therefore, NYSDOT funded this Broadway Transportation Study to determine 1) if the corridor's traffic operations needs could be met by reducing the number of travel lanes, and 2) how best to address Village concerns such as available sidewalks, snow storage, streetscape, etc. The purpose of the study is to address highway transportation through the corridor to include the following:

- An assessment of current traffic operations and access in the Route 32 corridor,
- An analysis of future traffic operations and access in the corridor,
- And, identification and analysis of alternative cross-sections/intersection geometry to satisfy forecast traffic operations and access needs.

In order to achieve the project objectives, eleven (11) locations along the corridor were studied including eight (8) signalized intersections, two (2) unsignalized intersections, and one (1) weaving area. These analysis locations are listed below:

- Route 32/North Pearl Street/Wolfert Avenue (unsignalized)
- Route 32/Broadway
- Route 32/Wards Lane
- Route 32/I-787 Access Ramps
- Route 32/Brookside Avenue
- Route 32/Menands Road/Market Road
- Route 32/Route 378 Westbound Off-Ramp
- Route 32/Route 378 Eastbound Off-Ramp (unsignalized)
- Route 32/Route 378 Northbound Weave
- Route 32/Plaza Access Road/British America Parking Lot
- Route 32/First Street/Schuyler Lane

Corridor operations were analyzed for the existing year 2001 conditions and a 24-year forecast condition. Other components of the traffic analysis include an analysis of the capacity of the corridor, access management, and an accident analysis.

The study presents several alternatives outlining design concepts to meet the future traffic needs of the corridor.

This Report is formatted similar to the NYSDOT Expanded Project Proposal (EPP) outline to facilitate a future highway project for the corridor.

## Chapter II

### Project Identification, Evolution, Conditions and Needs, and Objectives

#### A. Project Identification/Location

Route 32 is a north/south arterial that begins at the junction of Route 6 and Route 17 in Orange County and extends north to the junction of Route 196 in Washington County. Route 32 in the Village of Menands is a four-lane urban minor arterial. The project corridor begins approximately at Reference Marker 32 1104 3000 at the Albany City Line and ends at Reference Marker 32 1104 3023 at the City of Watervliet Line, a distance of approximately 4.0 kilometers (2.5 miles).

One bridge is located within the project limits serving Canadian Pacific Railroad (CP Rail) traffic under Route 32. This bridge is currently planned for replacement by NYSDOT (PIN 1460.37) in Spring 2003.

Figure II-1 shows the project location in relation to New York State. Figures II-2 and II-3 illustrate a more detailed look at the project corridor within Albany County.

#### B. Project Evolution

Based on historical information contained in NYSDOT's *Traffic Volume Reports* during calendar year 1972, the Average Annual Daily Traffic (AADT) on Route 32 was 10,200 vehicles per day (VPD) on the section of Route 32 south of Route 378, and 16,400 VPD on the section north of Route 378. The latest available published data indicates that during 1999, the AADT on Route 32 was 11,400 VPD south of Route 378 and 15,900 VPD north of Route 378 in the project corridor. The above historical data shows that the average annual traffic volumes on Route 32 have been essentially level over the past 30 years. It is believed that the negligible change in traffic experienced on Route 32 can be attributed to the development of Interstate 787 (I-787) which is the principal arterial providing north/south access in Albany County from the City of Albany north to Route 7 in Cohoes. The AADT volumes on I-787 have grown in the area adjacent to the project corridor from 18,400 VPD during 1972 to 82,300 VPD during 1999, an average annual growth rate of approximately 6 percent per year. Based on this information, it appears that much of the traffic growth originally expected to be served by the four-lane Route 32 is now being served by the Interstate, and there is the perception that the corridor could be narrowed and could continue to provide adequate traffic operations into the future. Based on the above concerns, the scope of this study was developed for the Village of Menands to create a long-term vision for the Broadway corridor.





MAP OF THE  
STATE OF NEW YORK

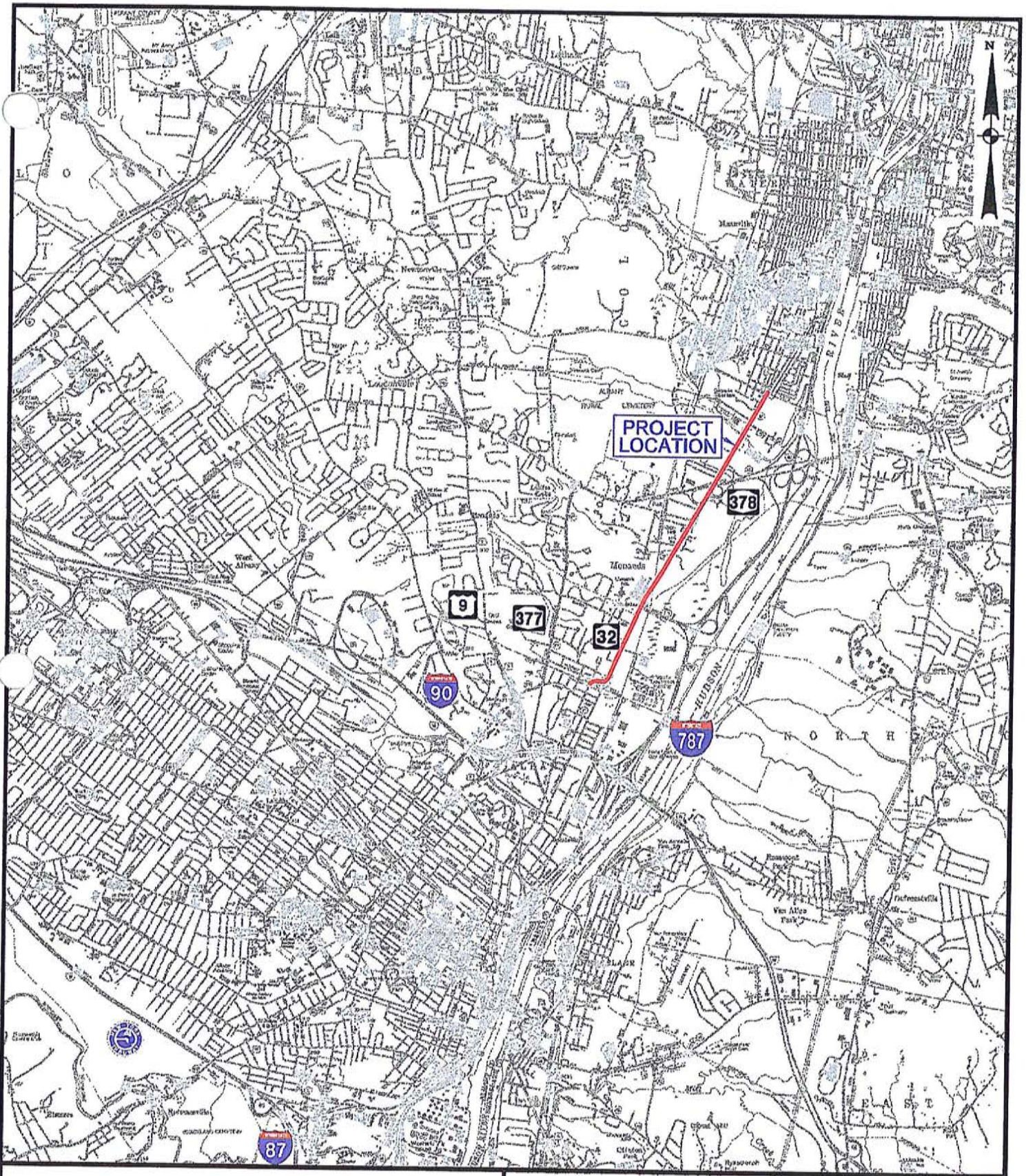
**FIGURE II-1  
STUDY AREA LOCATION MAP**

**BROADWAY TRANSPORTATION STUDY  
VILLAGE OF MENANDS  
TOWN OF COLONIE, NEW YORK**



PROJECT: 01-030	SCALE: N.T.S.	DATE: 02/2002
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**FIGURE II-2  
REGIONAL LOCATION MAP**

**BROADWAY TRANSPORTATION STUDY  
VILLAGE OF MENANDS  
TOWN OF COLONIE, NEW YORK**

**CME**  
CREIGHTON MANNING ENGINEERING, LLP  
4 AUTOMATION LANE, ALBANY, NY 12205

PROJECT: 01-030	SCALE: N.T.S.	DATE: 02/2002
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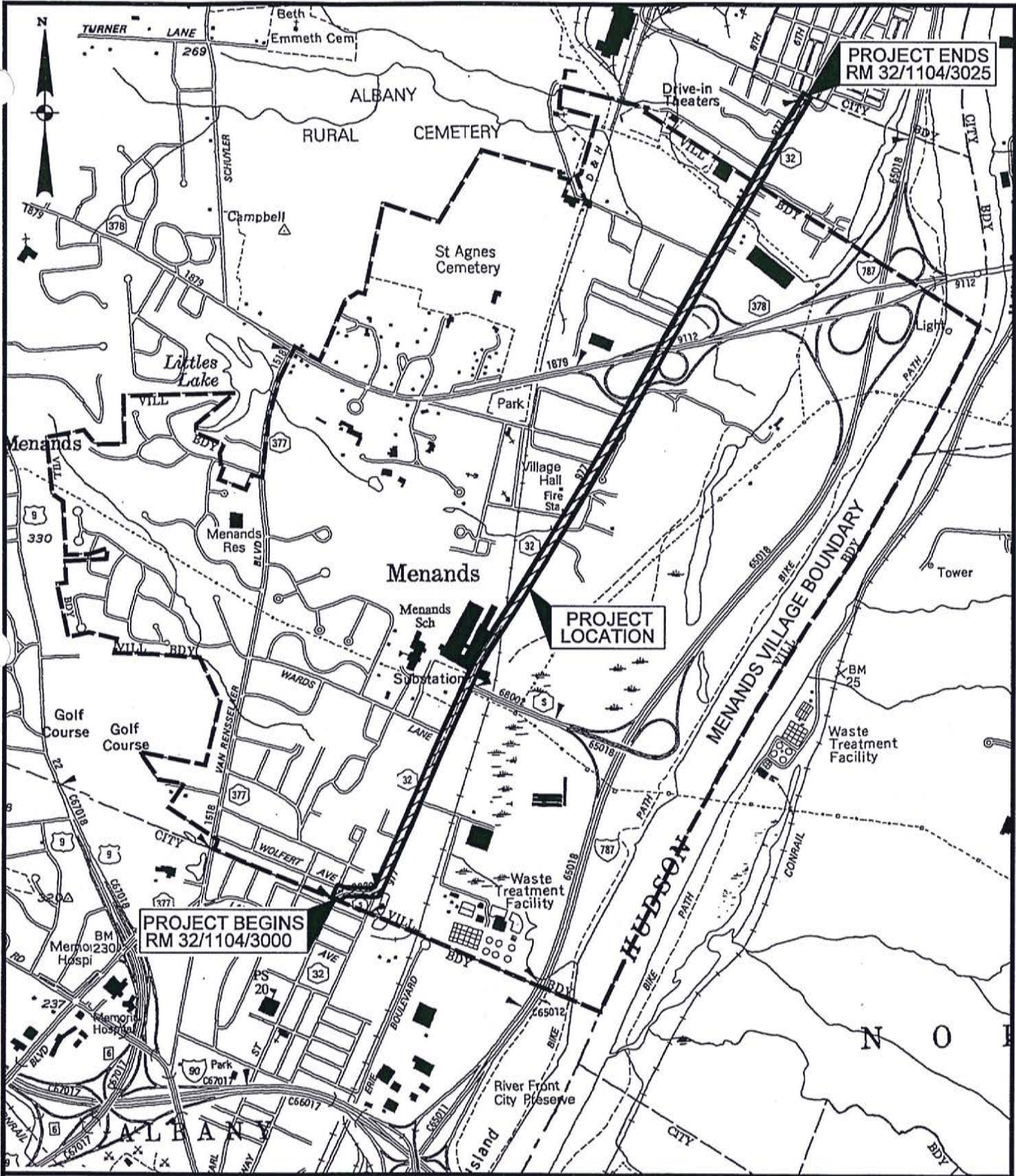


FIGURE II-3  
PROJECT LOCATION MAP  
ROUTE 32/ S.H. 977

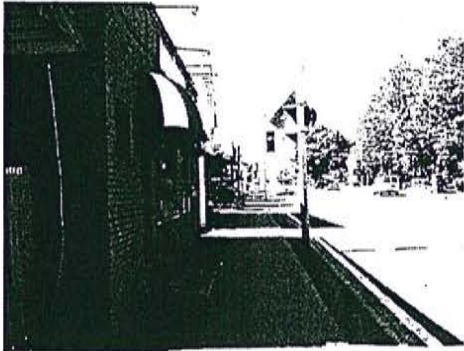
BROADWAY TRANSPORTATION STUDY  
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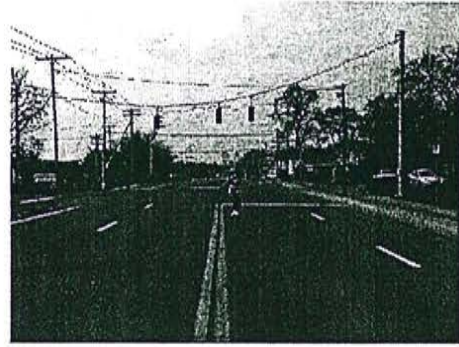
There are several other concerns that have been brought about by members of the Village through the years regarding the operation of Broadway. Concerns have been raised regarding the lack of snow storage, where buildings are located close to the edge of the roadway and sidewalks. One area this occurs is in the vicinity of the fire station (south of Route 378), as shown in Figure II-4 below. There is also concern regarding the number of curb cuts located along the east and west sides of Route 32 and the potential to initiate access management improvements (see Figure II-5 below). Pedestrian and bicycle access through the corridor is also an issue, including the lack of a connection to the Mohawk/Hudson bike path along the Hudson River just east of Route 32 (see Figure II-6 below).



**Figure II-4**  
**Lack of Snow Storage**



**Figure II-5**  
**Numerous Curb Cuts on**  
**Parcels**



**Figure II-6**  
**Pedestrian Access Issues**

## **C. Conditions and Needs**

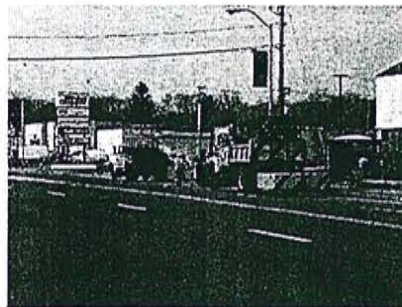
### **1. Transportation Conditions and Engineering Considerations**

#### **a. Functional Classification and Federal-Aid System**

Route 32 in the Village of Menands is functionally classified as an Urban Minor Arterial. This section of Route 32 is also designated as State Highway 977. Route 32 is a Non-National Highway System highway.

