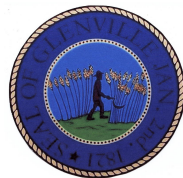


FREEMANS BRIDGE ROAD MASTER PLAN

TOWN OF GLENVILLE NEW YORK



June 16, 2004

ACKNOWLEDGEMENTS

The Glenville Town Board adopted the Freemans Bridge Road Master Plan on June 16, 2004.

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1. EXECUTIVE SUMMARY

In February, 2001 Synthesis and its project partners, Transportation Concepts and River Street Planning and Development, were commissioned to develop a Master Plan for the Freemans Bridge Road area of Glenville, New York. This study was partially funded by the Capital District Transportation Committee's (CDTC) Community and Transportation Linkage Planning Program and builds upon previous planning efforts in the Town, including the Town's 1990 Master Plan and the 2004 Town Center Master Plan.

At the start of the study, community kick-off meetings were held and input sought from town residents. The information derived from these meetings, as well as information provided in discussions with town officials, was used as the basis for the goals and objectives for the study. These include the creation of a framework for land use decisions within the study area, suggestions to promote a pattern of development that supports and encourages mixed-use areas with walkable streets and attractive public spaces, and development of a multi-modal transportation strategy that supports the overall plan.

Existing conditions were inventoried and analyzed. Transportation Concepts and the CDTC conducted a series of traffic studies and analyses, which were supported with data they collected, as well as by data provided by the New York State Department of Transportation, Capital District Transportation Authority, the Town of Glenville Planning Department, and the Schenectady County Traffic Safety Board. Economic conditions and demographic data, as provided by the U.S. Census Bureau and other sources, were reviewed and summarized. Current land characteristics and uses were reviewed using existing mapping and extensive on-site investigation. Particular attention was given to traffic growth and impacts that might be anticipated because of development. Level of Service (LOS) analyses were conducted and tools were provided to facilitate the estimate of future traffic activity according to type of development.

A number of recommendations are offered for the Freemans Bridge Road Study Area. Land use and development recommendations include general suggestions, as well as recommendations pertaining to open space/recreation, the Freemans Bridge Road corridor itself, and a prototype mixed-use development area. The transportation section addresses a number of issues applicable to the study area as a whole and access management recommendations for specific areas or intersections. The report is illustrated with a plan drawing and sketch renderings of the suggested concept plan.

2. INTRODUCTION

Synthesis, working together with Transportation Concepts and River Street Planning and Development, began to develop a Master Plan for the southeastern portion of the Town of Glenville in February, 2001. The study area includes the portion of the Town between NYS Route 50 and Freemans Bridge Road south of Worden Road (Schenectady County Route 29), extending to the banks of the Mohawk River. The study area includes some of the largest undeveloped parcels in the eastern portion of Glenville. A site location map is provided in Figure 1.

This was a particularly significant time in the Town of Glenville. A new Wal-Mart was being built along Freemans Bridge Road and a road and sewer extension to service it were in the process of being constructed at the time the *Request for Proposals* for this study was announced.

Today, Glenville is confronting development pressure and has instituted a moratorium on development while this plan is being prepared to enable the town to develop a comprehensive strategy to ensure that future development occurs within a well thought-out framework. This should include appropriate infrastructure, adequate transportation components, and, most importantly, the desires of the residents and landowners.

The Freemans Bridge Road area has many opportunities as well as constraints. For example, the study area includes an accessible riverfront and the presence of the Mohawk-Hudson Bike-Hike Trail. Traffic volumes continue to increase within the study area, thereby increasing the potential for commercial activity. However, the increase in traffic brings with it additional congestion. Consequently, improved traffic management is needed to provide for current and anticipated traffic flow.

The Town had previously adopted a Comprehensive Plan (1990) and in 2001 adopted an extensively revised zoning ordinance and new zoning map. The Schenectady County Airport/Town of Glenville Land Use Study (2000) addressed land use in the vicinity of the Schenectady County Airport. The Glenville Town Center Master Plan was undergoing preparation during the period of this study, and was adopted on March 17, 2004.

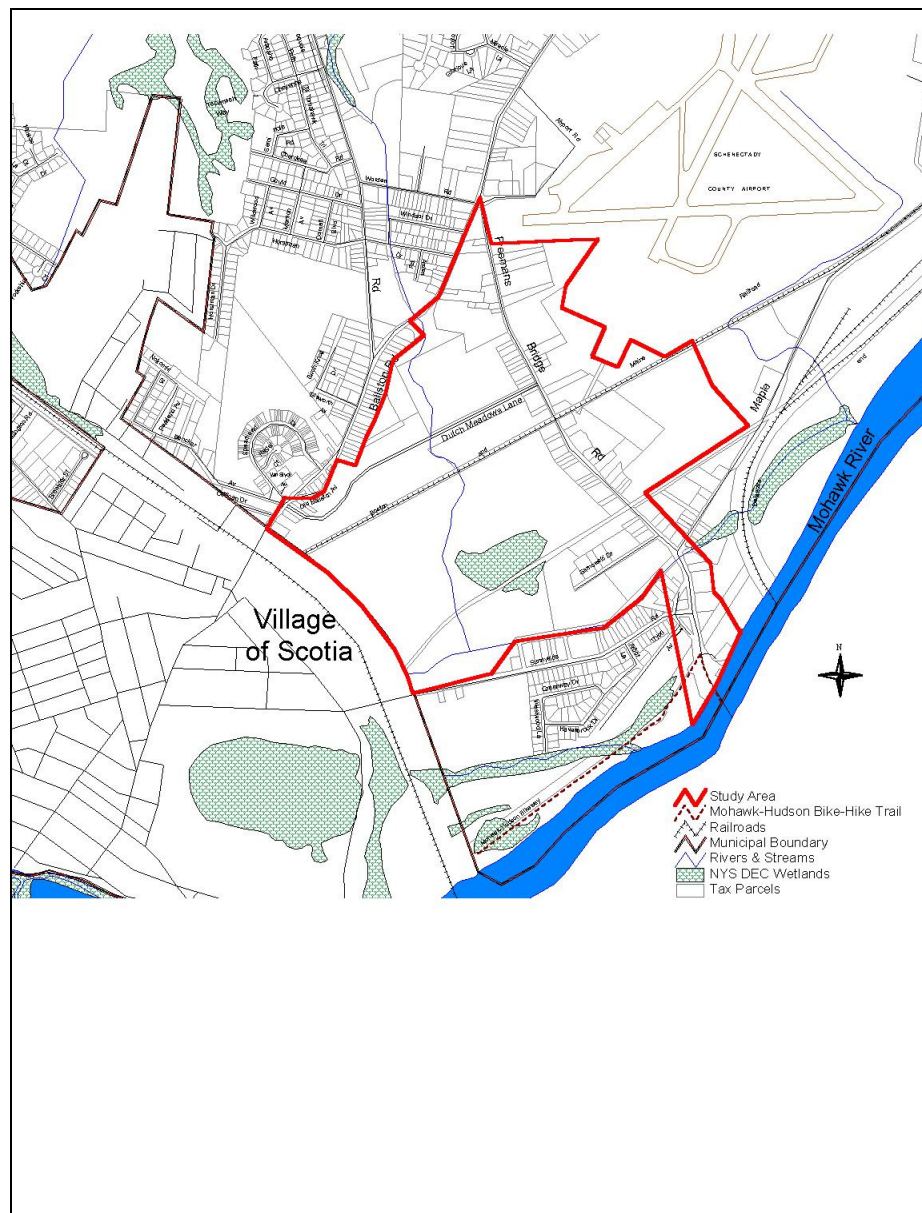
In continuation of these efforts, the Town of Glenville initiated the Freemans Bridge Road Master Plan, which is partially funded by the Capital District Transportation Committee's (CDTC) Community and Transportation Linkage Planning Program. As the designated Metropolitan Planning Organization (MPO) for the Albany-Schenectady-Troy urbanized area, CDTC included the Freemans Bridge Road Master Plan in the 2001-2002 Unified Planning Work Program. The Town of Glenville Planning Department requested a land use and transportation study be performed to examine future development potential and preservation and recreation options for the last significant portion of developable land in eastern Glenville.

The Scope of Work for the Freemans Bridge Road Master Plan included the inventory and assessment of existing conditions regarding transportation features and land use. It also included a review and summary of economic and demographic information. Public input was solicited at community meetings and the resulting information was incorporated into the study. Working with representatives of the town, the consultants identified a series of goals and objectives to serve as a guide for planning and development activity. A concept plan was

developed, along with a number of short-, medium-, and long-term actions designed to meet project goals.

It is anticipated that this study will provide the basis for a usable development plan with broad-based support. The plan will enable developers and reviewing agencies to better provide for the planned growth of this diverse community over the next several years. Unplanned and possibly misguided development will be avoided; an economically vital and aesthetically pleasing area that reflects local identity and is complementary to plans for the development of the Town Center will be promoted.

Map 1 – Site Location Map



3. GOALS AND OBJECTIVES

Goals were grouped into three categories: land use, which addresses the identification of specific areas for specific purposes; urban design, which sets forth a conceptual framework within which design decisions would be made; and transportation, which outlines parameters for improvements to the transportation network that would support the other goals. A number of objectives for each goal suggest actions to accomplish the goals.

3.1 Land Use

Goal: To establish a framework for land use decisions in the study area that includes identification of areas best suited to various types of land uses, as well as areas best left undeveloped or developed for recreational purposes.

Objective: To identify areas to be developed for such uses as single-family housing, multi-family housing, commercial enterprises, office/technology park, and recreation facilities, both active and passive. The identification of such areas takes into account physical and environmental constraints within the study area, as well as existing and proposed infrastructure and transportation features.

Objective: To target portions of the study area for both active and passive recreational uses and to provide green linkages to the waterfront and other significant natural areas.

Objective: To promote a land use plan for the study area that offers sufficient flexibility to allow for the assimilation of opportunities that may arise as development proceeds and that are complementary to the Town Center Master Plan.

Objective: To identify an area or areas along the Mohawk River suitable for appropriately scaled, private sector development that is water-dependent and/or water-enhanced.

Objective: To promote a portion of the study area as a possible site for a multi-tenant business and technology park.

3.2 Urban Design

Goal: To promote a pattern of development that supports and encourages mixed-use (residential, professional and small scale commercial) and offers a variety of pleasant, well-designed public spaces and walkable streets.

Objective: To encourage a traditional pattern of development, where appropriate, that includes street fronts defined by buildings, functional public areas, and pedestrian-oriented design.

Objective: To promote an architectural style(s) that is both attractive and functional and that is distinctive to the Town of Glenville.

- Objective:** To identify a focal or “core” area along Freemans Bridge Road to be redeveloped in a traditional architectural style with building massing, pedestrian accommodations, and a public plaza.
- Objective:** To provide an integrated system of public spaces that may include parks, plazas, courtyards, and greenbelts, all connected by multi-use paths and/or sidewalks.
- Objective:** To provide public space(s) along the Mohawk River, as well as along key tributaries such as the Kromme Kill and Horstman Creek, including convenient and safe access for pedestrians and bicyclists.