#### **b. Ownership and Maintenance Jurisdiction**

Route 32 is owned by the State of New York and maintained by the New York State Department of Transportation (NYSDOT).



**Figure II-7**  
**NYSDOT Maintenance**



**c. Culture, Terrain, and Climatic Conditions**

Route 32 within the limits of the Village of Menands is highly developed with many industrial and commercial establishments with small sections of residential homes scattered throughout the corridor.

The terrain is generally level along Route 32.

There are no unusual climate conditions in the project area that would affect project design.

**d. Control of Access**

Access to this section of Route 32 is uncontrolled. There are 8 signalized intersections in the project corridor, 12 unsignalized intersecting roads, and 7 unsignalized ramp intersections. There are approximately 99 driveways to commercial/industrial business parcels and 26 driveways to residential homes in the project corridor.

Commercial/industrial curb cuts total 99, whereas the total number of commercial/industrial parcels is 76. This averages to approximately 1.3 curb cuts per parcel in addition to the numerous residential curb cuts and intersecting streets. The high number of curb cuts and intersecting roads in the corridor demonstrates the potential for access management improvements to reduce the number of conflicting movements along Route 32. As an example, the Price Chopper parcel has three (3) unsignalized driveways, located just north of the Route 378 westbound ramp signalized intersection (See Figure II-8).



**Figure II-8**  
**Price Chopper Plaza Access Management Opportunity**

Although access along Route 32 is uncontrolled, access to the controlled access north/south highway of I-787 is provided via a signalized intersection north of Wards Lane. Access to the partially controlled access arterial, Route 378, is also provided to/from Route 32 with a modified cloverleaf ramp system. Route 378 east of the Route 32 corridor also provides access to I-787.



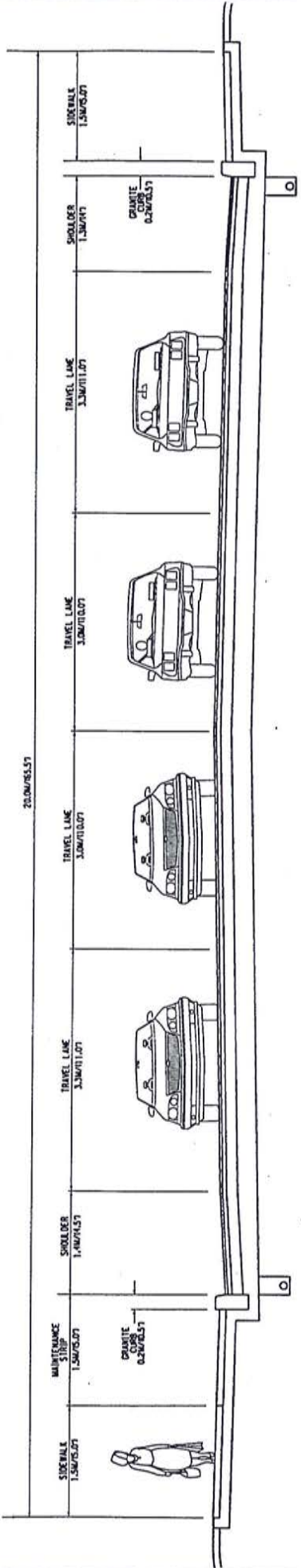
**e. Existing Highway Sections**

Route 32 in the project corridor generally consists of two (2) travel lanes in each direction varying in widths between 3.2 and 3.8 meters (10 to 12.5 feet). The existing typical sections vary within the project corridor. In general, the typical section from Wolfert Avenue to Menands Road consists of four (4) travel lanes varying in width from 3.0 to 3.3 meters (10 to 11 feet) with 1.3 to 1.4 meter (4 to 4.5 feet) shoulders and curbs on both sides of the roadway. The east side of Route 32 has an approximate 1.3 meter (4-foot) grass area and a 1.5 meter (5-foot) sidewalks. The west side of Route 32 has a 1.5 meter (5-foot) sidewalk adjacent to the curb. The second typical section from Menands Road to First Street consists of four (4) travel lanes varying in width from 3.0 to 3.3 meters (10 to 11 feet). The east side of Route 32 consists of a 3.0 meter (10-foot) shoulder adjacent to the travel way. The west side of Route 32 consists of a 0.3 meter (1-foot) shoulder and curbing with a 1.5 meter (5-foot) grass area and a 1.1 meter (3.5-foot) dirt path with some areas of sidewalk. These typical sections are illustrated on Figure II-9. It should be noted that these typical sections do not reflect the specific cross-sections in the vicinity of the I-787 and Route 378 interchanges.

There are eleven analysis locations in the project corridor that were studied as part of this project, consisting of eight signalized intersections, two unsignalized intersections, and one weaving area. The study area intersections are outlined below. Figure II-10 summarizes the geometry at each of the intersections and provides details on the traffic control.



**EXISTING TYPICAL SECTION**  
**WOLFERT AVENUE TO MENANDS/ MARKET ROAD**



**EXISTING TYPICAL SECTION**  
**NYS RT 378 WB RAMP TO 1ST ST/ 3RD AVE/ SCHUYLER LN**

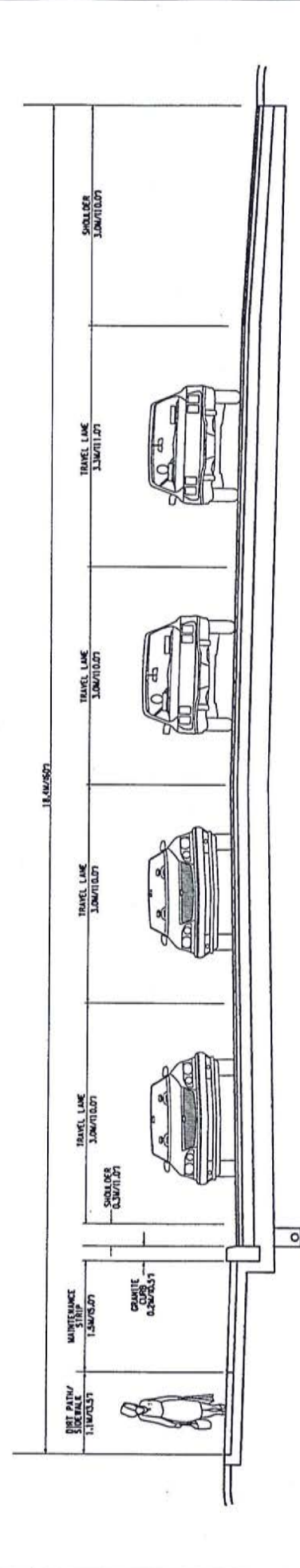
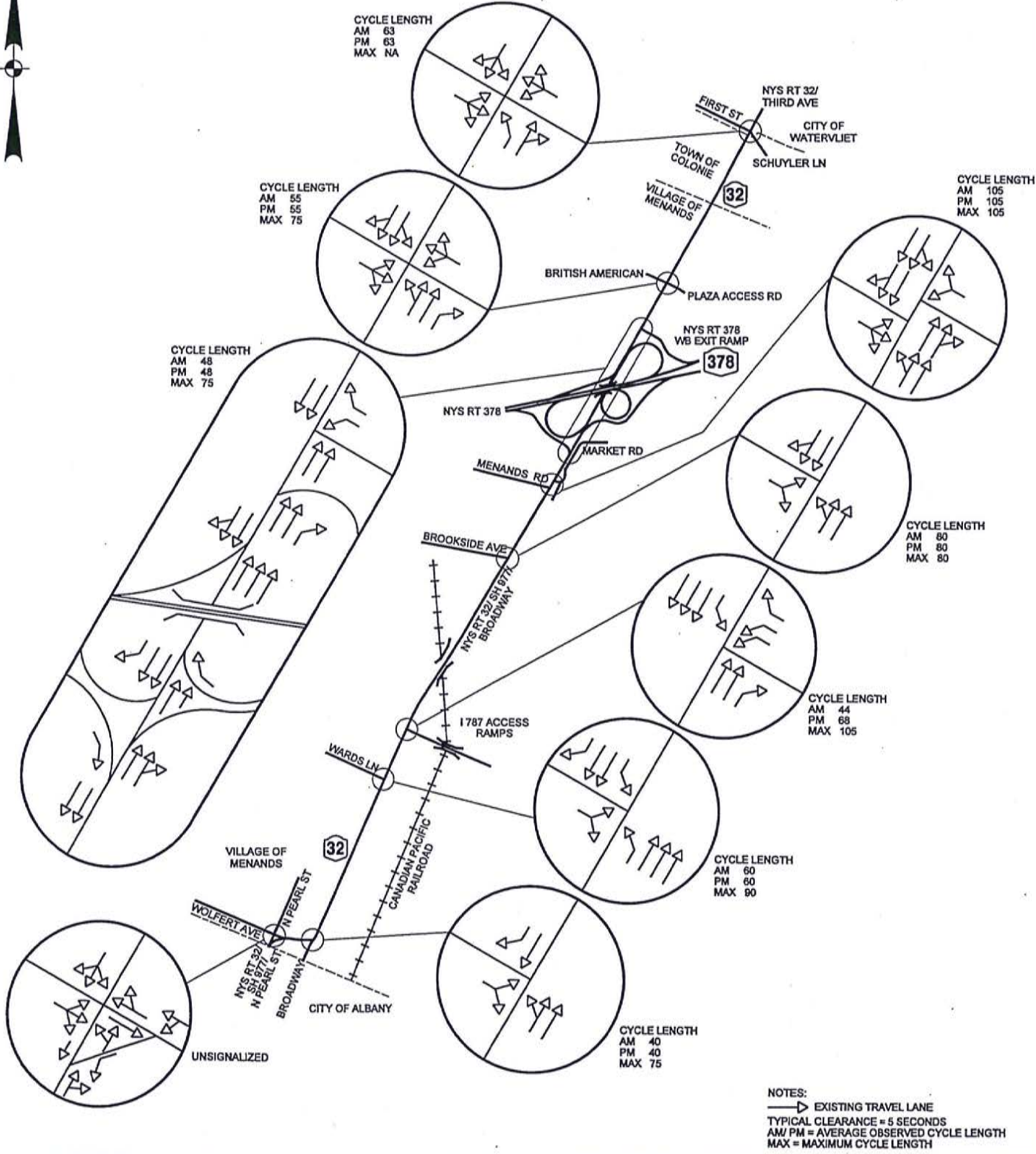


FIGURE II-9





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NOTES:  
 —▷ EXISTING TRAVEL LANE  
 TYPICAL CLEARANCE = 5 SECONDS  
 AM/ PM = AVERAGE OBSERVED CYCLE LENGTH  
 MAX = MAXIMUM CYCLE LENGTH

FIGURE II-10  
 EXISTING INTERSECTION LANE GEOMETRY  
 AND AVERAGE CYCLE LENGTH

BROADWAY TRANSPORTATION STUDY  
 VILLAGE OF MENANDS  
 TOWN OF COLONIE, NEW YORK



PROJECT: 01-030 | SCALE: N.T.S. | DATE: 02/2002



- Route 32/North Pearl Street/Wolfert Avenue (unsignalized)
- Route 32/Broadway
- Route 32/Wards Lane
- Route 32/I-787 Access Ramps
- Route 32/Brookside Avenue
- Route 32/Menands Road/Market Road
- Route 32/Route 378 Westbound Off-Ramp
- Route 32/Route 378 Eastbound Off-Ramp (unsignalized)
- Route 32/Route 378 Northbound Weave
- Route 32/Plaza Access Road/British America Parking Lot
- Route 32/First Street/Schuyler Lane

**f. Abutting Highway Segments and Future Plans for Abutting Highway Segments**

Currently, the Capital District Transportation Committee (CDTC) is administering a study in Albany County to improve access for commercial vehicles to industrial areas while redirecting the commercial traffic away from residential areas. The study is focusing on three separate areas along I-787, one area being in the southeastern section of the Village of Menands located within the project corridor of this study. An additional sector of focus for the Albany County study is at the Watervliet Arsenal/Colonie Economic Development Zone located just north of the study area for this project. As this project progresses, alternatives directly affecting the project corridor should be identified and incorporated into the design alternatives proposed for this project.

A project is currently in the design stages by NYSDOT to replace the bridge allowing access by the Canadian Pacific Railroad (CP Rail) line under Route 32 (PIN 1460.37.121). This bridge is located in the project corridor just north of the I-787 intersection. The project objectives include the construction of a new multi-lane single span bridge which will provide motorists a safe means of crossing the CP Railroad, design and construct the bridge in such a manner as to alleviate a sub-standard stopping sight distance problem along Route 32, maintain critical vertical and horizontal clearances required by the railroad to maintain its current standard of operation, and accomplish this without further impacting adjacent properties along Route 32 and increasing ROW takings. There are several alternatives being considered for this project which will be coordinated with the alternatives presented as part of this study as both projects progress.

**g. Travel Speeds and Delays**

The existing speed limit along Route 32 in the project corridor is 48 kilometers per hour (kph) (30 mph).

Travel speed and delay studies were conducted on Monday, April 23, 2001 during the PM peak hour from 4:00 to 6:00 PM and on Tuesday, April 24, 2001 during



the AM peak hour from 7:00 to 9:00 AM. The results of the travel speed and delay studies are outlined below in Table II-1. The table illustrates the average operating speeds for each roadway segment between signalized intersections and an overall operating speed for the segment. The overall operating speeds are calculated based on the total average running time and delay time for a vehicle.

Table II-1 indicates that, overall, corridor operating speeds are very good, and that the delays at traffic signals are generally short. The greatest delays tend to occur on Route 32 in the vicinity of the Price Chopper plaza.

**Table II-1 - Arterial Travel Speed and Delay Summary**

Segment	Segment Distance km (mi)	AM Peak Hour			PM Peak Hour		
		Travel Time (sec)	Total Delay (sec)	Operating Speed kph (mph)	Travel Time (sec)	Total Delay (sec)	Operating Speeds kph (mph)
North Pearl to Broadway	NB .1699 (.1056)	24.2	12.4	26.7 (16.6)	23.4	9.0	27.7 (17.2)
	SB .1699 (.1056)	17.8	0.0	36.4 (22.6)	21.2	0.0	30.6 (19.0)
Broadway to Wards Lane	NB .6722 (.4177)	64.4	10.8	37.5 (23.3)	52.6	2.2	46.0 (28.6)
	SB .6722 (.4177)	49.6	0.0	48.8 (30.3)	50.0	0.0	48.4 (30.1)
Wards Lane to I-787	NB .2060 (.1280)	29.8	13.8	24.9 (15.5)	25.4	12.2	29.1 (18.1)
	SB .2060 (.1280)	22.6	7.2	32.8 (20.4)	30.0	17.0	24.8 (15.4)
I-787 to Brookside Ave	NB .7881 (.4897)	55.0	0.0	51.7 (32.1)	56.4	1.6	50.4 (31.3)
	SB .7881 (.4897)	61.2	10.8	46.3 (28.8)	58.8	5.6	48.3 (30.0)
Brookside Ave to Menands Road	NB .3442 (.2139)	38.6	14.4	32.0 (19.9)	31.8	8.0	38.9 (24.2)
	SB .3442 (.2139)	32.0	1.6	38.8 (24.1)	29.8	0.0	41.5 (25.8)
Menands Road to Route 378	NB .8163 (.5072)	54.2	8.4	54.2 (33.7)	48.8	3.0	60.2 (37.4)
	SB .8163 (.5072)	75.6	33.6	38.9 (24.2)	64.6	22.4	45.5 (28.3)
Route 378 to Plaza Access	NB .2301 (.1430)	21.6	7.2	38.3 (23.8)	23.2	13.4	35.7 (22.2)
	SB .2301 (.1430)	40.8	27.6	20.2 (12.6)	26.0	7.2	31.9 (19.8)
Plaza Access to First Street	NB .7903 (.4911)	75.2	28.2	37.8 (23.5)	65.4	16.6	43.4 (27.0)
	SB .7903 (.4911)	50.8	6.2	56.0 (34.8)	64.0	15.6	44.4 (27.6)
Overall Corridor	NB 4.017 (2.496)	363.0	95.2	39.9 (24.8)	327.0	66.0	44.3 (27.5)
	SB 4.017 (2.496)	350.4	87.0	41.2 (25.6)	344.4	67.8	42.0 (26.1)

Note: Arterial Classified as Type IV



## h. Traffic Volumes

### 1. Existing Traffic Volumes

Automatic Traffic Recorder (ATR) data was collected on two (2) sections of Route 32, one south of the I-787 ramp intersection and one north of the I-787 intersection during May of 2000. ATR data was collected on Wards Lane during September of 1999 and on Brookside Avenue during April of 2001. The *NYS Traffic Volume Report* was also referenced for recent daily traffic volume information in the corridor.

Manual turning movement traffic counts were conducted along the Route 32 corridor by representatives of NYSDOT during the Fall of 2000 and the Spring of 2001. Supplemental manual turning movement traffic counts were conducted by representatives of Creighton Manning Engineering during April of 2001. The counts were collected during the weekday AM peak hour from 7:00 to 9:00 AM and during the weekday PM peak hour from 4:00 to 6:00 PM.

The resulting peak hour volumes were balanced where appropriate and are presented on Figure II-11.

Table II-2 summarizes the existing Average Annual Daily Traffic (AADT), average two directional Design Hour Volume (DHV), K factor, and Directional Design Hour Volume (DDHV) along three (3) segments of the Route 32 project corridor. This data shows that AADT's within the corridor range from 9,150 VPD to 15,900 VPD. The highest hourly volumes occur immediately north of Route 378 and immediately south of the I-787 intersection. Traffic volumes are generally less in the central portion of the corridor between Route 378 and the I-787 ramps intersection.

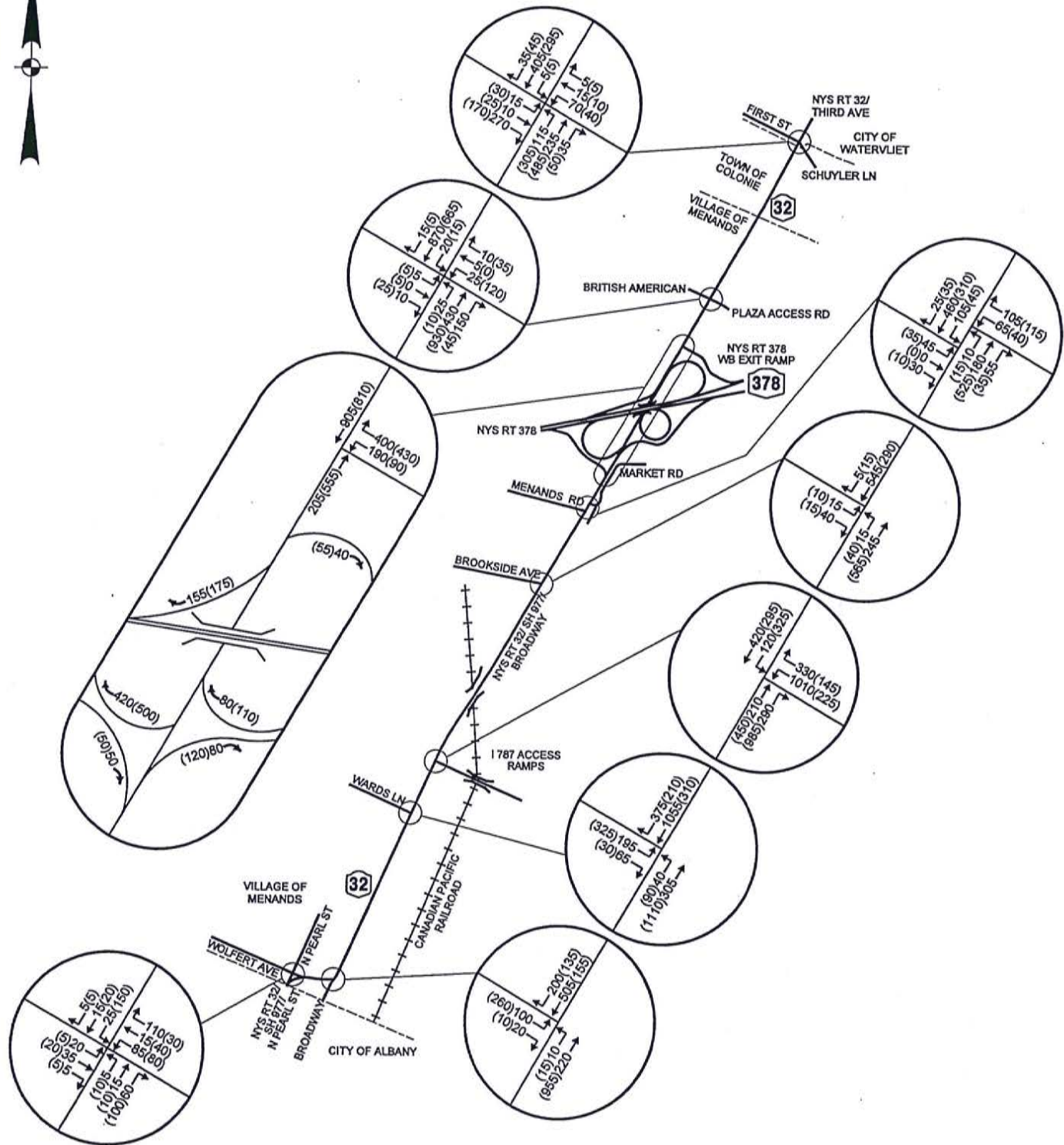
**Table II-2 - Route 32 Segment Volume Summary**

Roadway Segment	AADT <sup>1</sup>	AM Peak Hour			PM Peak Hour		
		DHV	K factor	DDHV	DHV	K factor	DDHV
Route 910C Jct Broadway to I-787	11,400	1025-1930	.090-.169	705-1430	1365-1955	.119-.171	1075-1435
I-787 to Route 378	9,150	800-1300	.087-.142	555-905	880-1455	.096-.159	575-900
Route 378 to Watervliet City Line	15,900	1,130-1,510	.071-.095	745-905	1345-1795	.085-.113	840-985

<sup>1</sup>AADT data obtained from the 1999 Traffic Volume Report published by NYSDOT

K-factor = percent of AADT experienced during the peak hour.





XX (XX) = AM (PM) PEAK HOUR

FIGURE II-11  
2001 EXISTING PEAK HOUR  
TRAFFIC VOLUMES

BROADWAY TRANSPORTATION STUDY  
VILLAGE OF MENANDS  
TOWN OF COLONIE, NEW YORK

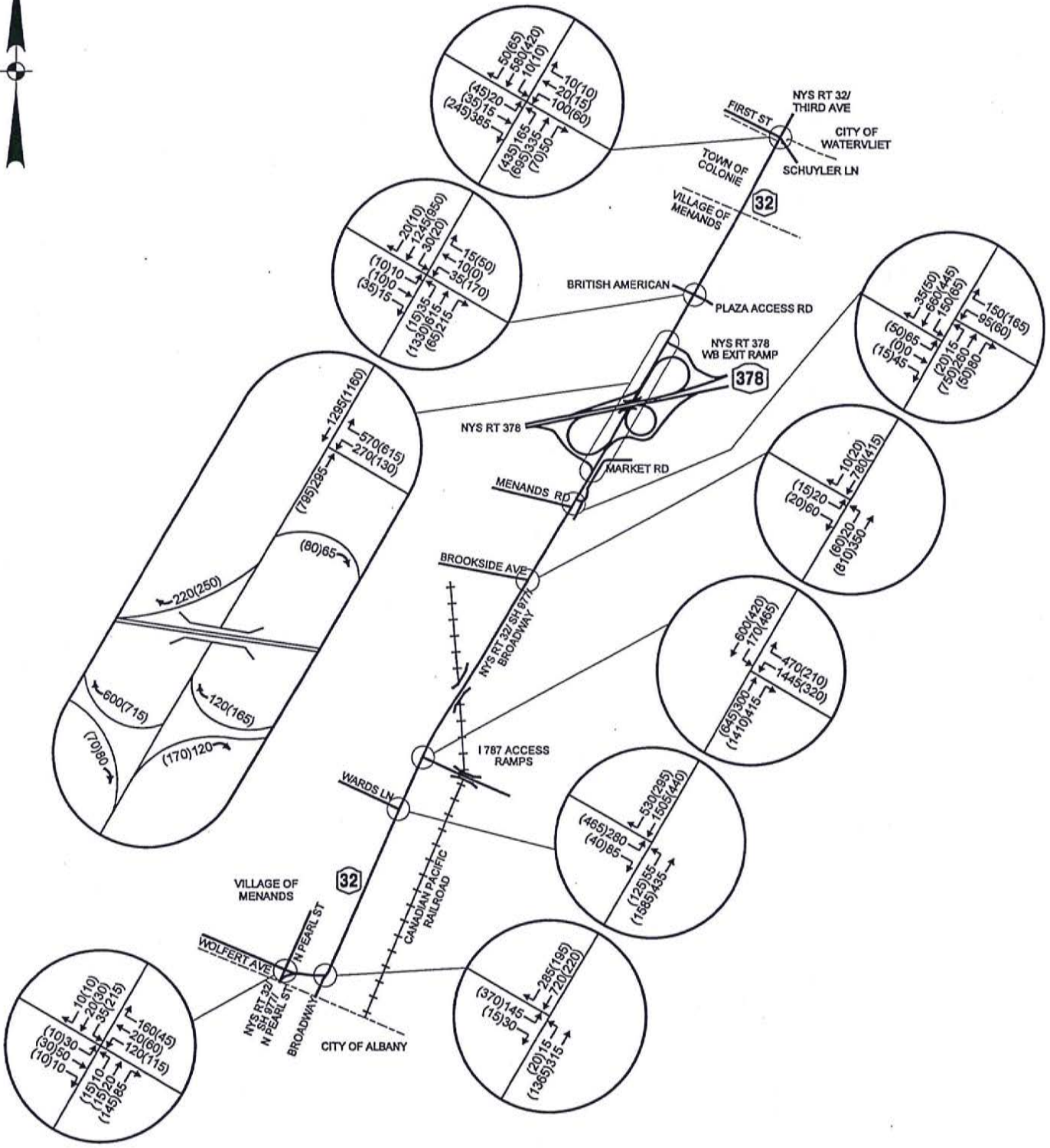
**CME**  
CREIGHTON MANNING ENGINEERING, LLP  
4 AUTOMATION LANE, ALBANY, NY 12205

PROJECT: 01-030 SCALE: N.T.S. DATE: 02/2002

## 2. Future Traffic Volumes

A review of the historical traffic data in the corridor indicates that the traffic volumes have not changed significantly over the last 27 years. Growth rates have been negligible at  $\pm 0.5$  percent per year. The Capital District Transportation Committee (CDTC) has indicated that an annual growth rate of 0.5 percent is suitable for this corridor and an annual growth rate of 0.4 percent was used by NYSDOT in forecasting traffic volumes for the Route 32 bridge project over the Canadian Pacific Railroad in their April 2000 Expanded Project Proposal (EPP). Based on the above data and discussions with Village officials on the potential land use developments for the corridor, an annual growth rate of 1.5 percent per year was applied for this project to obtain conservative 2025 future year traffic volumes. This growth rate equates to applying a factor of approximately 1.430 ( $1.015^{24}$ ) to the existing 2001 traffic volumes. A summary of the 2025 future year intersection traffic volumes for the AM and PM peak hours can be found on Figure II-12. A second future traffic volume scenario was developed based on potential redevelopment in the corridor was also tested to verify the generic growth rate. Section II-1 (page 23) summarizes this process in more detail.





XX (XX) = AM (PM) PEAK HOUR

FIGURE II-12  
2025 FUTURE PEAK HOUR  
TRAFFIC VOLUMES

BROADWAY TRANSPORTATION STUDY  
VILLAGE OF MENANDS  
TOWN OF COLONIE, NEW YORK



PROJECT: 01-030 SCALE: N.T.S. DATE: 02/2002

### 3. Truck Traffic

The latest information published by the New York State Department of Transportation, Highway Sufficiency Ratings (1999), indicates that truck traffic comprises approximately 6 percent of the traffic flow on Route 32 in the Village of Menands. Specific peak hour truck traffic data was obtained during the intersection turning movement counts conducted by the NYSDOT and Creighton Manning Engineering for this study. The specific peak hour heavy vehicle traffic data is summarized below in Table II-3. This table shows relatively heavy truck flows within the corridor during the morning peak hour.