3.3 Transportation

- Goal:** To promote vehicular circulation patterns that, to the extent practicable, segregate commercial traffic from local automobile traffic and offer alternative routes that enhance safety by providing for safe and comfortable walkways, paths, trails, and dedicated street lanes for pedestrians and bicyclists.
- Objective:** To establish a more efficient flow of vehicular traffic within and surrounding the study area, specifically along Freemans Bridge Road, adopting access management principles such as shared points of entry and exit in an effort to provide alternative means of ingress and egress to abutting land uses.
- Objective:** To encourage pedestrian activity within the study area through development of a system of sidewalks and multi-use paths and by providing high-visibility crosswalks and pedestrian friendly intersections.
- Objective:** To encourage the use of bicycles by providing bicycle lanes along roads and/or dedicated bike routes and multi-use paths, and by linking proposed bike routes/multi-use paths within the area to the existing Mohawk-Hudson Bike Hike Trail and to planned multi-use paths in the Town Center and along the Mohawk River from Freemans Bridge Road to the hamlet of Alplaus.

4. EXISTING CONDITIONS INVENTORY AND ANALYSIS

The inventory and analysis section offers a detailed look at existing conditions within the study area. Starting with a summary of observations and recommendations made during the public input portion of the study, the analysis then moves on to land use, economic conditions, and transportation. An abbreviated retail market analysis is also included with the economic analysis.

4.1 Summary of Public Input

Comments at Public Meetings

Two community kick-off meetings were held – one on March 28, 2002 at the Glenville Senior Center and the other on April 29, 2002 at the Glenville Municipal Center.

Comments received were categorized by the consultants into the following categories: Infrastructure/Environment, Entertainment/Recreation, Commercial, Roadway/Streetscape, and Other. The following summarizes the comments received:

Infrastructure/Environment

- There are potential brownfield sites and pollution near the waterfront
- Lack of general maintenance and clean-up of public areas
- Drainage issues within the project area need to be addressed
- Stormwater management for increased paved surfaces associated with additional development is important
- There are development constraints within the runway protection zones associated with the Schenectady County Airport

Entertainment/Recreation

- Need for more access to the river, boat launch locations
- Importance of recreational opportunities, in general
- Desire for golf course development
- Desire for a bike path linking recreational and residential areas, and further linking to other areas of town
- Desire to create opportunities to enjoy the beauty of the area (not from a car)
- Concern regarding costs of recreational amenities

Commercial

- Desire for restaurants (not fast food)
- Interest in shopping opportunities coupled with concern that retail may not be viable given numerous shopping opportunities nearby
- Recognition of the importance of community-based businesses and the perception of better, more personal service they provide, since owners tend to work in their businesses
- Importance of retaining and further developing small business
- Need to create employment, particularly high-paying jobs
- Importance of commercial development complementing and not competing with that taking place in the Town Center

- Concern expressed whether the demographics of the area could support specialty retail
- Desire for gas station, machinery parts, bakery, home improvement store, and shoe repair shop
- Concern regarding the future impact of the new Wal-Mart; whether Wal-Mart will have a negative tax impact
- Need to identify sectors to target for creation of new jobs such as high tech or financial; also need to identify value of providing flexible commercial space
- Recognition of the proximity of the Schenectady County Airport, which provides access for “high-tech, high-cost goods”
- Recognition of potential for using Airport sites for related commercial development
- Desire to maintain a “business-friendly” approach
- Desire to phase out heavy industrial uses in favor of a combination of retail/office/warehouse distribution
- No desire for more Wal-Mart type development

Roadways/Streetscape

- Transportation system needs to accommodate commercial traffic to avoid cut-through in residential areas
- Redesignation of Freemans Bridge Road as Route 50 would positively impact commercial viability, but might also harm natural resources
- Roundabout at the Route 50/Freemans Bridge Road intersection might improve traffic conditions
- Best route for traveling to Schenectady should be taken into account
- NYS Route 50 and Freemans Bridge Road not pedestrian friendly; correct hazardous pedestrian conditions
- Street is currently unattractive; need a better gateway

Other

- Comments regarding the value residents place on their town, good place to live, has “character”
- Acknowledgment of good schools in Glenville
- Concern for developing good tax base, balanced with keeping the town’s advantages, community values
- Recognition of military presence at the Airport and the Empire State Aerosciences Museum

In the summer of 2002, the Town initiated a survey of opinions on transportation and development issues that was sent to all town property owners via the *Glenville Newsletter*. The survey responses revealed that a majority of landowners want planned development with sidewalks, as well as streetscape amenities and attractive architecture. Development preferences reported in the survey were mixed among office, commercial, retail, light industrial, and recreation/open space. Many respondents indicated that they would trade traffic delays for a more attractive and pedestrian friendly corridor. A majority suggested widening a section of Freemans Bridge Road to four or five lanes. A slight majority of residents also indicated that they want sidewalks along most busy highways.

4.2 Land Use

4.2.1 Existing Conditions and Uses



Photo 1: Mohawk River



Photo 2: Horstman Creek

Natural features of the study area include the Mohawk River (Photo 1), Horstman Creek (Photo 2), the Kromme Kill, and Collins Creek. There are wetlands in the southeast and southwest portions of the study area. A 100-year flood plain extends from the intersection of Horstman Creek with the Kromme Kill, north through the Wal-Mart site, to north of Ballston Road (beyond the study area). The flood plain broadens as Horstman Creek moves south and cuts a broad band from the southeast boundary of the study area along the area's southern boundary, crossing over Freemans Bridge Road and south of the railroad tracks located near the river to beyond the eastern boundary of the project site.

The transportation network is dominated by Ballston Road (NYS Route 50) which comprises the northwest boundary of the site and Freemans Bridge Road (NYS Route 911F) which cuts diagonally through the site from its intersection with Ballston Road to the north and running generally southeast, crossing the Mohawk River into the City of Schenectady. The newly constructed Dutch Meadows Lane connects Freemans Bridge Road with Ballston Road, just south of the Wal-Mart site.



Photo 3: Freemans Bridge Road



Photo 4: Freemans Bridge Road

The focal area of the study along Freemans Bridge Road is primarily commercial, interspersed with some residences and several parcels of vacant land (Photo 3 and Photo 4). The new Wal-Mart is a dominant feature along the west side of Freemans Bridge Road. Single-family homes comprise the majority of land use along the western boundary of the study area, adjacent to Ballston Road (Route 50). Large parcels of agricultural land are found to the south and east of this residential strip (Photo 5).



Photo 5: Agricultural land



Photo 6: Boston & Maine Railroad

The Boston & Maine Railroad line bisects the study area in an east-west direction (Photo 6). The line is to the south of and parallel to Dutch Meadows Lane, extending east past the intersection with Freemans Bridge Road and following the southern boundary of the Schenectady County Airport (the airport is outside of the study area).

Agricultural land dominates the area south of the railroad tracks on the western side of the study area, while commercial uses predominate near Freemans Bridge Road and to the east as far as the Airport. Pockets of residential development occur within this section.

Wetland areas are found along Horstman Creek adjacent to the southwest-northeast running power line easement. Another wetland is located in the extreme west of the project area near the Mohawk River. The portion of Freemans Bridge Road south of the railroad tracks is characterized by primarily commercial uses, until south of the Kromme Kill, where a sizeable area of residential development is found off of Sunnyside Road (outside of the study area).

Just north of the Mohawk River, near the southwestern edge of the project area, is a small area of commercial and industrial uses. The remainder of the riverfront land is largely vacant and is separated by another rail line running generally northeast to southwest.

The Freemans Bridge Road area has emerged as Glenville's second major commercial center, spearheaded by the construction of the new Wal-Mart on the west side of Freemans Bridge Road (Photo 7). New town sewer lines increase the attractiveness of the area for development. Poised to accommodate development possibilities, the Freemans Bridge Road study area in the Town of Glenville may be developed in accordance with an overall plan that identifies suitable areas for various types of development and that identifies land best reserved for recreational uses or to be preserved as open space.



Photo 7: Wal-Mart

Section V of this report, “Recommendations and Concept Plan,” contains options for potential land uses. Transportation concerns, economic data, the physical characteristics of the study area, and the ideas and opinions expressed by Town residents and business owners formed the basis for these recommendations. The analysis and recommendations address the desire for green spaces, recreational opportunities, and pedestrian-friendly areas in the Freemans Bridge Road study area, along with the possibilities for controlled development in keeping with the character of the Town.

4.2.2 Assessment of Land Uses, Constraints and Opportunities

A number of factors helped to define the parameters of the analysis. These include:

- The majority of residents desire planned green space for both active and passive recreation.
- The area adjacent to the Mohawk River at the southeast boundary of the study area presents opportunities that have not yet been addressed.
- Lands currently in agricultural use are likely to be sold in the short- to mid-term for development.
- Vehicular traffic flow is a concern along the main corridors and intersections, necessitating thorough integration of transportation and land use planning.
- Land use is typically residential and commercial, along with some light industrial uses. There is a desire to foster a mixed-use pattern of land use as advocated in “new urbanist” concepts.
- A number of natural features like wetlands, streams/creeks, the riverfront, and flood plain, suggest an opportunity for uses such as recreation and open space.
- Man-made features, including the railroad lines and power line easements, tend to segment the study area.

Section V includes a discussion of development options, a series of recommendations, and a graphic concept plan, all of which have been informed by the inventory and analyses presented in this section. An Appendix is provided which includes detailed data used in the development of this report.

4.3 Economic Conditions/Demographics

This section is an update of selected information gathered for the Glenville Town Center Master Plan. This report also includes the 2000 Census information, which was not available in that report.

The Town of Glenville is located in northern Schenectady County, bordered by Saratoga County to the north and east, the Mohawk River to the south, and Montgomery County to the west. The Town encompasses approximately 50 square miles in area. Glenville is included in the Albany-Schenectady-Troy Metropolitan Statistical Area (MSA) as defined by the Federal Office of Management and Budget (OMB).

4.3.1 Population

Between 1990 and 2000, the population in Glenville decreased slightly, a pattern consistent throughout Schenectady County. The Town lost 588 people, a decrease of approximately 2.04%, while the County population decreased by 1.83%. However, the region, defined by the MSA¹, gained 1.64% during that same period. The U.S. Census Bureau's July 1, 2002 population estimates show that Glenville's population was 28,423, an increase of 240 people since 2000. The Town of Glenville accounts for about 19% of Schenectady County's total population.

Table 1: Population				
Year	Glenville	Schenectady County	Adjusted MSA	New York State
1990	28,771	149,285	861,424	17,990,455
2000	28,183	146,555	875,583	18,976,457
<i>Ten Year Change</i>	-588	-2,730	14,159	986,002
<i>Percent Change</i>	-2.04%	-1.83%	1.64%	5.48%
2006*	27,757	145,515	882,246	19,429,590
<i>Projected Six Year Change</i>	-426	-1,040	6,663	453,133
<i>Percent Change</i>	-1.51%	-0.71%	0.76%	-1,040
<i>Percent Change</i>	-1.51%	-0.71%	2.39%	0.76%
<i>Cumulative Change</i>	-3.52%	-2.53%	8.00%	1.52%

Source: Bureau of the Census, 1990 & 2000; Claritas projections marked by (*)

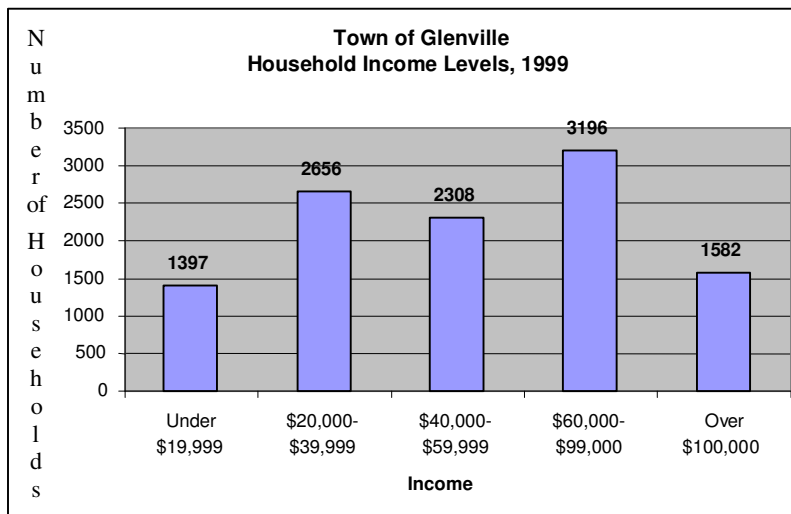
¹ The OMB changed the boundary of the Metropolitan Statistical Area in 1993. At the time of the 1990 Census, the MSA was made up of Albany, Schenectady, Saratoga, Rensselaer, Montgomery and Greene Counties. In 1993, the boundary changed, dropping Greene County and adding Schoharie County. Where possible, data corresponding to the MSA in 1990 has been adjusted to the 1993 definition and is denoted by the name "Adjusted MSA" in order to accurately compare with 2000 data.

4.3.2 Income

Household Income

The median household income in the Town of Glenville has grown since 1989². These figures were derived by adjusting the 1990 Census data to 1999 real dollars to compare with the 2000 Census (reported as 1999 dollars), using the change in the consumer price index as an indicator of inflation. The median household income grew by 2.14% or about \$1,098 over that period. Schenectady County as a whole lost about 1.59% in its median household income; about \$675. The adjusted MSA also lost value in its median household income by about 0.79%, or \$343, over the same period. New York State, however, showed a strong gain of 7.46% or \$3,011 (see Table 2).

The following graph shows the distribution of income in the Town of Glenville based on the 2000 Census. Peaks in income distribution occur in the upper-middle and lower-middle income groups respectively.



Per Capita Income

The per capita income of Glenville residents also increased since 1989, using the same formula to translate 1989 income figures into 1999 real dollars. Per capita income grew by \$1,938 or 8.48%. The County, State, and MSA levels also experienced growth in per capita income (see Table 2).

² The US Census reflects economic data, such as income, based on the previous entire year. Therefore the 1990 Census would report 1989 income figures in order to reflect the most recent entire annual data.

Table 2: Income Levels					
Median Household Income			Per Capita Income		
Town of Glenville			Town of Glenville		
	Median HH Income	Adjusted*		Per Capita Income	Adjusted*
1989	\$38,164.00	\$51,275.18	1989	\$17,012.00	\$22,856.45
1999	\$52,373.00	\$52,373.00	1999	\$24,795.00	\$24,795.00
% Change		2.14%	% Change		8.48%
Schenectady County			Schenectady County		
	Median HH Income	Adjusted*		Per Capita Income	Adjusted*
1989	\$31,569.00	\$42,414.48	1989	\$15,343.00	\$20,614.06
1999	\$41,739.00	\$41,739.00	1999	\$21,992.00	\$21,992.00
% Change		-1.59%	% Change		6.68%
Adjusted MSA			Adjusted MSA		
	Median HH Income	Adjusted*		Per Capita Income	Adjusted*
1989	\$32,446.00	\$43,592.77	1989	\$15,114.00	\$20,306.39
1999	\$43,250.00	\$43,250.00	1999	\$22,303.00	\$22,303.00
% Change		-0.79%	% Change		9.83%
New York State			New York State		
	Median HH Income	Adjusted*		Per Capita Income	Adjusted*
1989	\$30,056.00	\$40,381.69	1989	\$16,471.00	\$22,129.59
1999	\$43,393.00	\$43,393.00	1999	\$23,389.00	\$23,389.00
% Change		7.46%	% Change		5.69%

* - Adjusted for inflation to reflect 2001 dollar values. CPI information obtained from the Bureau of Labor Statistics.

Source: Bureau of the Census, 1990 & 2000

4.3.3 Age

Due to the aging Baby Boomer generation, the Town's population is growing older, a trend common today in many communities. In Glenville, only one age group outside of the Boomer (45+) cohorts saw a gain. The school age cohort, ages 5 -17, saw a small increase of 182, or 3.61%. The greatest decline was in the post-high school/college age group, ages 18-24. There was a decline of 617 people, or 30.25%, between 1990 and 2000. In the County and the MSA, the same cohort also showed the greatest decline over the 10-year period. The State also experienced a 7.8% decline in the post-high school/college age group (see Table 3).

Table 3: Age Distribution							
		Pre-School	School Age	Post HS/College	Young Adult	Adult	Seniors
	Median Age	0-4	5-17	18-24	25-44	45-64	65 +
Glenville							
1990	38.3	1,766	5,038	2,040	8,582	6,253	5,092
2000	41.9	1,459	5,220	1,423	7,412	7,356	5,313
% Change		-17.38%	3.61%	-30.25%	-13.63%	17.64%	4.34%
Schenectady County							
1990	35.6	10,400	23,781	14,682	45,973	29,746	24,703
2000	38.6	9,001	26,661	11,580	41,219	33,696	24,398
% Change		-13.45%	12.11%	-21.13%	-10.34%	13.28%	-1.23%
New York State							
1990	33.8	1,247,407	3,008,894	1,915,585	5,869,554	3,587,122	2,361,893
2000	35.9	1,239,417	3,450,690	1,765,453	5,831,622	4,240,923	2,448,352
% Change		-0.64%	14.68%	-7.84%	-0.65%	18.23%	3.66%
Adjusted MSA							
1990		58,765	142,468	100,563	276,685	161,587	121,356
2000	37.3	52,614	156,478	82,890	255,122	203,587	124,892
% Change		-10.47%	9.83%	-17.57%	-7.79%	25.99%	2.91%

Source: Bureau of the Census, 1990 & 2000; CDRPC

4.3.4 General Housing Characteristics

The Town of Glenville contains about 18% of the total housing units in Schenectady County, and about 19% of the County's population. The Town's median home value for an owner-occupied unit is \$99,900, about \$7,600 more than the County's median value for owner-occupied units. The median value in the Town, however, is less than the MSA and the State. However, the robust housing market in Glenville and the Capital District over the past three years has elevated median values significantly, rendering the 2000 figures obsolete for 2004 purposes.

Table 4: Housing Characteristics, 2000				
	Glenville	Schenectady County	MSA	State
Total Units - Housing	11,547	65,032	386,262	7,679,307
Total Units - Occupied	11,121	59,684	350,284	7,056,860
Total Units - Vacant	426	5,348	35,978	622,447
Median Year Built	1954	1948	1957	1954
Median Value	\$99,900	\$92,300	\$102,200	\$147,600

Source: Bureau of the Census, 2000

4.3.5 Households

Households decreased in size by 0.15 people between 1990 and 2000 in Glenville. The County and State also saw decreases in household size (see Table 5). This information cannot be compared at the MSA level due to the change in boundaries in 1993. The number of households in Glenville increased between 1990 and 2000. There were 680 more households

in 2000, an increase of 6.5%. There were also increases in the County, MSA, and State (see Table 5).

More than 92% of the households in Glenville are made up of four people or less. Two person households are the most numerous in Glenville, making up 36.58% of all households in the Town. The same trend is evident at the County, MSA, and State levels where most of the households are made up of four people or less and two person households are the most numerous in terms of overall percentage of households (see Table 5).

Table 5: Household Demographics				
Average Household Size				
	Town	County	MSA	State
1990	2.59	2.45		2.63
2000	2.44	2.38	2.41	2.61
Change	-0.15	-0.07	N/A	-0.02

Source: Bureau of the Census, 1990 & 2000

Number of Households				
	Town	County	Adjusted MSA	State
1990	10,470	59,165	330,573	6,634,434
2000	11,150	59,684	350,284	7,056,860
Change	680	519	19,711	422,426

Source: Bureau of the Census, 1990 & 2000

Household Size, 2000				
	Town	County	MSA	State
Total	11,121	59,684	350,284	7,056,860
1 person	2,877	18,261	102,859	1,982,537
2 person	4,068	19,819	116,579	2,091,285
3 person	1,749	9,351	56,254	1,157,624
4 person	1,605	7,618	47,407	1,000,251
5 person	592	3,182	19,498	497,166
6 person	160	894	5,543	195,152
7 or more	70	559	2,144	132,845

Source: Bureau of the Census, 2000

Household Size by Percentage, 2000				
	Town	County	MSA	State
Total	11,121	59,684	350,284	7,056,860
1 person	25.87%	30.60%	29.36%	28.09%
2 person	36.58%	33.21%	33.28%	29.63%
3 person	15.73%	15.67%	16.06%	16.40%
4 person	14.43%	12.76%	13.53%	14.17%
5 person	5.32%	5.33%	5.57%	7.05%
6 person	1.44%	1.50%	1.58%	2.77%
7 or more	0.63%	0.94%	0.61%	1.88%

Source: Bureau of the Census, 2000

4.3.6 Educational Attainment

The Town of Glenville is an educated community. It has a greater percentage of high school graduates and beyond than the County, State, or MSA. The Town also surpasses the County, State, and MSA in each level of college degrees. Glenville has a low percentage of individuals without a diploma, at 9.9%. The County, State, and MSA all have double-digit percentages, between approximately 14% and 21%, in the same category (see Table 6).

Table 6: Educational Attainment, 2000				
	Glenville	County	MSA	State
Less Than 9th Grade	2.61%	4.17%	4.19%	8.02%
9th to 12th Grade, No Diploma	7.29%	11.03%	10.20%	12.92%
High School Graduate (Includes Equivalency)	28.45%	30.95%	30.17%	27.75%
Some College, No Degree	18.73%	17.68%	17.27%	16.77%
Associates Degree	11.33%	9.84%	9.96%	7.17%
Bachelor's Degree	17.62%	14.57%	15.66%	15.58%
Graduate or Professional Degree	13.97%	11.76%	12.55%	11.79%
Total, Age 25+	20,120	99,568	584,792	12,542,536

Source: Bureau of the Census, 2000

4.4 Retail Market Summary

The Town of Glenville recently adopted the Glenville Town Center Master Plan. As a part of that plan, Peter J. Smith & Company performed a comprehensive retail market analysis. The following section is a summary and analysis of the data from that report and recommendations for the next steps to identify market opportunities for the Freemans Bridge Road Study area.

According to the Glenville Town Center Master Plan, its market analysis approach was conservative due to the amount of existing retail space in the Capital Region. The report drew its information from these sources:

- 1990 Census of Population and Housing
- Dollars and Cents of Shopping Centers 1997, Urban Land Institute;
- "Consumer Expenditure Patterns and Total Expenditure Reports," Claritas© Direct Marketing Information.

The report identified two trade areas for the Town. The primary area was the Town of Glenville itself. The secondary area was defined as the Albany-Schenectady-Troy MSA, which includes all of the region's major urban centers across six counties.³

The report identified market potential for the Town and the MSA. The Glenville market area has the capacity to spend approximately \$186.4 million annually on retail goods and services and the MSA market has the capacity to spend \$5.23 billion on the same goods and services. This data raises certain concerns. Because of the time this report was prepared, detailed

³ In 1993, the MSA was redefined by the Office of Management and Budget. It removed Greene County and added Schoharie to include it with Albany, Schenectady, Rensselaer, Saratoga, and Montgomery Counties.

economic information from the Bureau of the Census is from 1990. The 2000 Census data is not reflected in this analysis. In order to understand the current state of the market, the new data should be analyzed. It may identify increased or reduced potential for the primary and secondary market areas.