**Table II-3- Summary of Peak Hour Heavy Vehicle Percentages**

Intersection	AM Peak	PM Peak
<b>Route 32/ North Pearl/Wolfert Ave</b>		
NB North Pearl Street	7%	4%
SB North Pearl Street	3%	1%
EB Wolfert Ave	0%	0%
WB Route 32	2%	1%
<b>Route 32/Broadway</b>		
NB Broadway	17%	3%
SB Route 32	6%	8%
EB Route 32	9%	1%
<b>Route 32/Wards Lane</b>		
NB Route 32	16%	2%
SB Route 32	3%	7%
EB Wards Lane	2%	5%
<b>Route 32/I-787 Access</b>		
NB Route 32	18%	3%
SB Route 32	6%	3%
WB I-787 Access	3%	9%
<b>Route 32/Brookside Ave</b>		
NB Route 32	10%	2%
SB Route 32	3%	3%
EB Brookside Ave	2%	5%
<b>Route 32/Menands Road/Market Road</b>		
NB Route 32	9%	2%
SB Route 32	3%	3%
EB Menands Road	7%	2%
WB Market Road	8%	1%
<b>Route 32/Route 378 Ramp</b>		
NB Route 32	12%	2%
SB Route 32	10%	3%
WB Route 378 Ramp	5%	4%
<b>Route 32/Plaza Access</b>		
NB Route 32	10%	5%
SB Route 32	13%	4%
EB British American Driveway	57%	7%
WB Plaza Access	13%	0%
<b>Route 32/First St/ Schuyler Lane</b>		
NB Route 32	11%	3%
SB Route 32	5%	1%
EB First Street	9%	6%
WB Schuyler Lane	11%	6%

#### i. Level of Service

Level of service and capacity analysis were conducted for the Existing 2001 and Future 2025 conditions. Intersection and weaving LOS are based on the versions of the Highway Capacity Software (HCS, Versions 3.2 and 4.1b) that were



available at the time of the study. The arterial LOS is based on actual corridor runs and Synchro Version 5.317. Appendix B contains detailed descriptions of LOS criteria and copies of the HCS level of service reports. Tables II-4 through II-7 summarize the results of the analysis.

**Table II-4- Existing and Future Signalized Intersection Level of Service Summary**

Intersection	AM Peak Hour		PM Peak Hour		
	Existing 2001	Future 2025	Existing 2001	Future 2025	
<b>Route 32/Broadway</b>					
NB	LT	A (9.3)	A (8.0)	B (19.0)	C (26.4)
SB	T	C (22.8)	C (27.3)	A (9.1)	A (7.7)
	R	A (0.2)	A (0.3)	A (0.1)	A (0.2)
EB	LR	A (8.5)	B (15.0)	B (10.3)	C (23.1)
Overall		B (14.0)	B (16.6)	B (14.8)	C (21.6)
<b>Route 32/Wards Lane</b>					
NB	L	A (6.2)	B (10.5)	A (5.5)	B (12.5)
	TR	A (5.2)	A (5.4)	A (6.5)	B (17.9)
SB	T	A (7.7)	B (12.3)	A (5.4)	B (11.5)
EB	LTR	C (21.7)	D (36.0)	C (34.7)	B (18.2)
Overall		A (9.4)	B (14.7)	B (11.6)	B (16.6)
<b>Route 32/I-787 Access</b>					
NB	T	B (12.0)	B (12.5)	B (15.4)	B (17.0)
SB	L	B (13.5)	C (20.4)	B (10.0)	C (24.4)
	T	B (12.3)	B (13.0)	A (4.6)	A (4.7)
WB	L	A (8.3)	B (17.3)	C (21.9)	C (22.9)
Overall		B (10.0)	B (15.9)	B (12.7)	B (17.1)
<b>Route 32/Brookside Ave.</b>					
NB	LT	A (2.0)	A (2.1)	A (2.3)	A (2.7)
SB	TR	A (2.2)	A (2.5)	A (2.0)	A (2.1)
EB	LR	C (34.1)	D (36.4)	C (32.6)	C (33.0)
Overall		A (4.2)	A (4.6)	A (3.0)	A (3.3)
<b>Route 32/Menands Rd./Market Rd.</b>					
NB	LTR	B (10.2)	B (10.7)	B (11.5)	B (13.0)
SB	LTR	B (12.1)	B (15.0)	B (10.9)	B (12.4)
EB	LR	D (41.1)	D (44.1)	D (39.4)	D (40.4)
WB	L	D (40.1)	D (41.4)	D (39.0)	D (39.7)
	R	D (42.8)	D (10.7)	D (42.9)	D (54.1)
Overall		B (18.3)	C (21.4)	B (16.4)	B (18.9)
<b>Route 32/Route 378</b>					
NB	T	A (5.4)	A (5.6)	A (6.2)	A (6.9)
SB	T	A (7.8)	B (12.8)	A (7.0)	A (9.0)
WB	L	B (12.9)	B (14.8)	B (13.0)	B (13.4)
	R	B (14.5)	C (25.3)	B (15.1)	D (39.2)
Overall		A (9.1)	B (14.1)	A (8.1)	B (13.4)
<b>Route 32/Plaza Access</b>					
NB	LT	A (4.1)	A (4.6)	A (5.0)	A (7.1)
	R	A (3.7)	A (4.0)	A (3.4)	A (3.5)
SB	LTR	A (5.2)	A (7.9)	A (4.4)	A (5.3)
EB	LTR	B (18.1)	B (18.4)	B (18.4)	B (18.8)
WB	LTR	B (18.5)	B (19.0)	C (24.1)	D (49.6)
Overall		A (5.2)	A (7.0)	A (6.6)	B (10.1)
<b>Route 32/First St./Schuyler Lane</b>					
NB	L	C (20.3)	D (44.0)	F (146.6)	F (121.4)
	TR	B (13.0)	B (11.1)	C (20.4)	B (13.3)
SB	LTR	B (15.9)	B (16.4)	B (13.4)	A (7.9)
EB	LTR	B (13.3)	D (40.0)	B (12.1)	D (54.6)
WB	LTR	B (11.0)	C (20.4)	B (10.3)	C (23.4)
Overall		B (14.7)	C (23.9)	D (43.4)	D (41.1)

X (XX) = LOS (Delay in Seconds)  
 Note: 2025 LOS optimized

**Table II-5- Existing and Future Unsignalized Intersection Level of Service Summary**

Intersection	AM Peak Hour		PM Peak Hour	
	Existing 2001	Future 2025	Existing 2001	Future 2025
<b>Route 32/N. Pearl St./Wolfert Ave.</b>				
NB LTR	A (7.73)	A (8.52)	A (7.93)	A (9.14)
SB LTR	A (8.03)	A (8.61)	A (9.23)	B (11.35)
EB LTR	A (7.87)	A (8.47)	A (7.99)	A (8.79)
WB LTR	A (8.45)	A (9.96)	A (8.90)	B (10.72)
Overall	A (8.17)	A (9.28)	A (8.72)	B (10.42)
<b>Route 32/Route 378 EB Off-Ramp</b>				
EB R	B (10.6)	C (18.1)	A (9.7)	B (12.7)

X (XX) = LOS (Delay in Seconds)

**Table II-6- Existing and Future Arterial Level of Service Summary**

Segment	AM Peak Hour Level of Service		PM Peak Hour Level of Service	
	Existing 2001	Future 2025	Existing 2001	Future 2025
<b>Broadway to Ward Lane</b>				
NB	42.8 (26.6) A	42.8 (26.6) A	40.7 (25.3) A	40.9 (25.4) A
SB	29.0 (18.0) C	26.9 (16.6) C	29.7 (18.4) B	30.5 (19.0) B
<b>Ward Lane to I-787</b>				
NB	25.1 (15.6) C	24.4 (15.2) C	22.8 (14.2) C	21.5 (13.4) C
SB	39.8 (24.7) A	39.1 (24.3) B	44.4 (27.6) A	44.3 (27.5) A
<b>I-787 to Brookside Ave</b>				
NB	45.0 (28.0) A	44.9 (27.9) A	45.9 (28.5) A	45.3 (28.2) A
SB	39.7 (24.7) A	39.2 (24.4) A	41.9 (26.0) A	41.2 (25.6) A
<b>Brookside Ave to Menands Road</b>				
NB	35.6 (22.1) B	31.9 (19.9) B	31.7 (19.7) B	29.0 (18.0) C
SB	40.5 (25.1) A	36.9 (22.9) B	40.5 (25.2) A	38.6 (24.0) B
<b>Menands Road to Route 378</b>				
NB	43.4 (27.0) A	43.5 (27.0) A	42.5 (26.4) A	42.5 (26.4) A
SB	29.6 (18.4) C	26.4 (16.2) C	29.6 (18.3) C	29.0 (17.9) C
<b>Route 378 to Plaza Access</b>				
NB	37.5 (23.3) B	36.3 (22.6) B	33.3 (20.6) B	31.3 (19.4) B
SB	45.6 (28.3) A	44.5 (27.6) A	44.3 (27.5) A	43.6 (27.1) A
<b>Plaza Access to First Street</b>				
NB	43.2 (26.9) A	40.5 (25.1) A	43.3 (26.9) A	38.9 (24.0) B
SB	21.8 (13.5) C	13.0 (7.9) E	24.7 (15.3) C	10.0 (5.9) F
<b>Overall Corridor</b>				
NB	39.6 (25.6) A	38.4 (23.9) B	37.7 (23.4) B	31.2 (19.2) B
SB	37.9 (23.5) B	31.0 (19.1) B	39.7 (24.7) A	36.7 (22.7) B

XX.X (YY.Y) Z = kph (mph) LOS

**Table II-7 - Existing and Future Weaving Section Level of Service Summary**

Weave	Am Peak Hour		PM Peak Hour	
	Existing 2001	Future 2025	Existing 2001	Future 2025
Route 378 EB Off-Ramp to Broadway NB / Broadway NB Off-Ramp to Route 378 EB	A (38.33 mph)	A (37.37 mph)	A (37.58 mph)	A (36.41 mph)

These tables indicate that traffic operations throughout the corridor are generally very good. The majority of the analysis locations operate at LOS A/C and will continue to operate at LOS A/C during 2025. A few subsegments and lane groups operate below LOS D and will be evaluated as part of the alternatives.



## **j. Safety Considerations, Accident History, and Analysis**

Crash history evaluation was completed within the study area. The evaluation consisted of calculating accident frequency and accident rate and comparing the calculated figures with the statewide averages for similar intersections and highways.

Accident frequency is the number of accidents that have occurred on a segment during a specified period. The frequency values were obtained directly from accident summary reports provided by NYSDOT Region 1, Traffic Engineering and Safety Group. The frequency is the sum of all accidents that occurred on a highway segment during the three-year study period.

The accident rate is the ratio of the number of accidents within a segment for every million vehicle miles (MVM) of travel on the segment during the specified study period. The AADT entering each segment was estimated using the existing volumes found in this study. For this analysis, the number of days in the study is equal to 1,095 (365\*3).

Historical crash records were available from 1996 to 1999, and show that 126 crashes occurred on approximately 2.4 miles of road on Route 32, between the Wolfert Ave/Route 32 intersection and the First Street/Route 32 intersection. This section of Route 32 was broken up into three links so that segment accident rates could be calculated. These segments along Route 32 include:

- Segment 1 - Wolfert Avenue to the I-787 Ramps
- Segment 2 - I-787 Ramps to Route 378 Westbound Off Ramps
- Segment 3 - Route 378 Westbound Off Ramps to First St/Schuyler Lane

Of the 126 accidents, 34 crashes occurred on Segment 1, 72 crashes occurred on Segment 2, and 20 crashes occurred on Segment 3. The accident rate of each Route 32 segment between Wolfert Avenue and First Street was calculated and compared to the applicable Statewide mean accident rate for State-maintained highways, as provided by the NYSDOT's *Safety Information Management System* (SIMS). The accident rate on Segment 1 was calculated to be 4.99 per MVM traveled along Route 32, 5.93 per MVM traveled for Segment 2, and 1.81 per MVM traveled for Segment 3. Only Segment 2 has a greater accident rate when compared to the State mean of 5.57 per MVM traveled for a 4-lane, urban, undivided, free access section.

## **k. Provisions for Pedestrian and Bicyclists**

Within the project limits, Broadway is designated as State Bike Route 9 which extends from New York/New Jersey to Canada. Accommodations for cyclists vary and includes the use of shared lanes and roadway shoulders.



Sidewalks are provided along both sides of Route 32 from the Route 32/Broadway (Route 910C junction) intersection to the Menands Road/Market Road intersection (see Figure II-13). North of the Menands Road/Market Road intersection, sidewalks are provided only on the west side of Route 32. The sidewalk on the west side of Route 32 is interrupted by a few sections of dirt paths (see Figure II-14). In general, the sidewalks south of Menands Road are in good-to-fair condition. The sidewalks north of Menands Road are in fair-to-poor condition. Refer to Figure II-15 for the limits of sidewalks in the corridor.



Figure II-13 Typical Section of Sidewalk

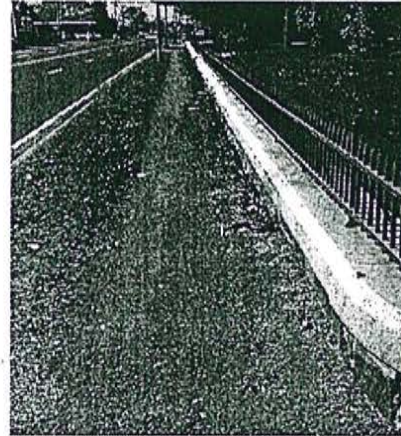


Figure II-14 Typical Section of Dirt Path

Two of the study area intersections, Route 32/Mall Access and the Route 32/North Pearl Street/Wolfert Avenue, have no pedestrian crosswalks. The remaining seven signalized study area intersections provide some type of pedestrian access via crosswalks and/or pedestrian buttons. An additional pedestrian crosswalk, with no traffic control, is provided across Route 32 adjacent to McDonald Circle (entrance to Menands Garden Apartments), located approximately 500 feet south of Menands Road. Table II-8 summarizes the pedestrian access at the study area intersections.