The report also identifies annual aggregate household expenditures based on annual sales of retail goods and services for the Town and MSA. That data is likely to be somewhat more accurate than the data in the market potential analysis because it draws its data from the 1997 Retail Census, the most recent retail census series. The report has identified that only \$27.95 million is being spent in the Town on retail goods and services. Within the entire MSA, \$2.92 billion is being spent on retail goods and services on a yearly basis.

Although the report compares the aggregate expenditure data to the market potential data to illustrate that there is great potential in the market at present, this may or may not be the case. Based on this data, the Town may be able to capture significant sales revenue from the primary market that may be spent elsewhere, as well as some revenue from the MSA. There have been a number of changes in retail space over the past ten years with significant changes in major shopping centers in the region that may affect this potential. For example, Crossgates Mall in Guilderland doubled its size in the mid-1990's; Mohawk Mall in Niskayuna was all but vacated by the late 1990's, yet new retail establishments have been built on the Mohawk Mall site and many new retail shopping areas have been constructed in the region throughout the decade. Recently, a Wal-Mart opened along Freemans Bridge Road in the Town of Glenville. Because of the number of changes that have occurred, the data may no longer be accurate. It is also unclear whether the data in the report has been converted into a constant dollar figure to reflect inflation. Otherwise, 1990 economic data when compared to 1997 economic data may show that there is an underserved market because the value of the dollar changed due to inflation between those years, reflected by the Consumer Price Index, which increased by 32.9, or 26.5%.

As a result of changes in the market and the availability of current data, it is highly recommended that the Town conduct a new market analysis. In addition, because of the small number of establishments by business type, highly detailed information may be suppressed by the Department of Labor for confidentiality reasons. To address this issue, the Town may want to consider conducting primary research with surveys and interviews to better understand the current market. Another option would be to approach the Department of Labor about obtaining more detailed data in a manner that still protects the confidentiality of businesses in the community. The DOL collects various establishment performance data but suppresses detail in smaller communities where it may be possible to provide business establishment-specific information.

4.5 Transportation Conditions

The study included an overview of existing information pertaining to local traffic and transit for roadways and intersections surrounding the project area. Information was provided by New York State Department of Transportation (NYSDOT), Capital District Transportation Committee (CDTC), Capital District Transportation Authority (CDTA), Town of Glenville Planning Department and Schenectady County Traffic Safety Board reference materials. All remaining data was collected by Transportation Concepts, LLP.

4.5.1 Background Data

The Town of Glenville and neighboring areas have many attractions both for commuter traffic and local residents, such as the Empire State Aerosciences Museum, Schenectady County Airport, Stratton Air National Guard Base, Collins Lake and Park, the Mohawk River, a variety of commercial activities, local schools, and area colleges. These features both sustain and add to the congestion along the main corridors throughout the study area. Several studies have been completed to help local planning agencies to better serve the public in the years ahead. The following provides a summary of these reports as they relate to the transportation component of the Freemans Bride Road Master Plan.

City of Schenectady – Urban Bike Route Master Plan recognizes the regional routes of Freemans Bridge Road, NYS 50, and Maple Avenue, as well as local connector roadways that serve these routes. It discusses function and use, including the promotion of a shared roadway with centerline and edge line striping for better travel lane definition and visibility for all users.



Photo 8: Mohawk-Hudson Bike-Hike Trail

In addition, there is a planned expansion of the Scotia/Glenville Bike Loop along Freemans Bridge Road to the Mohawk-Hudson Bike-Hike Trail (Photo 8). Bike lane standards include

provisions for on-street parking and no-parking scenarios, as well as roadway crossing recommendations for mid-block, railroad, and island conditions. Finally, this report is an excellent source of information on funding possibilities, and lists specific contacts and agencies that can be utilized to accomplish the Town's objectives.

Schenectady County Airport/Town of Glenville Land Use Study provides data regarding Annual Average Daily Traffic (AADT) volumes for Freemans Bridge Road, Maple Avenue, and NYS 50 in addition to intersection counts along Freemans Bridge Road at Maple Avenue and NYS 50. Federal Aviation Administration (FAA) restrictions are included, indicating Runway Protection Zones (RPZ) (see Figure 1 of that report) and the Special Task Force recommendations. Note that two of the four RPZs identified lie within or partially within the Freemans Bridge Road Master Plan Study area.

Glenville Town Center Master Plan discusses existing retail sales figures and origins as well as the retail potential of the remaining undeveloped parcels. The summary suggests that Glenville Town Center could sustain approximately 112,000 square feet (SF) more of retail development. It also addresses transportation issues attendant to expected development in the Town Center.

Findings of Thomas Melander, Town Traffic Technician

Working with the Town over the last several years, Mr. Melander's data provide an ongoing summary of accident severity and frequency, vehicular volumes, travel speed summaries and vehicle classifications for many of the study area roadways and intersections. His data are grouped according to state/county/town highways, with accident data providing the total number of accidents separated by type (property damage, personal injury or fatality). Additionally, Mr. Melander developed a rating system that assigns one point for a property damage accident, 28 points for a personal injury accident, and 1,000 points for an accident involving a fatality.

4.5.2 Roadways

The transportation system that serves the project study area consists of primary and secondary roadways, functionally classified as arterial, collectors, or local roadways. All roadways are generally level and conservatively considered to be located in an urban environment.

Primary Roadways

New York State 50 is classified as a north-south principal urban arterial that extends north from Mohawk Avenue (NYS Route 5) in the Village of Scotia, intersecting Freemans Bridge Road and continuing north to the Town of Ballston, New York. In the study area, NYS 50 generally consists of two 12-foot wide travel lanes with 6-foot wide paved shoulders. This section of roadway is in good condition and has no roadside curbs except at a few developed intersections. Roadside drainage includes closed and open ditch facilities. There are no sidewalks along this section of NYS 50. Previous traffic volume data for 1996 suggests

Average Annual Daily Traffic (AADT) of 20,200¹ vehicles along NYS 50 north of Freemans Bridge Road. The most recent New York State Department of Transportation (NYSDOT) Traffic Volume Report (TVR), issued in 2000, indicates a 1999 AADT of 20,500 north of Freemans Bridge Road and an AADT of 13,300 south of Freemans Bridge Road. The area nearest the project site has a volume to capacity (v/c) ratio of approximately 0.8 and a yearly growth rate of approximately 1.5 percent, with volumes north and south that currently exceed capacity levels (v/c>1). The curb cut ratio from Dutch Meadows Lane to Freemans Bridge Road is approximately 50 curb cuts per mile. The land uses for this section of level roadway include a mix of residential, commercial, and retail parcels. The posted speed limit is 40 miles per hour (mph) within the project study area.

Freemans Bridge Road (NYS Route 911F) is a principal urban arterial that extends north from Erie Boulevard, at the Freemans Bridge over the Mohawk River, ending at NYS 50 near the Worden Road/Airport Road intersection. The primarily level section of Freemans Bridge Road, south of Maple Avenue, consists of four (4) 12-foot wide travel lanes and 4-foot wide paved shoulders. In addition, there is an approximately sixteen-foot wide center median for turning movements. This section of roadway has concrete curbs, closed drainage, and no sidewalks. North of Maple Avenue, Freemans Bridge Road narrows to two (2) 12-foot wide travel lanes with 4-foot wide paved shoulders for each direction of travel, with concrete curbs at driveways and primarily open ditch drainage. Recently, top course restoration was completed from Freemans Bridge to just north of Maple Avenue. Currently, Mr. Melander's count data suggests an AADT of approximately 10,600 vehicles north of Maple Avenue and an annual growth rate of nearly 2% for this section of Freemans Bridge Road. There are approximately 85 curb cuts north of Maple Avenue to NYS 50, or approximately 75 curb cuts per mile. Land uses throughout this corridor are mixed between single-family residential, light industrial, and retail parcels. The posted speed limit within the project is area is 40 mph.

Maple Avenue (Schenectady County Route 29) is a minor urban arterial that extends east from Freemans Bridge Road and ends at the intersection of Glenridge Road. This section of level to rolling terrain roadway is in fair condition and generally consists of two (2) 12-foot wide travel lanes with 2-foot wide paved shoulders. Recently, a shoulder stabilization project was completed for Maple Avenue, effectively widening the road surface, with new roadway lane stripes as part of this improvement project. According to the Schenectady County Planning Department, this improvement project is one of many that are currently designated for this roadway. Other plans include the installation of a new traffic signal at the intersection of Alplaus Avenue, as well as a realignment of Maple Avenue between Alplaus Avenue and Freemans Bridge Road. Maple Avenue has concrete curbs at some driveways, with open ditch drainage facilities. There are no sidewalks. Land uses throughout this corridor are mixed between single-family residential, light industrial, and retail parcels. Previous studies suggest an AADT of 8,862 (in 1999)¹, increasing to 12,016 AADT in 2001² with average speeds of 46 MPH and between 13 and 22 accidents per year. The estimated growth rate is nearly 1 percent per year with a posted speed limit within the project area of 40 mph.

¹ Schenectady County Airport/Town of Glenville Land Use Study – Dec. 2000.

² Thomas Melander Data Summaries

Secondary Roadways

Sunnyside Road (Schenectady County Route 12) is classified as a local collector roadway with level terrain and serves primarily single-family residences. Sunnyside Road extends west from Freemans Bridge Road, intersecting NYS 50 in the Village of Scotia. This section of roadway is in good condition and consists of 11-foot wide travel lanes and 2-foot wide paved shoulders. The ADT along this section of roadway is approximately 6,100 vehicles with fluctuating growth rates both positive and negative as recorded. The roadway has no concrete curbs, open drainage, and intermittent sidewalks between Washington Avenue and Route 50. The posted speed limit on Sunnyside Road is 35 mph.

Worden Road (Schenectady County Route 26) is a local collector roadway with level terrain and serves single-family residences and public facilities. Worden Road extends west from NYS 50 and intersects Swaggertown Road. This section of roadway is in good condition and consists of two (2) 11-foot wide travel lanes with 2-foot wide paved shoulders. The ADT along this section of roadway is approximately 2,800 vehicles with recent growth rates of nearly four percent (4%). The roadway has concrete curbs near retail centers, open drainage, and no sidewalks. The posted speed limit on Worden Road is 30 mph.

4.5.3 Intersections

The intersections that will serve traffic generated by project area development include Freemans Bridge Road at: Sunnyside Road, Maple Avenue, Dutch Meadows Lane, and at the NYS 50/Worden Road/Airport Road intersection. For NYS 50, development may impact the intersections at Sunnyside Road, Dutch Meadows Lane, and the Freemans Bridge Road intersection.

4.5.4 Alternate Transit Modes

The alternate transit modes that exist within or adjacent to the project area are limited but include a pedestrian/bike path, rail lines, airport access, watercraft access, senior shuttle service, and Capital District Transportation Authority bus service.

Bicycles

As discussed under the Background Data portion of this report, several options are currently under review for connection to the existing bike routes and pedestrian paths. The on-street pedestrian/bike route system currently runs along Route 50 between the intersection of Freemans Bridge Road and the Town Center; an area not very conducive to bicycling or walking due to high traffic volumes and narrow shoulders.