**Table II-8 - Pedestrian Access at Intersections**

Intersection	Crosswalks on Route 32	Crosswalks on Side Street	Pedestrian Buttons
Route 32/ North Pearl/Wolfert Ave	No	No	No
Route 32/Broadway	Yes	Yes	Yes
Route 32/Wards Lane	No	Yes	Yes
Route 32/I-787 Access	Yes	Only on NB ramp	Yes
Route 32/Brookside Ave	Yes	Yes	Yes
Route 32/Menands Road/Market Road	Yes	No	Yes
Route 32/Route 378 Interchange	No	No	No
Route 32/Plaza Access	No	No	No
Route 32/First St/ Schuyler Lane	Yes	Yes	Yes



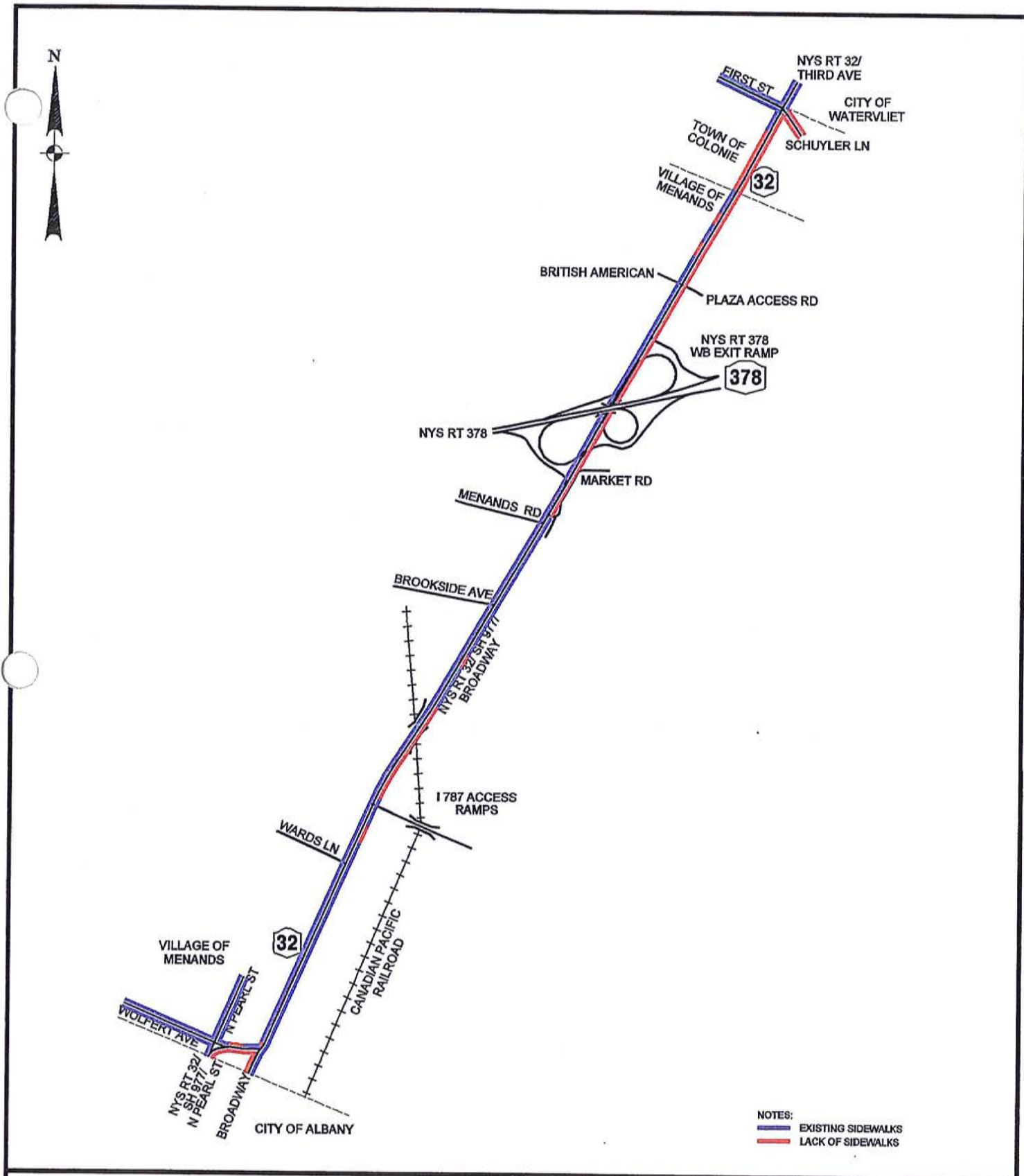


FIGURE II-15  
LIMITS OF SIDEWALKS

BROADWAY TRANSPORTATION STUDY  
VILLAGE OF MENANDS  
TOWN OF COLONIE, NEW YORK



PROJECT: 01-030 | SCALE: N.T.S. | DATE 02/2002

## I. Planned Development for Area

As noted previously, a generic growth rate of 1.5 percent per year was used to estimate the future traffic volume conditions. This annual growth rate is considered conservative and is reflective of potential development within the project corridor. A second future traffic volume scenario ("Potential Development") was developed using a 0.5 percent per year background growth rate, plus additional information on specific sites/buildings cited for potential future development by the Village. The second "Potential Development" scenario was compared to the initial build volumes to validate the reasonableness of the future volumes and analysis presented in this report. Seven sites/buildings as shown on Figure II-16, were marked for potential future development, re-development, or re-occupancy. The individual trip generation was calculated for each site, based on the *ITE Trip Generation, 6<sup>th</sup> Edition*. The results of these calculations can be found in Table II-9.

**Table II-9 - Trip Generation Study**

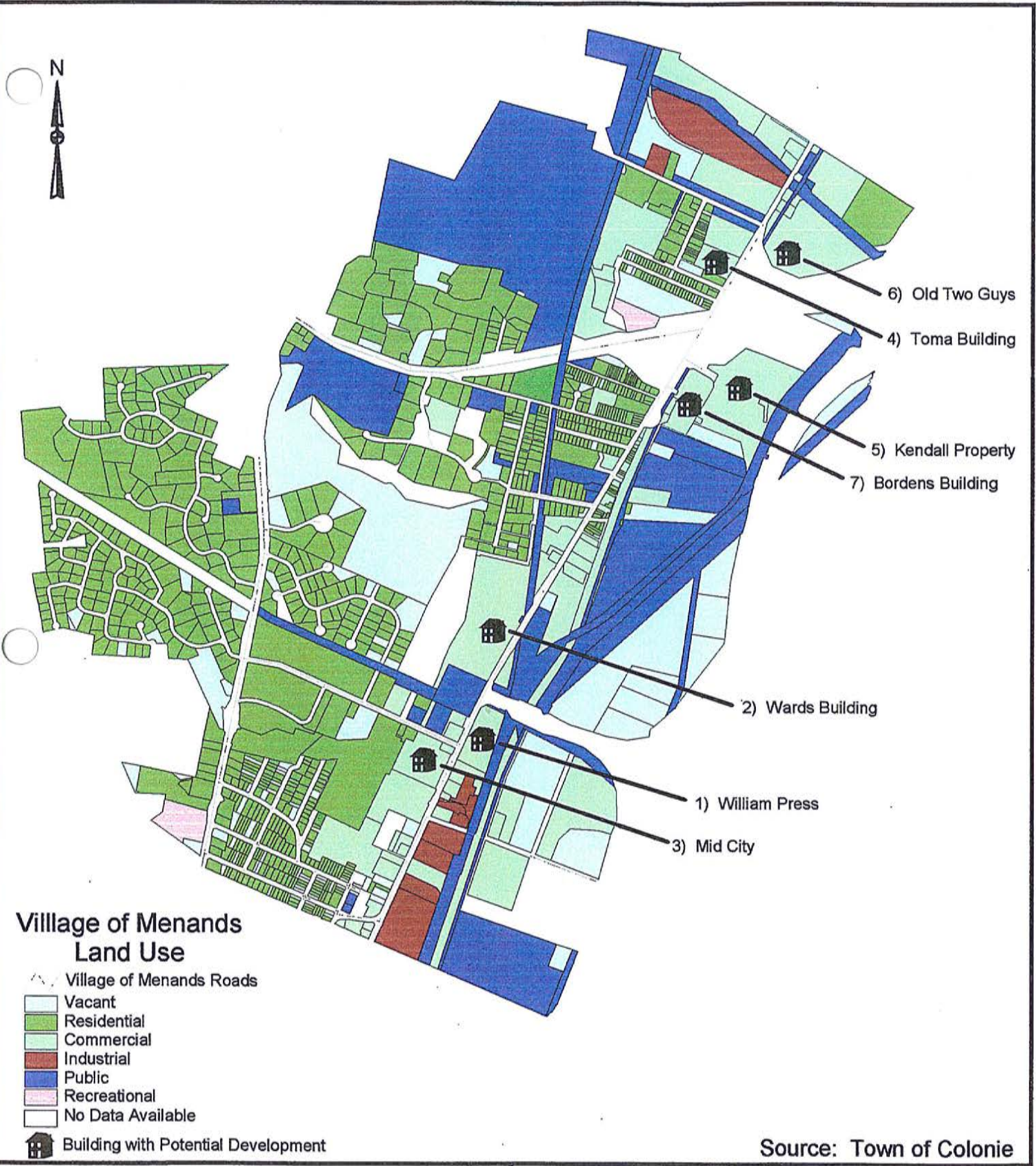
"Potential Development"	Land Use	AM Trip Generation			PM Trip Generation		
		Entering	Exiting	Total	Entering	Exiting	Total
1) Williams Press	Manufacturing Re-occupancy of 250,000 SF	138	41	179	65	116	181
2) Wards Building	General Office Re-occupancy of 100,000 SF	164	22	186	32	159	191
3) Mid City	Shopping Center Occupancy of total 115,000 SF – 80,000 SF of occupied space	33	21	54	109	119	228
4) Toma Building	Shopping Center Re-occupancy of 25,000 SF	43	27	70	121	131	252
5) Kendall Property	Light Industrial Re-occupancy of 25,000 SF	20	3	23	3	22	25
6) Old Two Guys	General Office Occupancy of total 80,000 SF – 35,000 SF of occupied space	46	6	52	7	32	39
7) Bordens Building	Convenience Market Re-occupancy of 5,000 SF	78	77	155	85	88	173
<b>Total</b>		<b>522</b>	<b>197</b>	<b>719</b>	<b>422</b>	<b>667</b>	<b>1089</b>

This table shows that 520,000 square feet of floor space could be developed or re-occupied in the area, and that this land use could generate approximately 1,100 PM peak hour trips. This site-generated traffic was distributed and added to the study area intersection based on existing travel patterns in the corridor, plus a nominal background growth rate at 0.5 percent per year. The resulting annual growth rates averaged 1.1 percent per year during the AM peak hour and 1.4 percent per year during the PM peak hour.



In most cases, the "Potential Development" volumes are lower than the generic 1.5 percent per year future volumes. Any intersection where the "Potential Development" traffic growth was greater than the generic 1.5 percent per year volumes, an additional level-of-service analysis was conducted. In all of those instances, the LOS results were consistent with what was presented in Tables II-4 through II-7. Therefore, the original 2025 traffic forecasts developed at 1.5 percent per year under the future traffic volume section "h.2" are considered appropriate and conservative for the evaluation of alternatives.

If substantial development is realized which is above and beyond the amount considered herein, then alternative highway needs may be identified.



Source: Town of Colonie

Figure II-16  
Potential Development

Broadway Transportation Study  
Village of Menands  
Town of Colonie, New York



Project 01-030d

Date: 1/02



**m. System Elements and Conditions**

NYS Route 32 is designated as a detour route for I-787 between I-787 exits 5 and 8. When used as a detour route during incidents, Route 32 is not intended to provide the same level of operations as I-787.

**n. Transit**

The Capital District Transportation Authority (CDTA) provides fixed route bus service along Route 32 from Albany to Troy that extends through the Village of Menands. There are no bus turnout bays located along the corridor. Table II-10 summarizes the existing bus stop locations.

**Table II-10 – Existing Transit Stops**

Northbound
In front of Southco/Albany Fill International
In front of Subway
In front of the Williams Press Building on Wards Lane
In front of the Morgan Building adjacent to I-787
In front of Off Track Betting (OTB)
Opposite the Town Firehouse on Brookside Avenue
In front of Stewart's across from Menands Road
Across from Clifford Road
Across From Glenwood Road
In front of old Two Guys/Broadway Diner
In front of Citgo across from Idlewild Park
Southbound
At the First Street intersection
At the Idlewild park intersection
Across from the old Two Guys/Broadway Diner
In front of Price Chopper
At the Harts Lane Intersection
In front of the Menands Garden Apartments on McDonald Road
Adjacent to the Town Firehouse on Brookside Avenue
Across from Off Track Betting (OTB)
In front of Montgomery Wards Building
In front of Mid City Plaza

**m. System Elements and Conditions**

NYS Route 32 is designated as a detour route for I-787 between I-787 exits 5 and 8.

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In front of the Morgan Building adjacent to I-787
In front of Off Track Betting (OTB)
Opposite the Town Firehouse on Brookside Avenue
In front of Stewart's across from Menands Road
Across from Clifford Road
Across From Glenwood Road
In front of old Two Guys/Broadway Diner
In front of Citgo across from Idlewild Park
<b>Southbound</b>
At the First Street intersection
At the Idlewild park intersection
Across from the old Two Guys/Broadway Diner
In front of Price Chopper
At the Harts Lane Intersection
In front of the Menands Garden Apartments on McDonald Road
Adjacent to the Town Firehouse on Brookside Avenue
Across from Off Track Betting (OTB)
In front of Montgomery Wards Building
In front of Mid City Plaza



## 2. Needs

### a. Project Level Planning

#### 1. Capacity Needs

Motorists traveling along Route 32 experience very good levels of service. Horizon year 2025 traffic forecasts show that this high service level is expected to continue into the foreseeable future. There are no apparent capacity needs in the corridor. In fact, it appears that the number of lanes could be reduced in the corridor and still provide a satisfactory level of service.

#### 2. Safety Needs

There is an apparent higher than average accident rate in the central portion of the corridor. Numerous curb cuts exist. Access management improvements should be considered to minimize and separate vehicular conflicts. A preliminary investigation was conducted in the corridor to identify specific potential access management improvements. The results are presented in the following table (II-11). This table shows that there are a number of opportunities to provide access management improvements along Route 32. It should be noted that these concepts are based on observations of the physical environment and did not include specific discussions with any affected property owners.

Table II-11 - Broadway Summary of Land Uses & Access Management Potential

Route 9 Segment	Westerly Side				Easterly Side			
	Business		No. of Existing Driveways	Access Management Potential *	Business		No. of Existing Driveways	Access Management Potential *
	Name	Type			Name	Type		
Segment A - First St to British American/Plaza Access Rd	Mobil	Gas Station	2	N	Parking Lot	--	0	N
	Resident	Home	0	N	Club Hollywood Video	Retail	1	C
	Resident	Home	1	N	Citgo	Gas Station	2	N
	Resident	Home	1	N	The Submaker	Restaurant	2	CD/C
	Schuyler Heights Apt.	Home	1	N	The Village One Apt.	Restaurant	1	N
	Resident	Home	2	GD	Geely	Gas Station	2	N
	FedEx	Industry	1	N	Menands Water Supply Building	Public	1	N
	Blasch Ceramics	Industry	1	N	Schuyler Inn	Hotel	1	N
	Burger King	Restaurant	2	N	Pristine Auto	Car Dealership	1	C
	HSBC Bank	Bank	2	N	Menands Diner	Restaurant	1	C
	Albany Steel	Industry	2	N	Old Two Guys	Office	2	N
	British America Realty	Office	3	N				
	Cemetery	Public	1	N				
	Price Chopper Plaza	Retail	3	CD/S				
British American/Plaza Access Rd to 378 Ramps	Tomra Recycling	Office	4	CD/S				
	Apartments	Home	1	N				
	(Harts)							
	Resident	Home	0	N				
	Resident	Home	0	N				
	(Glenwood)							
	Resident	Home	0	N				
	Resident	Home	0	N				
	Resident	Home	0	N				
	Resident	Home	0	N				
	Resident	Home	0	N				
	Resident	Home	0	N				
	Resident	Home	0	N				
	Resident	Home	0	N				
Segment B - 378 Ramps to Menands Rd/Market Rd	Resident	Home	2	CD				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	1	N				
	Resident	Home	0	N				
	Resident	Home	1	N				
	Resident	Home	0	N	Stewarts	Gas Station	1	N
	Resident	Home	1	N	Poppy's Place	Restaurant/Bar	0	N
	Resident	Home	1	N	Spa Secrets	Retail	0	N
Segment C - Menands Rd/Market Rd to Brookside Ave	(Tillinghast)				AD/ST Veterinary Hospital	Hospital	0	N
	Resident	Home	1	N	(Tillinghast)			
	Keybank	Bank	2	N	Resident	Home	0	N
					Resident	Home	0	N
					Resident	Home	0	N
					Resident	Home	0	N
					Resident	Home	0	N
					Resident	Home	0	N
					Resident	Home	0	N
					Protection One	Office	1	N
					Resident	Home	0	N
					Resident	Home	0	N
					Resident	Home	0	N
					(MacDonald Cr)			
Center Manor Adult Home	Home	1	N	Resident	Home	1	N	
Menands Town Hall	Public	1	N	Resident	Home	1	N	
Menands Fire Station	Public	1	N	Resident	Home	0	N	
				Resident	Home	0	N	
				Houlihan Motor Spot	Car Dealership	1	C	
				Nationwide Insurance	Office	1	N	

Access Management Potential Codes: N - None; C - Channelize; CD - Consolidate Driveways; S - Shared Access or Cross Easement  
 \*shared driveway or cross easement



Table II-11 - Broadway Summary of Land Uses & Access Management Potential (Cont.'d)

Intersection	Westerly Side				Easterly Side			
	Business		No. of Existing Driveways	Access Management Potential *	Business		No. of Existing Driveways	Access Management Potential *
	Name	Type			Name	Type		
Segment C - Brookside Ave to I-787 Ramps	Shirt Laundry	Retail	1	C	Resident	Home	0	N
	(Irving)				Resident	Home	0	N
	Nicholas	Car Dealership	2	CD	(Irving)	Home	0	N
	(Oakland)				Resident	Home	0	N
	Blumberg Excelsior Building	Office	1*	C	Audio Video Corporation Building	Office	0	N
	Penske	Automotive	2	N	Off Track Betting	Gamble	2*	N
	GCR Truck and Tire Center	Retail	1	C	Olde Towne Pub	Restaurant/Bar	2*	N
	Wards Building	Office	5	CD	Mohawk Dental Supply	Office	2	N
					Tougher	Industry	1	N
					Morgan Building	Office	3	C/CD
					Niagra Mohawk Building	Public	1*	N
					Office Building	Office	2*	N
					William Press Building	Office	3	CD
					Disability Assistance	Office	1	N
					Wicker N' Gifts	Retail	1*	N
				Childcare Council	Service	1*	N	
				Build	Office	1*	N	
				Subway	Restaurant	1	C	
				Southco	Industry	1	N	
				Nicholas Auto (Simmons)	Car Dealership	1*	N	
				Simmons	Industry	1*	N	
				Southco	Industry	1	N	
				Cranesville Block Co.	Industry	1*	N	
				Tougher Industry	Industry	2*	N	
				Albany International	Office	1	N	
				Out of Business				
				Out of Business				
				Office				
				Stoney's Auto Repair	Automotive	1	N	N
				Plumb Engineering	Office	1	N	N
				Exxon	Gas Station	2	N	N
Segment D - Broadway to North Pearl St			0	N				

Access Management Potential Codes: N - None; C - Channelize; CD - Consolidate Driveways; S - Shared Access or Cross Easement  
\*shared driveway or cross easement

**b. Area or Corridor Needs**

1. Modal Interrelationships

Bus service is presently provided along Route 32. Opportunities to enhance transit stops and service should be considered. Refer to the letter in Appendix C from the Capital District Transportation Authority (CDTA) regarding potential transit improvements along the corridor.

2. Bicycle and Pedestrian Facilities

The analysis of existing conditions has shown that there is a need to provide several specific pedestrian linkages. Bicycle accommodation should also be enhanced. Refer to the letter in Appendix C from the New York Bicycling Coalition regarding potential bicycle improvements along the corridor.

**c. Project Objectives**

The objectives of this project are:

- To functionally and aesthetically improve the corridor using the excess roadway capacity thereby minimizing R.O.W. acquisition
- Provide snow storage/maintenance strips
- Provide improved pedestrian connections
- Provide bicycle accommodations
- Provide access management improvements
- Provide improved access to the Menands market area
- Provide transit related facilities to improve service and encourage ridership
- Minimize environmental effects



## Chapter III

### Preliminary Alternatives

#### A. Design Criteria

As a planning project undertaken prior to a formal NYSDOT Expanded Project Proposal, this study does not contain specific design criteria for the corridor. It does contain a single criterion for planning purposes. That is to provide LOS D or better for all lane groups in the study area.

#### B. Alternatives Considered

One primary alternative was considered for the entire corridor, and several sub-alternatives were also considered. A description of each alternative follows.

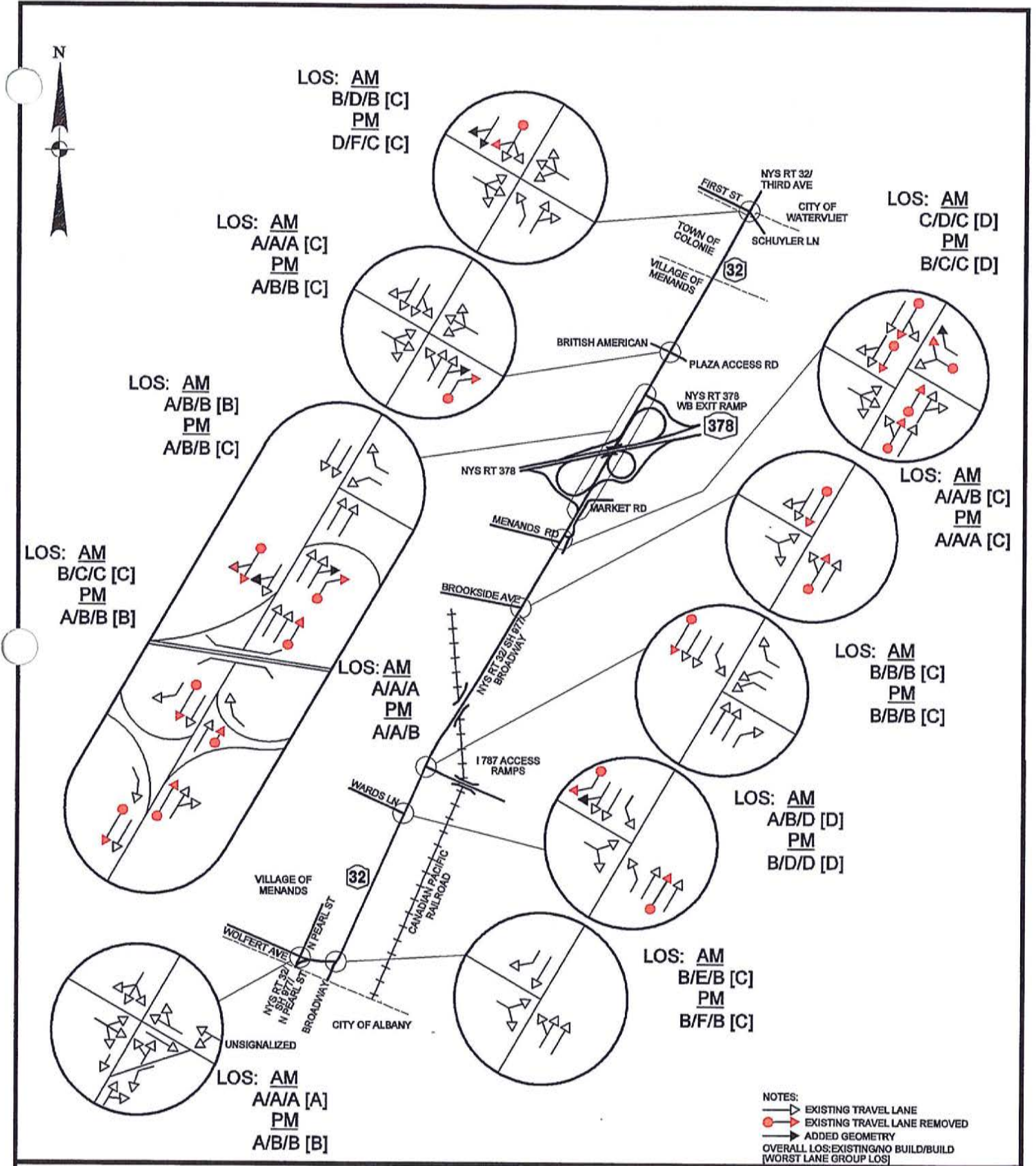
Alternative 1 – Reduce the number of lanes throughout the corridor while maintaining LOS D or better for all lane groups. This alternative provides opportunities for bicycle/pedestrian improvements, transit stops, maintenance strips, raised medians, and additional green space all within the existing cross-section. Refer to Figure III-1 which shows the specific lane reductions analyzed.

Alternative 1A – This sub-alternative involves the realignment of Menands Road in the vicinity of the existing Stewart's convenience store. This realignment is depicted on Figure III-2 and shows a connector road extending through the Stewart's property. This alternative would eliminate the existing offset T-intersections and provide a single 4-way intersection with more efficient signal phasing. The existing Stewart's convenience store and gas pumps could be relocated to the north at the existing intersection location.

Alternative 2 – This alternative involves the modification of the Route 32/Route 378 interchange to improve truck access to the Menands market and proximate industrial land uses. Several ramps would be eliminated and a commercial access road would be constructed. The physical modifications proposed under this alternative are much larger in scale than those looked at for the other alternatives. In addition, this alternative may have significant right-of-way/right-of-access issues which have not been addressed in this concept plan. Refer to Figure III-3 for an overview of this alternative and to Appendix D for the design hour volumes for this alternative.

Alternative 2A – This sub-alternative is also shown on Figure III-3 and involves a replacement of the existing full access adjacent to Stewart's with either no access or a right in/right out driveway. Refer to Appendix D for the design hour volumes for this alternative.

These alternatives are considered feasible and are described in greater detail in the following section.



**FIGURE III-1  
PRELIMINARY INTERSECTION GEOMETRY NEEDS**

**BROADWAY TRANSPORTATION STUDY  
VILLAGE OF MENANDS  
TOWN OF COLONIE, NEW YORK**

**CME**  
 CREIGHTON MANNING ENGINEERING, LLP  
 4 AUTOMATION LANE, ALBANY, NY 12205

PROJECT: 01-030    SCALE: N.T.S.    DATE: 01/2002



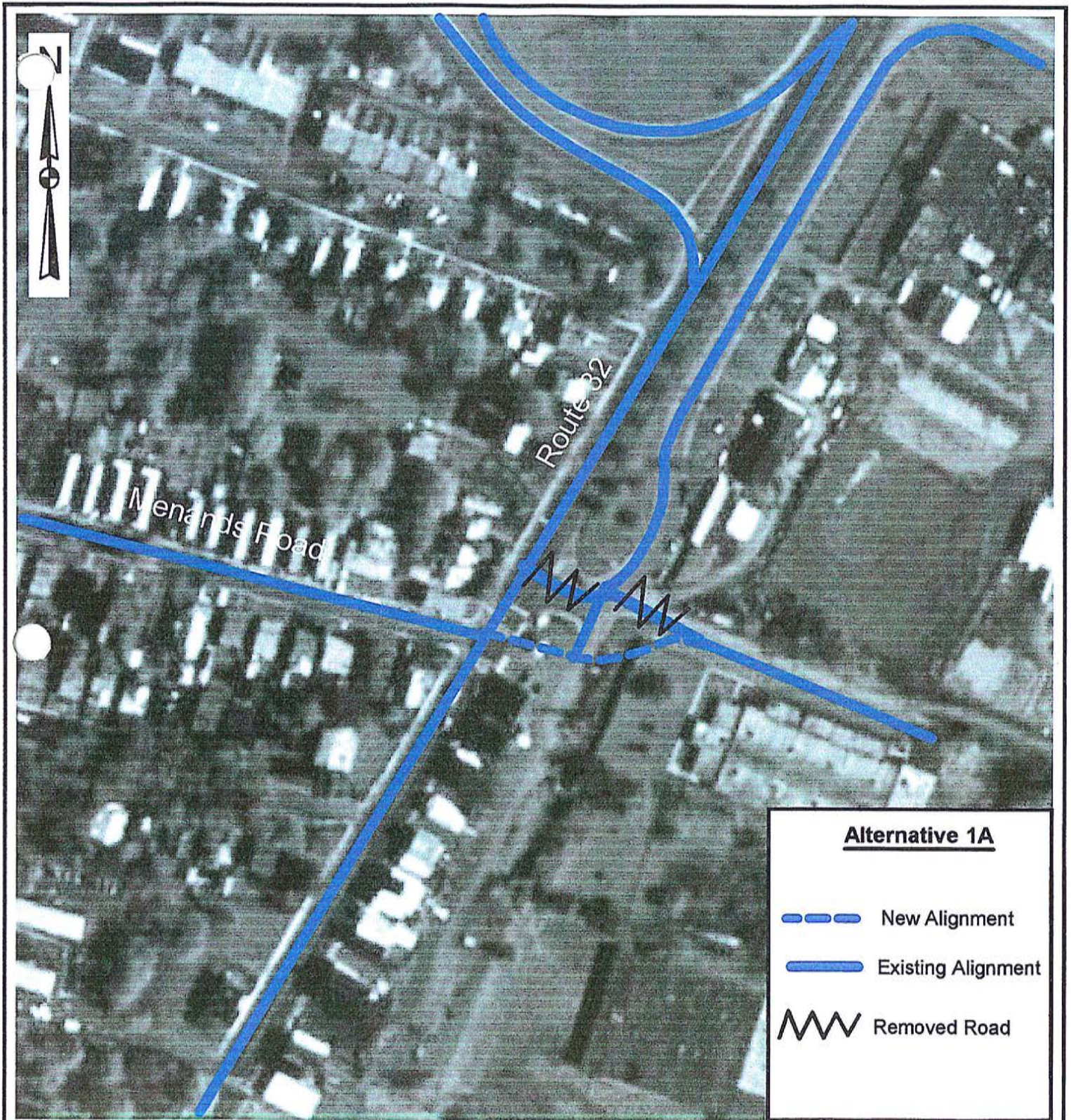


Figure III-2  
Menands Rd/Market Rd Realignment

Broadway Transportation Study  
Village of Menands  
Town of Colonie, New York



Project: 01-030d

Scale: N.T.S.