Mohawk-Hudson Bike-Hike Trail

Bicycle traffic movements to the south exist as a shared roadway system (using the paved shoulder areas) into the City of Schenectady and Village of Scotia via NYS 50 and Freemans Bridge Road. A Portion of the Mohawk-Hudson Bike-Hike Trail (see photo above) is located along the Mohawk River in the Town of Glenville, between Freemans Bridge and Schonowee Avenue.

Train facilities

There are active and non-active rail lines in the study area. Passengers are accommodated through the Amtrak rail line which run approximately six (6) times daily from the Schenectady hub, running north through Saratoga Springs, west through Amsterdam, and southeast through Albany.

Freight travels on the Boston & Maine (B &M) line, which runs west/east through the center of the study area, serving the adjacent industrial developments. The B & M line has an at-grade crossing at Freemans Bridge Road and an underpass crossing at NYS 50. This line receives 3 to 4 mile-long freight trains per week carrying coal and finished chemical products to and from the CSX developments in Rotterdam Junction, nearby Schenectady yards, and the Scotia/Glenville Industrial Park.

The Delaware and Hudson (D&H) line, used primarily for freight transport, currently ends at a rail storage and service yard located just east of Maple Avenue and south of the Stratton Air National Guard Base. An abandoned western D & H line, parallel and south of the B & M line, is occupied by Niagara Mohawk Power Corporation for high voltage electric service lines. The abandoned southern D & H line is currently in the process of having bridge decking removed for the section that crosses the Mohawk River just east of Freemans Bridge Road.

The Central Pacific (CP) rail line has approximately 18 trains daily between Schenectady and Alplaus (Mohawk yard) lots. According to Mr. Ted Thompson, NYSDOT, the Schenectady passenger rail terminal at the intersection of Eastern Avenue and Erie Boulevard is too close to the study area for Amtrak to create an interim stop in Glenville. The westbound trains are accelerating out of Schenectady and the eastbound trains are braking for the Schenectady terminal and have insufficient distance to complete either action. He further states that the State Legislature has agreed to a resolution of the rail property tax issue, meaning that railroad owners are more likely to consider development near their R.O.W. The Boston & Maine line, although very active, has the potential for more development from the Scotia/Glenville Industrial Park, as well as from the Rotterdam and Guilderland Center Industrial Parks.

Air National Guard and Airport Facilities

Access to the Stratton Air National Guard Base is from Air National Guard Road off Maple Avenue along the eastern portion of the project area. Services of this facility are mainly limited to military operations, scientific missions to the north and south poles, and training exercises. Access to the Schenectady County Airport is located off NYS 50, at the northern end of the project area. This facility provides private flight traffic for personal and business uses, as well as military flights associated with the Stratton Air National Guard Base. Current airspace restrictions in the defined study area include maintaining runway protection zones and object free areas consistent with the Schenectady County Airport/Town of Glenville Land Use Study prepared by the Town and the Capital District Regional Planning Commission (CDRPC) in December of 2000. Project areas affected by runway protection zones include Freemans Bridge Road near NYS 50, Maple Avenue (midway between Freemans Bridge Road and Alplaus Avenue), Air National Guard Road, Habel Lane, and Old Habel Lane.

Watercraft data

Watercraft data can be found in the Schenectady County Waterfront Revitalization Plan, Freemans Bridge Boat Launch data, and New York State Canal Authority counts of pleasure craft and commercial traffic. Use of the launch near Freemans Bridge was noted in our field data collection; however, the launch is underutilized given the relative proximity to potential users.

Shuttle/Transit Service

The Town operates a senior shuttle service; however, service and ridership in the area of study is limited due to the lack of direct access and shelter areas for passengers. The Capital District Transit Authority (CDTA) provides limited service to this area as well. At this time, there is no significant demand for additional services. Currently, CDTA Route 78 (Schenectady West Loop) provides access between downtown Schenectady, the Village of Scotia, the Scotia-Glenville Industrial Park, and Rotterdam Square Mall. Weekday service passes through the study area at 7:00 AM, 3:00 PM, 8:00 PM, 9:00 PM, 10:00 PM and 11:00PM.

Truck Routes

Truck access is as fundamental as rail access for the success of industrial development. Currently truck access is limited to the east by underpass width and height restrictions on NYS

914V (Glenridge Road). Truck access to this area is from NYS 50, and Erie Boulevard, which has access to I-890, and subsequently to I-90 and I-88.

4.5.5 Pedestrians

Pedestrian access, in addition to multi-use paths, bike trails, or shared roadways, includes sidewalk areas and community spaces. In this regard, the project study area is not well provided for, with essentially no sidewalk areas except on individual business sites. Existing community space within the study area includes the recently developed Veterans' Memorial at the intersection of Freemans Bridge Road and NYS 50, which is not conducive to pedestrian functions due to proximity to adjacent roadways.

4.6 Transportation Data Collection and Analysis

This section uses all available traffic count data for project area roadways and intersections, supplemented by current traffic count data. In addition, information contained in NYSDOT, The Highway Sufficiency Ratings, 2000 and the NYSDOT, Traffic Volume Report, 2000 was used as well.

4.6.1 Existing Traffic Counts

In an effort to provide consistent analyses, Transportation Concepts representatives, volunteers from the Town's Planning Department, and staff from the Capital District Transportation Committee (CDTC) worked together to collect and analyze turning movement count data between mid-February and mid-May of 2002. Traffic count data was collected at the five (5) signalized intersections within the project area during the PM peak period as defined in previous studies. The signalized intersections along NYS 50 include the newly opened Dutch Meadows Lane, as well as the Worden Road/Freemans Bridge Road intersection. Freemans Bridge Road intersections include Dutch Meadows Lane, Maple Avenue, and Sunnyside Road. Consistent with previous CDTC models, all turning counts were conducted weekdays, Tuesday through Thursday between 4:00 PM and 6:00 PM. From this data the afternoon peak hour for these intersections was determined to be 4:15 PM to 5:15 PM. at Freemans Bridge Road.

The remaining unsignalized intersections, such as Sarnowski Drive, although important, were not included in the scope of this project. However, the SYNCHRO traffic model does include many other minor intersections for the benefit of future town traffic analyses.

4.6.2 SYNCHRO Analysis

The operating conditions of the intersections within the project study area were evaluated using the procedures in the 2000 Highway Capacity Manual (HCM) and SYNCHRO software provided by Trafficware. The analysis of an intersection includes a detailed investigation of all pertinent geometric and traffic conditions.

Two separate criteria are used to evaluate the operation of an intersection: Volume to Capacity ratio (V/C) and Level of Service (LOS). The capacity of an intersection is the quantity of traffic that can move through the intersection with the prevailing traffic, geometric configuration, and traffic control conditions. LOS refers to intersection operating conditions and is a function of the average delay experienced by motorists at an intersection. Level of Service

analyses are reported with best to worse designations of LOS A to LOS F. In addition, Intersection Capacity Utilization (ICU) LOS ratings are provided. These rates indicate how an intersection functions and how much reserve capacity is available to handle traffic fluctuations.

The current operating condition of the intersections surrounding the project study area were evaluated using the procedures in the 2000 Highway Capacity Manual (HCM) and SYNCHRO software (Version 5.0) provided by Trafficware. The analysis of an intersection is a detailed investigation of all pertinent geometric and traffic conditions. This method provides two separate, independent criteria to evaluate the operation of an intersection: Volume to Capacity ratio (V/C) and Level of Service (LOS). The capacity of an intersection refers to the quantity of traffic that can traverse the intersection under the prevailing traffic, geometric, and control conditions. LOS refers to the intersection operating conditions and is a function of the average delay experienced by motorists at an intersection. The results of an unsignalized or signalized analyses provide LOS designations from LOS A to LOS F. Unsignalized intersections LOS are based on intersection control delay. Level of Service is based on the delay experienced by turning movements from the major street and the minor street approaches. The methodologies for determining the peak hour Level of Service at signalized and unsignalized intersections is based on SYNCHRO and HCM 2000.

The delay indicated below is the time from when a vehicle stops at the intersection to when it proceeds through the intersection.

Table 7: LOS for Signalized Intersections	
LOS	Control Delay Per Vehicle (sec.)
A	< or = to 10.0 seconds
B	>10.0 and < or = 20.0
C	>20.0 and < or = 35.0
D	>35.0 and < or = 55.0
E	>55.0 and < or = 80.0
F	> 80 seconds
Source: <u>Highway Capacity Manual</u> , Transportation Research Board, National Research Council, Washington, D.C., 2000.	

Table 8: LOS for Unsignalized Intersections	
LOS	Control Delay Per Vehicle (sec.)
A	< or = to 10.0 seconds
B	>10.0 and < or = 15.0
C	>15.0 and < or = 25.0
D	>25.0 and < or = 35.0
E	>35.0 and < or = 50.0
F	> 50 seconds
Source: <u>Highway Capacity Manual</u> , Transportation Research Board, National Research Council, Washington, D.C., 2000.	

4.6.3 Intersection Summaries

Freemans Bridge Road

- @ Sunnyside Road: The results of the analysis suggest that during the PM peak hour period along Freemans Bridge Road at Sunnyside Road the southbound approach lanes and the northbound through lanes have LOS A conditions. The westbound approach and the northbound right turn lanes have LOS B conditions and the eastbound approach has a LOS C rating. Overall the intersection has a LOS A rating with an Intersection Capacity Utilization (ICU) of LOS D and is over 80 percent capacity.



Freemans Bridge Road at Sunnyside Road

- @ Maple Avenue: For all approaches, overall intersection and ICU ratings have LOS A conditions with the exception of the westbound approach along Maple Avenue, which has LOS B ratings. The capacity for this intersection is just over 50 percent.



Freemans Bridge Road at Maple Avenue

- @ Dutch Meadows Lane: The ratings for northbound and southbound approaches as well as the overall rating are LOS A at this intersection. The eastbound through and ICU ratings are LOS B, with LOS C ratings for the westbound approach and the eastbound left-turn condition.
- @ Worden Road/Airport Road: Both approaches along Freemans Bridge Road and overall conditions are LOS A. Both minor approaches (Worden Road and Airport Road) are rated LOS C, with an ICU rating of LOS B at nearly 70 percent capacity.
- @ NYS 50: Intersection analysis indicates LOS B ratings for northbound movements, overall operation, and ICU ratings at approximately 65 percent capacity. The southbound approach along Freemans Bridge Road is rated LOS A. For NYS 50 at Worden Road, NYS 50 approaches as well as the overall conditions are rated LOS A. For the same intersection, the eastbound approach is LOS B, and LOS C for the westbound approach with an ICU rating at nearly 75 percent capacity

- @ NYS 50 at Bancker Avenue: Each approach of NYS 50 and overall conditions are rated LOS A. LOS C ratings are given to the minor approaches along Dutch Meadows Lane and Bancker Avenue with an ICU rating for intersection capacity over 75 percent.



Freemans Bridge Road at Route 50

Overall: Intersections are considered to be in good operating condition if their respective ICU ratings are less than 80 percent. Currently, this condition holds for all study area intersections except Freemans Bridge Road at Sunnyside Road, which has an ICU rating of LOS D and 81.5 percent capacity. The reason for this low rating is a high level of through traffic volume as compared to the number of minor street critical movements given the existing “green” time and designated lane configurations. Given an excess of 13,000 AADT, this condition is also beginning to appear for all study area intersections along NYS 50.