Date: 01/02



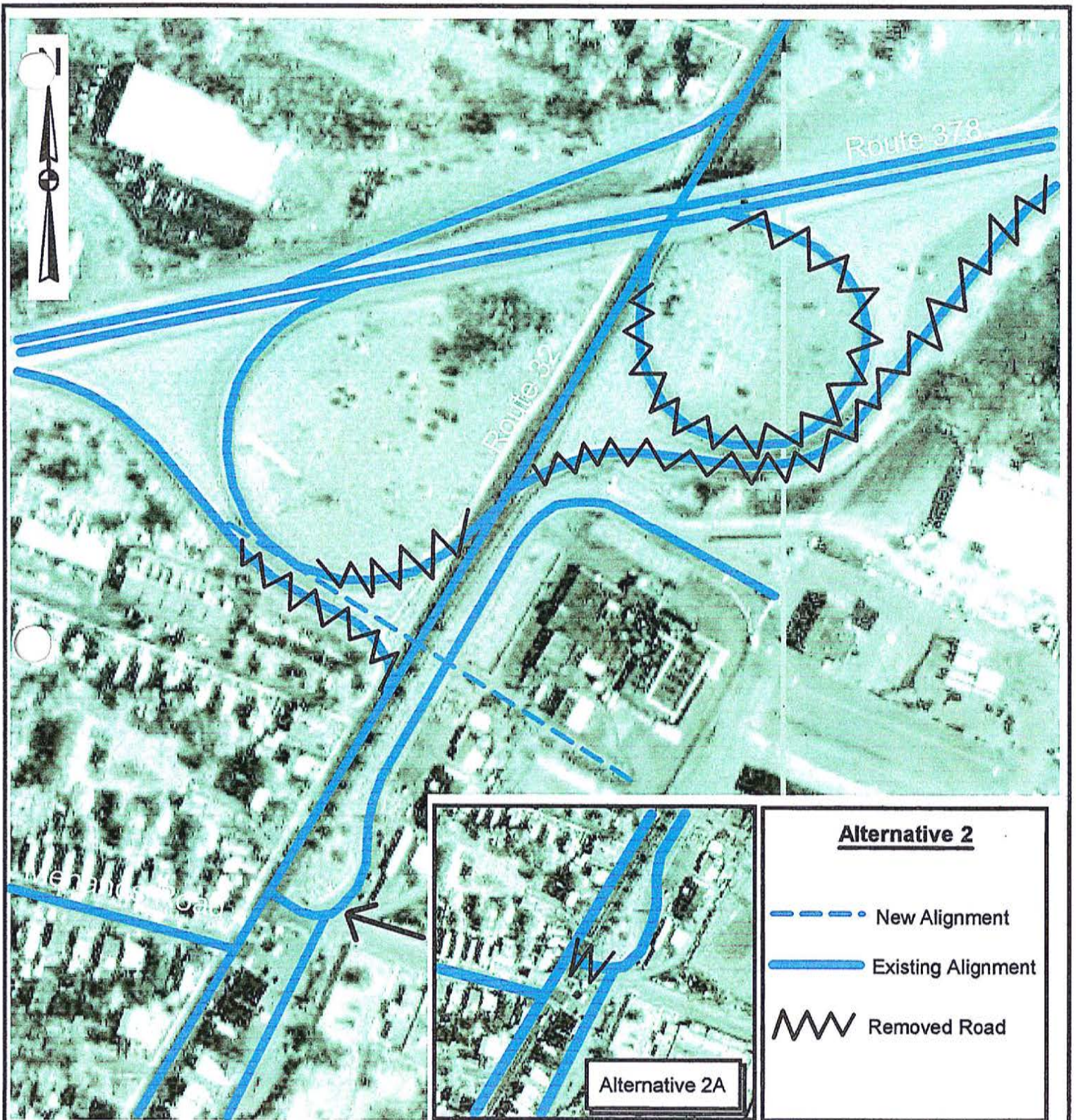


Figure III-3  
Route 378 Eastbound Ramp Realignment

Broadway Transportation Study  
Village of Menands  
Town of Colonie, New York



Project: 01-030d

Scale: N.T.S.

Date: 01/02



### **C. Analysis of Feasible Alternatives**

Arterial and intersection level of service analysis were conducted to determine the future operational characteristics of the various alternatives considered. Tables III-1 to Table III-3 summarize the results of the level of service calculations for the study area intersections for the AM and PM peak hours. Figure III-1 also shows the future levels of service for Alternative 1.

**Table III-1 – Future and Alternative 1 Signalized Intersection Level of Service Summary**

Intersection	AM Peak Hour		PM Peak Hour		
	Future 2025	2025 Alt. 1	Future 2025	2025 Alt. 1	
<b>Route 32/Broadway</b>					
NB	LT	A (8.0)	A (7.2)	C (26.4)	B (13.7)
SB	T	C (27.3)	C (25.7)	A (7.7)	A (6.6)
	R	A (0.3)	A (0.1)	A (0.2)	A (0.0)
EB	LR	B (15.0)	B (13.5)	C (23.1)	C (29.6)
Overall		B (16.6)	B (15.4)	C (21.6)	B (14.5)
<b>Route 32/Wards Lane</b>					
NB	L	B (10.5)	B (18.5)	B (12.5)	B (19.2)
	TR	A (5.4)	A (6.6)	B (17.9)	D (51.4)
SB	T(R)	B (12.3)	D (45.3)	B (11.5)	B (13.6)
EB	LTR	D (36.0)	C (34.0)	B (18.2)	C (24.5)
Overall		B (14.7)	D (37.5)	B (16.6)	D (36.0)
<b>Route 32/I-787 Access</b>					
NB	T	B (12.5)	B (12.5)	B (17.0)	B (17.0)
SB	L	C (20.4)	C (20.4)	C (24.4)	C (24.4)
	T	B (13.0)	B (15.7)	A (4.7)	A (5.0)
WB	L	B (17.3)	B (17.3)	C (22.9)	C (22.9)
Overall		B (15.9)	B (16.6)	B (17.1)	B (17.1)
<b>Route 32/Brookside Ave.</b>					
NB	LT	A (2.1)	--	A (2.7)	--
	(L)	--	A (4.1)	--	A (4.3)
	(T)	--	A (5.1)	--	A (9.3)
SB	TR	A (2.5)	B (11.7)	A (2.1)	A (5.7)
EB	LR	D (36.4)	C (25.1)	C (33.0)	C (24.0)
Overall		A (4.6)	B (10.6)	A (3.3)	A (8.3)
<b>Route 32/Menands Rd./Market Rd.</b>					
NB	LTR	B (10.7)	--	B (13.0)	--
	(L)	--	B (16.0)	--	B (11.2)
	(TR)	--	B (18.3)	--	D (38.3)
SB	LTR	B (15.0)	--	B (12.4)	--
	(L)	--	B (18.2)	--	C (32.4)
	(TR)	--	C (33.9)	--	A (9.5)
EB	LR	D (44.1)	D (37.7)	D (40.4)	D (37.7)
WB	L	D (41.4)	D (36.4)	D (39.7)	D (36.8)
	R	D (10.7)	D (40.0)	D (54.1)	D (36.7)
Overall		C (21.4)	C (29.8)	B (18.9)	C (29.0)
<b>Route 32/Route 378</b>					
NB	T	A (5.6)	A (7.0)	A (6.9)	B (10.1)
SB	T	B (12.8)	B (16.9)	A (9.0)	B (14.5)
WB	L	B (14.8)	B (13.8)	B (13.4)	B (10.6)
	R	C (25.3)	B (18.7)	D (39.2)	B (16.8)
Overall		B (14.1)	B (15.5)	B (13.4)	B (13.2)
<b>Route 32/Plaza Access</b>					
NB	(LTR)	--	A (4.9)	--	B (11.9)
	LT	A (4.6)	--	A (7.1)	--
	R	A (4.0)	--	A (3.5)	--
SB	LTR	A (7.9)	A (7.1)	A (5.3)	A (7.8)
EB	LTR	B (18.4)	C (21.0)	B (18.8)	B (17.1)
WB	LTR	B (19.0)	C (21.6)	D (49.6)	C (30.2)
Overall		A (7.0)	A (6.8)	B (10.1)	B (12.0)
<b>Route 32/First St./Schuyler Lane</b>					
NB	L	D (44.0)	C (23.2)	F (121.4)	C (27.0)
	TR	B (11.1)	B (14.7)	B (13.3)	B (19.9)
SB	LTR	B (16.4)	C (22.5)	A (7.9)	C (25.8)
EB	LTR	D (40.0)	C (21.1)	D (54.6)	C (27.7)
WB	LTR	C (20.4)	B (13.4)	C (23.4)	B (16.9)
Overall		C (23.9)	B (19.8)	D (41.1)	C (23.8)

X (XX) = LOS (Delay in Seconds)  
 Note: 2025 LOS optimized



**Table III-2- Future and Alternative 1 Arterial Level of Service Summary**

Segment		AM Peak Hour Level of Service		PM Peak Hour Level of Service	
		Future 2025	Alt. 1 2025	Future 2025	Alt. 1 2025
Broadway to Ward Lane	NB	42.8 (26.6) A	41.4 (25.8) A	40.9 (25.4) A	25.3 (15.2) C
	SB	26.9 (16.6) C	14.3 (8.3) D	30.5 (19.0) B	28.5 (17.7) C
Ward Lane to I-787	NB	24.4 (15.2) C	24.4 (15.2) C	21.5 (13.4) C	21.5 (13.4) C
	SB	39.1 (24.3) B	38.6 (23.9) B	44.3 (27.5) A	44.1 (27.4) A
I-787 to Brookside Ave	NB	44.9 (27.9) A	44.8 (27.8) A	45.3 (28.2) A	45.5 (28.2) A
	SB	39.2 (24.4) A	37.2 (23.1) B	41.2 (25.6) A	42.0 (26.0) A
Brookside Ave to Menands Road	NB	31.9 (19.9) B	28.5 (17.7) C	29.0 (18.0) C	21.5 (12.9) C
	SB	36.9 (22.9) B	33.5 (20.6) B	38.6 (24.0) B	41.3 (25.7) A
Menands Road to Route 378	NB	43.5 (27.0) A	42.7 (26.5) A	42.5 (26.4) A	40.9 (25.4) A
	SB	26.4 (16.2) C	24.1 (14.7) C	29.0 (17.9) C	25.3 (15.5) C
Route 378 to Plaza Access	NB	36.3 (22.6) B	37.0 (23.0) B	31.3 (19.4) B	28.8 (17.8) C
	SB	44.5 (27.6) A	44.7 (27.7) A	43.6 (27.1) A	42.6 (26.4) A
Plaza Access to First Street	NB	40.5 (25.1) A	41.1 (25.5) A	38.9 (24.0) B	40.5 (25.0) A
	SB	13.0 (7.9) E	15.5 (9.5) D	10.0 (5.9) F	14.7 (9.1) D
Overall Corridor	NB	38.4 (23.9) B	38.1 (23.7) B	31.2 (19.2) B	32.2 (19.7) B
	SB	31.0 (19.1) B	32.7 (20.1) B	36.7 (22.7) B	37.9 (23.5) B

XX.X (YY.Y) Z = kph (mph) LOS

**Table III-3 – Alternative 1, 1A, 2, and 2A Intersection Level of Service Summary**

Intersection	Control	AM Peak Hour				PM Peak Hour				
		Alt. 1 2025	Alt. 1A 2025	Alt. 2 2025	Alt. 2A 2025	Alt. 1 2025	Alt. 1A 2025	Alt. 2 2025	Alt. 2A 2025	
Route 32/Menands Rd./Market Rd.										
NB	L	S	B (16.0)	A (8.3)	A (5.1)	A (5.0)	B (11.2)	A (5.4)	A (4.6)	A (4.6)
	TR		B (18.3)	A (9.8)	A (6.0)	A (5.9)	D (38.3)	B (15.5)	B (11.0)	B (10.3)
SB	L	S	B (18.2)	A (9.7)	A (5.1)	--	C (32.4)	A (9.0)	A (5.1)	--
	TR		C (33.9)	B (19.6)	B (10.2)	B (10.2)	A (9.5)	A (7.9)	A (6.6)	A (6.6)
EB	LR	S	D (37.7)	--	B (19.4)	B (19.4)	D (37.7)	--	B (19.5)	B (19.5)
	LTR		--	B (15.1)	--	--	--	B (18.4)	--	--
WB	L	S	D (36.4)	--	B (18.0)	--	D (36.8)	--	B (18.8)	--
	R		D (40.0)	--	B (18.4)	--	D (36.7)	--	B (19.8)	--
Overall	LTR		--	B (18.3)	--	--	--	C (24.8)	--	--
Route 32/Route 378 EB Ramp			C (29.8)	B (15.9)	B (10.2)	A (9.9)	C (29.0)	B (14.2)	B (10.3)	A (9.3)
Route 32/Route 378 EB On/Off Ramp										
EB	R	U	C (18.1)	--	--	--	B (12.7)	--	--	--
Route 32/Route 378 EB On/Off Ramp										
NB	L	S	--	--	A (8.1)	A (7.4)	--	--	A (8.1)	A (7.8)
	TR		--	--	A (7.5)	A (7.4)	--	--	B (13.9)	B (12.7)
SB	L	S	--	--	A (6.9)	A (7.3)	--	--	A (7.1)	A (7.7)
	T		--	--	B (10.5)	A (9.8)	--	--	A (8.3)	A (8.1)
EB	R	S	--	--	B (14.6)	B (14.6)	--	--	C (25.9)	C (25.9)
	L		--	--	B (17.9)	B (17.9)	--	--	B (19.1)	B (19.9)
WB	TR	S	--	--	B (16.5)	B (16.5)	--	--	B (16.4)	B (16.4)
	L		--	--	B (16.6)	B (17.2)	--	--	B (16.0)	B (16.5)
Overall	TR	S	--	--	B (16.8)	B (17.0)	--	--	B (16.7)	B (17.9)
	TR		--	--	B (12.2)	B (12.2)	--	--	B (16.7)	B (16.6)

U = Unsignalized, S = Signalized

These tables confirm that significant lane reductions and roadway narrowing can be completed while still ensuring adequate service levels into the future.