4.6.4 Roadway Summaries

The SYNCHRO summaries for roadway segments on Freemans Bridge Road between intersections have an LOS C rating northbound from Erie Boulevard to Maple Avenue, an LOS A rating from Maple Avenue to NYS 50, and an LOS D rating on NYS 50 from Freemans Bridge Road to the Glenville Town Center. NYS 50 southbound has an LOS C rating from the Glenville Town Center to the intersection with Freemans Bridge Road. Freemans Bridge Road southbound, from NYS 50 to Dutch Meadow Lane has an LOS A rating, an LOS D rating from Dutch Meadows Lane to Maple Avenue, and an LOS B rating from Maple Avenue to Sunnyside Road. NYS 50 arterial conditions have LOS A ratings for both directions, but has an LOS D rating southbound to Freemans Bridge Road. With an AADT over 20,000 along NYS 50 north of Freemans Bridge Road, the area is over capacity by 20 to 30 percent.

It should be noted that even with sophisticated SYNCHRO software, actual conditions are likely to be somewhat different than indicated. The differences in driver habits, abilities, and reactions all affect the operation of a given intersection during peak periods. Some drivers take more risks in their actions; some use illegal movements (i.e. right-on-red when not permitted);

and others are distracted, which affects their reaction to traffic controls and vehicle operations. In general, intersections tend to operate at better LOS ratings than theoretically presented.

Taking into consideration all of the above conditions and factors, a general estimate of reserve vehicle capacity by individual intersection is provided in the table below. The reserve capacity for each intersection is determined by a number of factors; these volumes cannot be added together for a grand total of reserve vehicle capacity for the entire study area.

Table 9: Reserve Vehicle Capacity	
<i>Intersection</i>	<i>Reserve Capacity</i>
Freemans Bridge Road/Sunnyside Road	850 vehicles
Freemans Bridge Road/Maple Avenue	1,720 vehicles
Freemans Bridge Road/Dutch Meadows Lane	1,000 vehicles
Freemans Bridge Road/Worden Road/NYS 50	500 vehicles
NYS 50/ Bancker Avenue	1,280 vehicles

5. RECOMMENDATIONS AND CONCEPT PLAN

5.1 Characteristics of Traditional Development

The Freemans Bridge Road Master Plan calls for redevelopment and new development that promotes traditional principles such as walkable neighborhoods and streets, common open space and civic areas, connectivity between residential and commercial neighborhoods, location of commercial buildings closer to the street, and architecture that improves typical suburban and urban development. This movement towards a traditional style of development pattern has been dubbed “neo-traditional development” or “new urbanism,” which refer to the pattern of growth that characterized vibrant urban and village settlement patterns in the United States prior to the era of suburban sprawl. The concept of “traditional development” arose as, throughout the country, citizens recognized the problems created by urban sprawl, including the lack of walkable areas within communities, increasing conflicts between pedestrians and vehicular traffic, the loss of community character, and a number of other problems endemic to our vehicular-oriented society.

Traditional development is intended to mitigate these problems by creating communities that are designed for people. It promotes the creation and restoration of diverse, walkable, mixed-use communities, comprising the same components as conventional development, but assembled in a more integrated fashion. A traditional community will include housing, work places, shops, entertainment, schools, parks, and civic facilities, all within walking distance of one another. When feasible, public transit is preferred over increasing road and highway capacity. The characteristics of the traditional development movement include:

- **Walkability** – Many popular destinations are located within a ten-minute walk of home and work. Streets are pedestrian-friendly: buildings are close to the street, providing an attractive “street-face;” streets are tree-lined; on street parking may be provided; parking lots are screened from view; garages are accessed through a rear lane; narrow streets slow traffic; and a few select streets are pedestrian-only (see Figure A-1 and A-2).

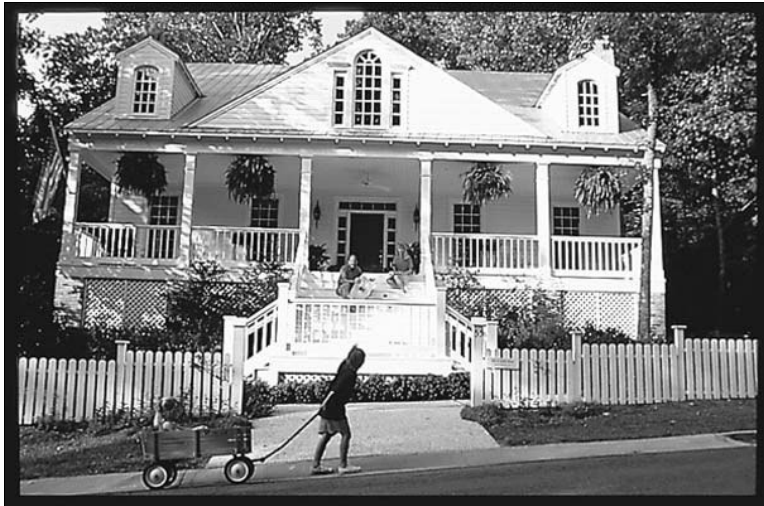
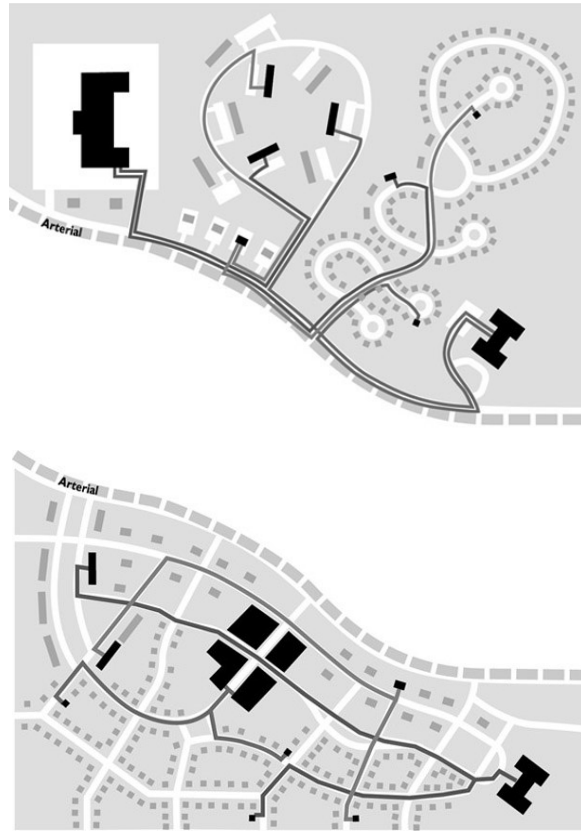


Figure A-1. Walkable neighborhoods create a sense of community.



Figure A-2. Wide sidewalks with street trees provide physical and psychological barriers that make pedestrians feel safe.

- **Connectivity** – A network of interconnected streets disperses traffic and eases walking; a street hierarchy of boulevards, narrow streets, and alleys is created, and a well-designed pedestrian network and public realm makes walking pleasurable (see Figure B and Figure C).



Traditional “trip assignment”

Figure B. In a typical suburban layout (top), even short trips are directed to arterial roads, creating traffic congestion. Under traditional “trip assignment,” local roads become more useful for local trips. Traffic is distributed rather than coagulated.



Figure C. Multi-use path and sidewalk systems provide safe linkages throughout communities.

- **Mixed Use** – Traditional development includes a mix of shops, offices, apartments, and homes within neighborhoods (see Figures D-1 and D-2).



Figure D-1. Mixed-use town center with pedestrian-friendly sidewalks.



Figure D-2. Mixed-use retail, office, and residential.

- **Variety of Housing Types** – Mixed housing refers to a range of housing types (apartment, townhouse, duplex, single family, etc.) in a variety of sizes and prices all located in proximity, thereby encouraging diversity among residents with regard to such characteristics as age and economic status (see Figure E-1, E-2, and E-3).



Figure E-1. Quality architecture.



Figure E-2. Variety of housing types.



Figure E-3. Multi-family housing.

- **Quality of Architecture and Urban Design** – Aesthetics, human comfort, and creating a sense of place are emphasized. Civic uses and sites are prominently located within the community. Scale of architectural elements relates to human scale (see Figures F-1, F-2 and F-3).



Figure F-1. Public open space in town center.

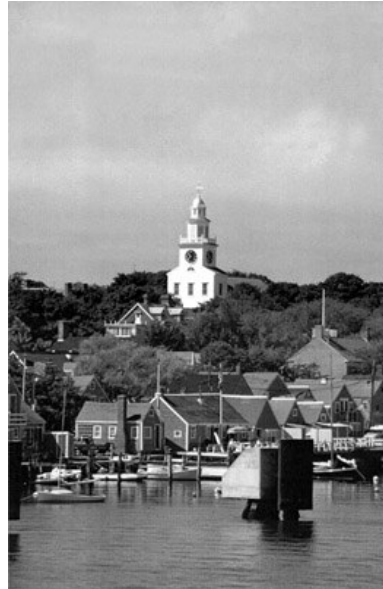


Figure F-2. Public or civic buildings should stand out from other buildings in design and scale.



Figure F-3. Additional parking in rear of buildings in commercial areas.

- **Traditional Neighborhood Structure** – The neighborhood has a discernable center and edge, with public space located at the center. Public open space is designed as civic art. A variety of uses and densities occur within a ten-minute walk. The highest densities are at the town center, becoming progressively less dense towards the edge of the community. Environmental concerns, such as animal habitats, stormwater management, and location and variety of plantings are integrated into the planning matrix (see Figures G and H).

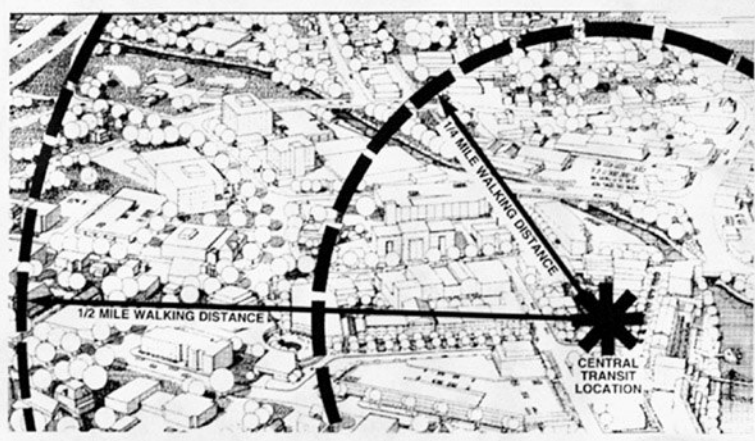


Figure G. 10-minute walk.



Figure H. Public space at center for community gathering.

- **Increased Density** – The proximate location of residences, shops, and services make walking easy and pleasant, increase convenience, and increase environmental benefits from reduced automobile use (see Figure I).



Figure I. Compact development.

- **Smart Transportation** – Public transit is encouraged wherever possible. Pedestrian-friendly design promotes use of walking, bicycling, and rollerblading as daily transportation, in addition to recreational use (see Figure J).



Figure J. Bike lanes promote alternate means of travel.

- **Sustainability** – Development and redevelopment minimize environmental impact and encourage “eco-friendly” technologies. Attention is given to energy efficiency, reduced use of fossil fuels, and increased use of locally derived products.

- **Quality of Life** – Traditional development as exemplified in communities exhibiting many of the characteristics described previously results in a higher quality of life for residents (see Figures K-1 and K-2).



Figure K-1. Mixed-use buildings with architectural integrity combined with pedestrian-friendly sidewalks results in a higher quality of life.



Figure K-2. Community open space is one barometer of quality of life.

These characteristics should be applied to individual development projects as they arise. Regulatory reform, in the form of design guidelines or zoning ordinances, can ensure uniform application of these traditional principles. In addition, these ideals should be considered when implementing the specific land use recommendations listed below.

5.2 Land Use and Development Recommendations

5.2.1 Plan Background and Rationale

The development of the Freemans Bridge Road Master Plan considered many factors. These include natural constraints, capacity of the existing highway system, physical barriers to development (i.e. railroad tracks and proximity to the runway protection zones of the Schenectady County Airport), water and sewer service, and public input.

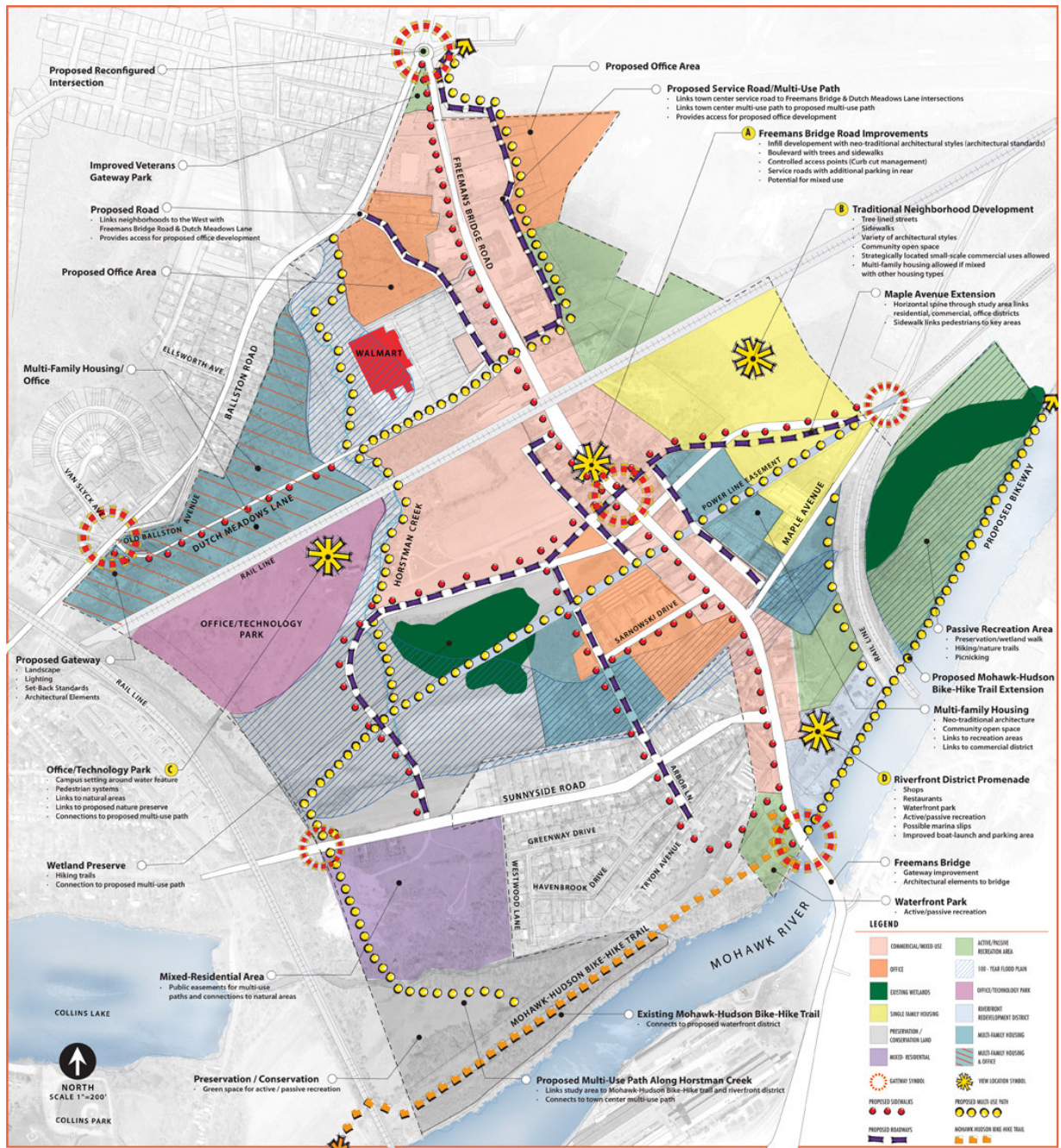
It was also decided very early in the planning process that the town did not want to develop a master plan for the Freemans Bridge Road area that promoted goals that competed with those of the Glenville Town Center Plan. More specifically, the town did not want to encourage additional large-scale retail development in the Freemans Bridge Road corridor since the Town Center has historically been and will continue to be Glenville's retail "hub."

Because of these various considerations, the Freemans Bridge Road Master Plan primarily calls for a mixture of new single-family, multi-family, office, and multi-use tenant development. The Plan also calls for a series of new roads, sidewalks, and multi-use paths throughout the study area to accommodate existing and proposed development.

The Freemans Bridge Road Master Plan also calls for a great deal of open space, conservation areas, and recreational features. This was the result of a desire to protect natural features, environmentally significant areas, and areas difficult to develop due to physical barriers. Protection of natural resources and the preservation of open space also drew support from the public, which was demonstrated at the various public information meetings and hearings that were held during the planning process.

In short, the Freemans Bridge Road Master Plan strives to balance growth and preservation, while not overwhelming existing roadways and infrastructure. Where new growth is to occur, it should be of high quality, and should embody all of the principles of traditional development noted previously. Further, development should not occur in a vacuum. As new development is proposed, it should be evaluated in the context of how it fits in to the overall plan for the Freemans Bridge Road study area. If proposed development is not compatible with the Plan, or if there is no evidence of connectivity to adjacent properties, such development should not occur within the study area.

5.3 Proposed Land Uses and Plan Elements



FREEMANS BRIDGE ROAD MASTER PLAN

ADOPTED JUNE 16 2004

RIVERSTREET
PLANNING & DEVELOPMENT

SYNTHESIS

Transportation
Concepts



CAPITAL DISTRICT TRANSPORTATION COMMITTEE
1100 Capital Circle, Suite 100, Greenville, SC 29601
Phone: (252) 498-2444
Fax: (252) 498-2444

Freemans Bridge Road Master Plan

The Plan calls for a variety of land uses through the designation of development “zones.” Not to be confused with zoning districts, these land use or development “zones” target various portions of the study area for certain types of development, and various accompanying amenities. Unlike zoning districts, the boundaries of the land use/development zones depicted

on the Plan are flexible, and are meant to be more conceptual than zoning districts. The various zones and features are discussed under broad headings as follows:

Commercial Development

West of Freemans Bridge Road, a large tract of land south of the Boston and Maine rail line has significant potential for new retail, office, and/or light industrial growth. The Master Plan proposes development of an office/technology park for much of this area, constructed as a campus-style facility with buildings surrounding an attractive, man-made water body. It also includes a system of pedestrian trails that link to natural areas and to a proposed multi-use (pedestrian, bicycle, roller-blade) path.

Infill development of commercial structures would be concentrated along Freemans Bridge Road. The Master Plan calls for redevelopment to be focused on Freemans Bridge Road between Maple Avenue and the Boston and Maine rail line. This node would set the tone for development of the larger project area, with tree-lined boulevards, sidewalks, and controlled access points to the buildings (i.e., managing curb cuts with shared entry drives). The area would highlight the potential of the Freemans Bridge Road corridor, using design guidelines to achieve planned, neo-traditional development. Mixed-use (commercial/residential) would be encouraged as an example of the comfort and convenience that can be achieved with this type of development.

The northeast portion of the study area, east of the commercial activity along Freemans Bridge Road, is appropriate for additional office development, as are the areas along Dutch Meadows Lane. Originally constructed to serve Wal-Mart, Dutch Meadows Lane offers an excellent opportunity for planned development, and could include new multi-family housing, along with office development. The proposed office development in the northeast portion of the study area would be accessed by a new service road, as well as by a multi-use path. The development would link with the Town Center area via roadways and pathways.

Residential Development

Residential development is integrated throughout the study area. A variety of housing types are suggested, offering neighborhoods of single-family homes, multi-family housing options, and housing in conjunction with commercial development, creating mixed-use areas in a neo-traditional style. A traditional neighborhood development of single and/or multi-family homes with tree-lined streets, sidewalks, community open space, and residences in a variety of configurations and architectural styles is suggested on the eastern edge of the study area between Maple Avenue and the rail line.



Traditional Neighborhood Development

South of Sunnyside Road, the Master Plan calls for a mixed residential area. Easements should be acquired to allow for the construction of multi-use paths that will provide access to recreational areas and the Mohawk River, as well as to various developments within the Freemans Bridge Road Master Plan area.

In addition, as described previously in the commercial development section, multi-family housing and/or office development is called for along Dutch Meadows Lane between Ballston Road and Horstman Creek. Sidewalks along Dutch Meadows Lane would make the area more amenable to pedestrian activity.

Recreation/Conservation Areas

The Freemans Bridge Road Master Plan study area includes considerable frontage along the Mohawk River. The Plan identifies areas for a variety of recreational uses. The southernmost portion of the study area, bordered by Collins Creek and Tryon Avenue to the north, should be preserved primarily for conservation purposes, but could potentially include active recreation fields. The existing Mohawk-Hudson Bike-Hike Trail runs parallel to the river through this area.

A Riverfront District should be established where the river turns north on the eastern side of Freemans Bridge Road. The district would include a promenade along the river with shops and restaurants. The parkland adjacent to the river would include parking facilities to serve park visitors and those using the improved boat launch facility in this area. Further to the northeast, beyond the existing rail line, are wetlands and other land within the 100-year flood plain. This area is appropriate for such improvements as a boardwalk nature trail, walking trails and picnicking facilities.



Riverfront Promenade

The 100-year flood plain extends from near the rail line south of Maple Avenue to the western edge of the study area, widening significantly as it moves to the west and continuing north along Horstman Creek through the Wal-Mart site. (Wal-Mart created wetlands as mitigation for constructing a portion of its parking lot within an Army Corps of Engineers-regulated wetland.) A state-designated wetland lies within this area, east of Horstman Creek and approximately equidistant from the rail line and Sunnyside Road. The Plan suggests dedicating this area as a wetland preserve.

Another open space is located adjacent to the Schenectady County Airport in the northeast portion of the study area. This land is in a runway protection zone and is appropriate for use as green space.

Veterans Memorial Park, the final area of parkland, is located at the intersection of Freemans Bridge Road and Route 50. It is recommended that this small park be improved to be more aesthetically pleasing, especially to motorists, since it is located in a heavily used vehicular corridor.

Multi-Modal Access

A system of multi-use trails will improve safety for pedestrians and bicyclists, minimize conflicts with vehicles, and permit access to residential, commercial, and recreational areas throughout the study area and beyond. In addition, the trail will link with the existing Mohawk-Hudson Bike-Hike Trail along the river and with the proposed Town Center multi-use path. The proposed trail follows Horstman Creek from Ballston Road southward into the 100-year floodplain where it meets with a proposed trail running east-west along the existing power line easement and continues to the Mohawk-Hudson Bike-Hike Trail along the river. This existing trail can be followed along the waterfront. The Plan also proposes continuing a bikeway from the east side of the bridge northeast along the river to the hamlet of Alplaus, and then north to the Town's new passive park ("Cozy Dale") along Glenridge Road. The trail could then be extended north from Glenridge Road to Saratoga County via the former trolley line, eventually hooking up with the existing Zim Smith Trail.