## D. Conclusions and Concept Plans for Feasible Alternatives

The preceding analysis has shown that various lane reductions can be accomplished throughout the corridor. These findings are illustrated as typical sections on Figures III-4 through III-7, and in plan view on Figures III-8 through III-13. Below is a brief description of the various figures:

Figure III-4 shows the existing and proposed typical section for the southern portion of the corridor from Wolfert Avenue to Wards lane. This figure shows that this section of Route 32 can be reduced from four lanes to three lanes. It should be noted that this is an asymmetrical cross-section providing two northbound lanes and one lane southbound. A traditional 3-lane section with a two way continuous left turn lane may also be considered, but is dependent on the signalized levels of service at the Wolfert Ave/Route 32 intersection which appears to require two northbound through lanes in the design year.

Figure III-5 shows the existing and proposed typical sections for the section of Route 32 in the vicinity of the I-787 intersection. This area currently provides a seven-lane cross section which can be reduced to five lanes. A raised median may also be possible in this area. A plan view of this area is shown on Figures III-11a and III-11b.

Figure III-6 shows that the central portion of the corridor can be reduced from four lanes to three lanes. This center turn lane may also reduce the apparent higher than average accident frequency in this area. The plan view of this area is shown on Figures III-11c and III-11d.

Figure III-7 shows the existing and proposed typical section in the vicinity of Route 378. Within this area, Route 32 currently provides a four-lane cross section, which can be reduced to two lanes. A raised median can be provided along the limited access section of Route 378 underneath Route 378.

Figures III-8, III-9 and III-10 show conceptual intersection improvements at the Wolfert Avenue/North Pearl Street intersection.

Figure III-11 illustrates conceptual roadway narrowing from Wards Lane to Brookside Avenue.

Figure III-12 shows possible access management improvements in the vicinity of the Price Chopper plaza, north of the Route 378 intersection. This figure also shows that the section of Route 32 north of Route 378 should provide four or more lanes. No lane reduction in this section is suggested to meet future demand.

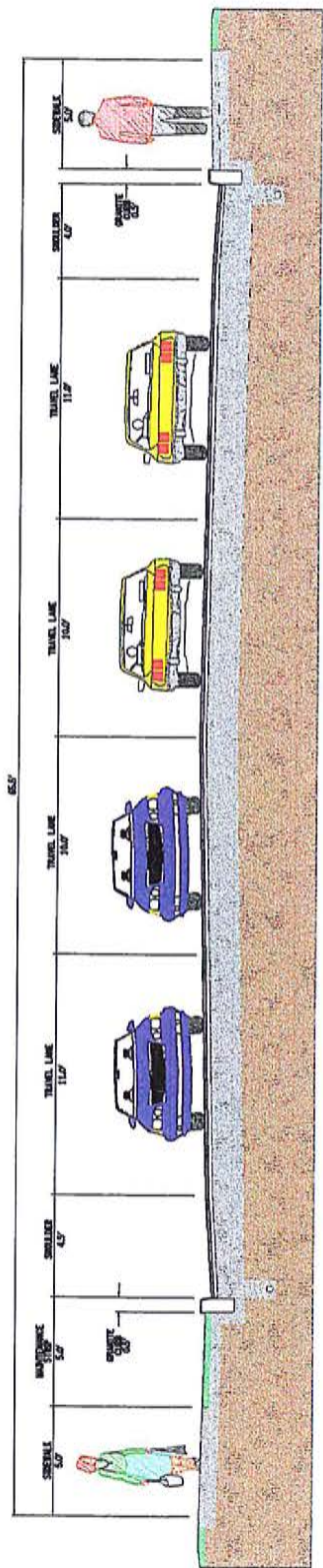
Figure III-13 shows the conceptual improvements associated with Alternative No. 2, which involves the elimination of several ramps to/from Route 378, and the construction of a new commercial access road into the Menands Market area.

This study has analyzed existing traffic operations, as well as future land use and future traffic operations for the Route 32 corridor in the Village of Menands. It has also identified long-term conceptual highway and geometric improvements for the area. The basic conclusion from this



study is that there are clear opportunities for substantial enhancements in the corridor. The improvements include reduced roadway width, which will allow for landscaping enhancements, provision of a maintenance strip/snow storage, and multi-modal improvements such as improved transit stops, and bicycle and pedestrian accommodations. More than 19 specific potential access management improvements are also identified.

**EXISTING TYPICAL SECTION**  
WOLFERT AVENUE TO WARDS LANE



**PROPOSED TYPICAL SECTION**  
WOLFERT AVENUE TO WARDS LANE

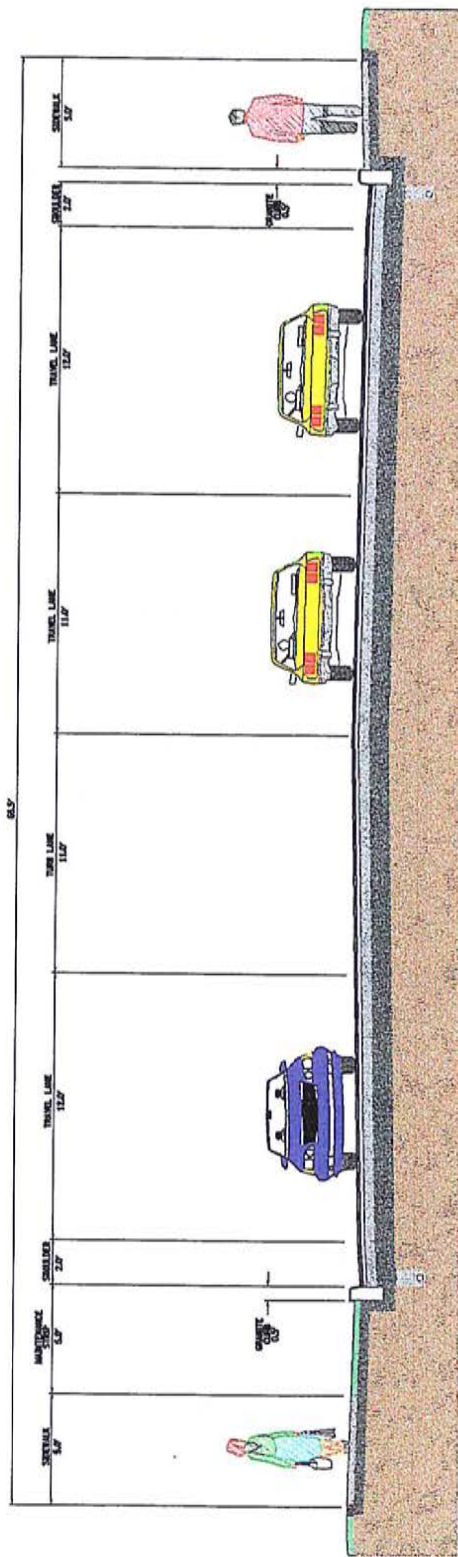
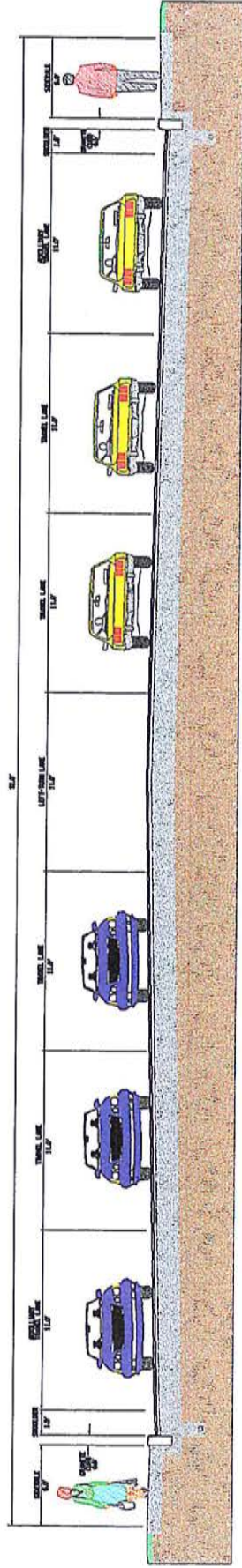


FIGURE III-4





**EXISTING TYPICAL SECTION**  
WARDS LANE TO RAILROAD OVERPASS



**PROPOSED TYPICAL SECTION**  
WARDS LANE TO RAILROAD OVERPASS

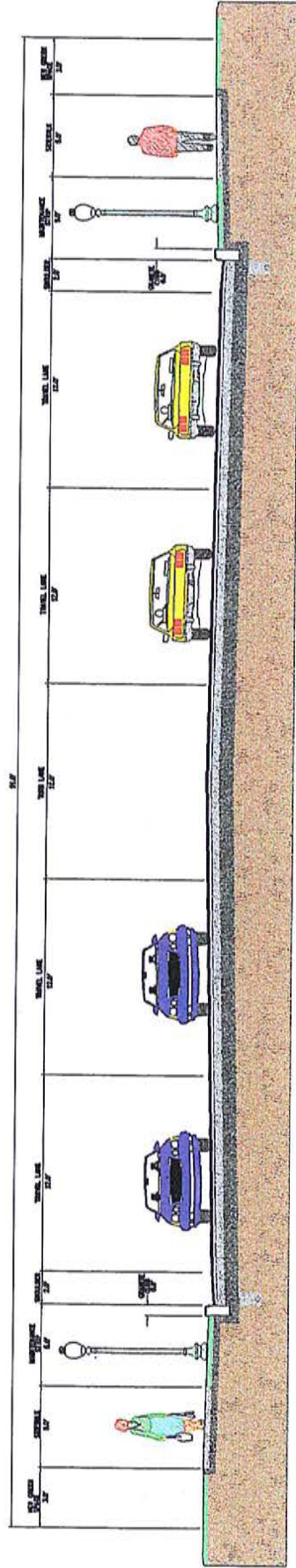
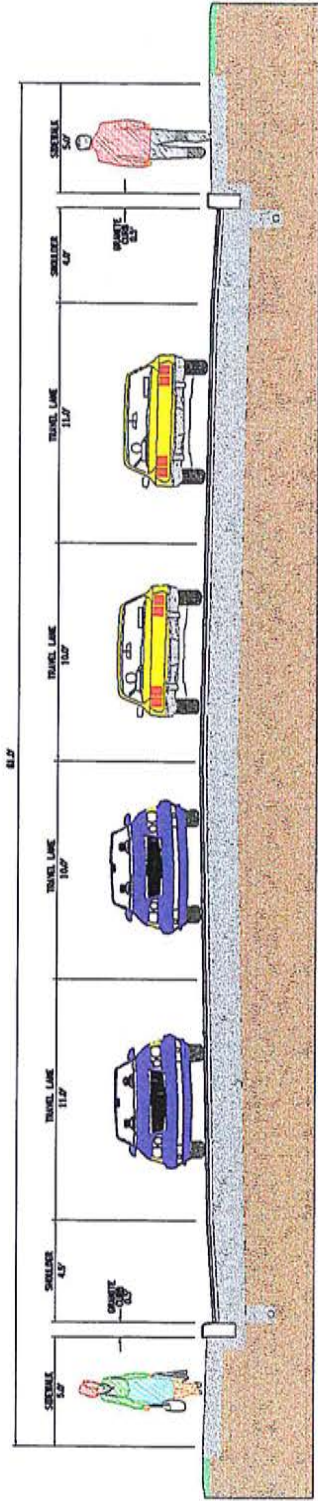


FIGURE III-5



**EXISTING TYPICAL SECTION**  
RAILROAD OVERPASS TO MENANDS/ MARKET ROAD



**PROPOSED TYPICAL SECTION**  
RAILROAD OVERPASS TO MENANDS/ MARKET ROAD

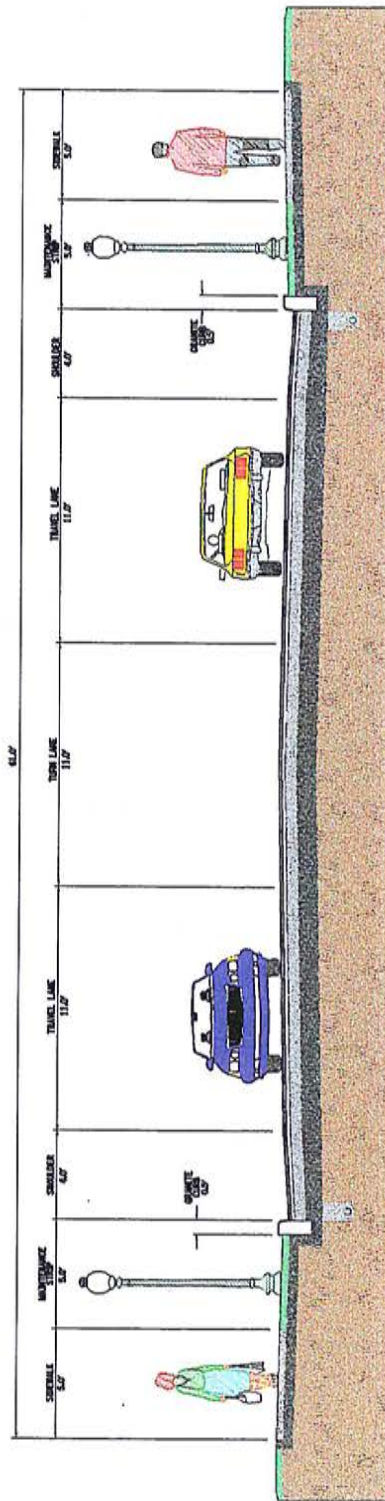


FIGURE III-6