Gateways

Three proposed major gateways identify the main arrival points to the Freemans Bridge Road study area. They are:

- At Freemans Bridge entering Glenville after crossing the Mohawk River – architectural elements related to the bridge, signage, and general landscape improvements are suggested.
- At the intersection of Route 50 and Dutch Meadows Lane, on the western edge of the study area – new landscaping, lighting, and architectural elements would define this gateway.
- At the intersection of Route 50 and Freemans Bridge Road – a reconfigured traffic pattern is proposed along with site improvements and architectural elements denoting this entry point. An improved Veterans' Memorial Park is also slated for integration into the gateway design.

In addition, two secondary gateways are proposed:

- At Sunnyside Road at the western boundary of the study area – signage and related landscaping would direct visitors to the office/technology park to the north, the residential area to the south, and the system of multi-use trails throughout the conservation and park areas.
- At the intersection of Maple Avenue with the proposed Maple Avenue Extension – signage and landscaping would direct visitors to key sites within the Freemans Bridge Road study area.

Prototype Mixed-Use Development Area

A node of redevelopment at the intersection of Freemans Bridge Road with the proposed Maple Avenue Extension is marked for an area of concentrated infill development, using neo-traditional architectural styles. This node will also feature construction of a boulevard, sidewalk, service roads, and parking to the rear of commercial properties, and development of centrally located community open space.

5.3.1 General Recommendations

- It is recommended that an in-depth market analysis be conducted in order to identify the strategies for economic development that are in keeping with the desires of the community and have the greatest likelihood for success.
- Sidewalks should be constructed along the proposed extension of Maple Avenue to accommodate pedestrians from new development.
- Traditional neighborhood development strategies, which include tree-lined streets, sidewalks, a variety of architectural styles, and community open space are suggested.
- Multi-family housing should be located adjacent to the Waterfront District (refer to concept graphic); this would be characterized by neo-traditional style architecture and community open space and be linked to the waterfront and commercial areas by sidewalks and bike lanes/trails. Additional areas recommended for multi-family housing are suggested along Dutch Meadows Lane to the west of Horstman Creek.
- Commercial development, including an office/technology park, is recommended in the western portion of the study area, south of the railroad tracks. The office/technology park should be developed in a campus-like setting, enhanced with linkages to green/recreational areas and including an on-site water feature (which also serves for stormwater retention).



Office/Technology Park

5.3.2 Open Space/Recreation Recommendations

- The Master Plan recommends development of a Waterfront District to take advantage of the ambience of the Mohawk River. The District should include features like a waterfront park, passive and active recreation areas, marina slips, an improved Freemans Bridge Boat Launch and parking area, and selective commercial development, such as restaurants. A promenade along the water's edge is also suggested.
- The Plan recommends an extension of the Mohawk-Hudson Bike-Hike Trail to connect to the Waterfront District.
- Passive recreation areas associated with the Waterfront District could include a wetland boardwalk, a nature trail, and facilities for picnics.

5.3.3 Freemans Bridge Road Corridor Development Recommendations

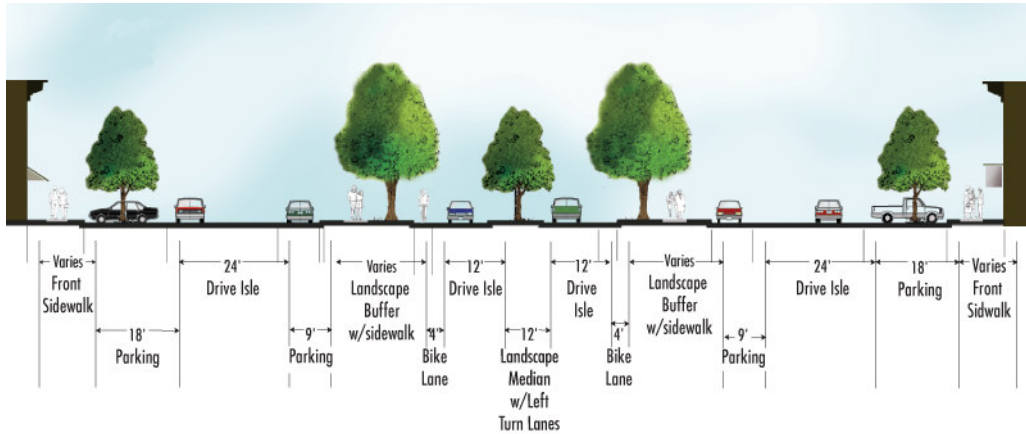
- Infill development that emphasizes neo-traditional style architecture is recommended.
- A vocabulary of design standards should be developed to serve as guidelines for new construction and renovations.
- Redesign Freemans Bridge Road to incorporate a planted boulevard and provide tree-lined sidewalks.
- Encourage parking in the rear of businesses.

5.3.4 Prototype Mixed-Use Development Area

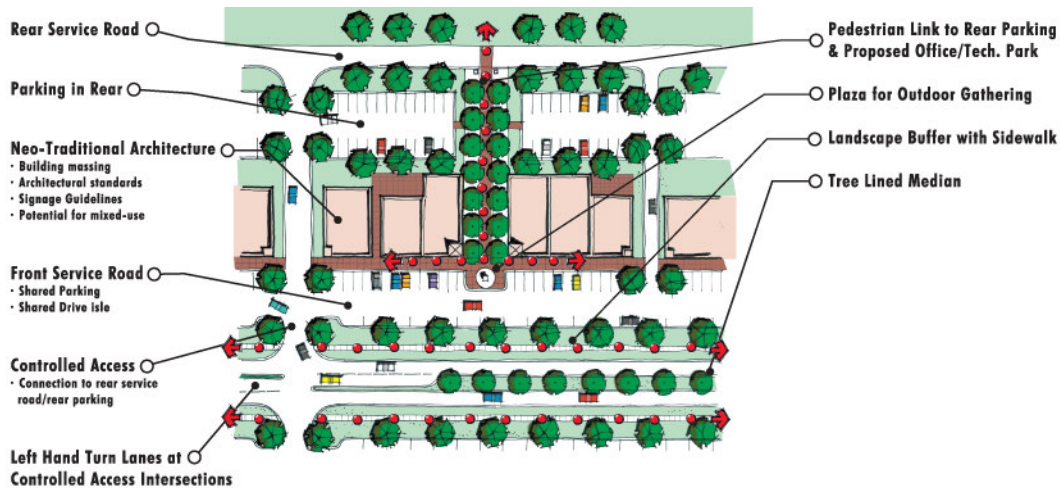
- Develop the area along Freemans Bridge Road from the proposed extension of Maple Avenue north to the railroad tracks as a mixed-use prototype.
- Suggested road improvements include a central landscaped boulevard, access road with limited, short-term parking, majority of parking in rear, and tree-lined sidewalks.
- Create a landscaped buffer between Freemans Bridge Road and the proposed access road.



Commercial Core Concept Rendering



Commercial Core Concept Cross Section



Commercial Core Concept Plan

- Eventually include a bike lane adjacent to the sidewalk.
- Encourage infill development
- Create design standards to guide new development or renovations.

5.4 Transportation

The challenge in the transportation planning portion of the Freemans Bridge Road Master Plan was to adequately respond to existing traffic congestion while creating recommendations to deal with future land use impacts mentioned above. Several recommendations have been made to accomplish this goal, such as the construction of new roads and access management efforts. However, in an effort to comprehensively analyze the transportation impacts of the land use recommendations of this Master Plan, a comparison of both existing and future traffic conditions is included in the following pages.

5.4.1 Development Potential

To help determine the potential transportation impact from activity related to the land uses included in the Master Plan, two future build-out scenarios were examined. Both scenarios assumed maximum, or full, build-out of developable lands within the study area but under different zoning standards. Maximum build-out is the amount of building square footage that could theoretically be constructed using all developable land in an area, with the applicable zoning regulations determining maximum allowable square footage of buildings per acre. Developable lands are those assumed substantially free of environmental and topographical constraints.

Table 11 shows two future development scenarios for full build-out conditions that could theoretically occur under the current zoning regulations and full build-out under zoning that would be consistent with land uses in the Freemans Bridge Road Master Plan. The estimated maximum build-out under the proposed zoning is considerably less than under the current zoning conditions. The type of development is also more diversified, and it makes considerations for open space and recreation areas. Additionally, improvements to the transportation system are proposed to help mitigate the impact of expected growth. Full build-out of the site under the current zoning is estimated at roughly 9 million square feet of development, compared to about 3.7 million square feet under the proposed land use plan.

Looking at development trends in the region and in the Town of Glenville over the last fifteen years, it does not seem plausible to expect full build-out of the area to occur soon. Commercial land use growth in the airport area of the Town of Colonie and the RPI Technology Park in North Greenbush, for example, has averaged about 286 square feet per year per developable acre over the last twelve years. These two areas have experienced more robust commercial and technology-oriented growth than has the Town of Glenville. Residential development has also been modest in Glenville, averaging about 50 units per year. The type and pace of development will depend on regional and local demand for office, research, housing, and retail services, and the vision for the community expressed in the Town's Comprehensive Plan. Full build-out of the proposed land use plan may be reached by 2030, assuming that both regional and local economic conditions are favorable for exceptionally strong and sustained growth. Although possible, this scale of development has not been experienced to date in the region.

Table 10: Potential Maximum Build-Out by Land Use Type

Land Use Type	Existing Zoning	Proposed Land Use Plan
Commercial		
General Office	4,835,160 SF	1,830,240 SF
Professional Office	468,000 SF	562,440 SF
Research & Development	3,789,720 SF	548,856 SF
Retail	2,014,560 SF	758,047 SF
Residential		
Single Family	90 Units	118 Units
Apartment/Townhomes	4 Units	2,732 Units
Riverfront Recreational/Commercial	100,000 SF	100,000 SF

Notes: Development levels in this table are not cumulative. For example, existing zoning can accommodate either 4.8 million square feet of general office or 2.0 million square feet of retail, and 468,000 square feet of professional office or 75 single-family homes, not both. A new zone, Multi-Family Housing/Office under the Master Plan zoning proposal, could support 1,012 apartments or 810,000 square feet of commercial space, not both. Land use by zoning category is described in more detail in the Appendix A of this report.

5.4.2 Existing and Future Traffic Demand

Development in the Town of Glenville currently generates about 11,250 vehicle trips during the afternoon peak hour. Based on CDTC's STEP model, development in the Freemans Bridge Road corridor currently accounts for 18 percent of total travel in the Town, generating about 2,025 vehicle trips during the afternoon peak travel hour and 20,000 vehicle trips on an average weekday. CDTC's STEP model is a series of traffic models used with VISSUM traffic simulation software.

The approach to trip generation used in this section consisted of applying a known trip rate derived in part from local traffic and land use data, and data collected nationwide and reported in the sixth edition of the *ITE Trip Generation Manual*. Trip Generation assumptions and calculations are presented in Appendix A of this report.

The total number of peak hour trips attracted to, and produced by, development is summarized in Table 11 for current conditions, and full build out under both zoning options. Under existing zoning conditions, 14,940 peak hour vehicle trips could be generated under full build-out conditions. Under the zoning proposed in the Freemans Bridge Road Master plan, roughly 7,390 vehicle trips would be generated. Truck traffic would total about two percent of all trips.

Table 11: Trip Generation by Zoning Scenario		
Land Use/Zoning Scenario	2003 Land Use	Full Build-out
Existing Zoning	2,025 vph	14,940 vph
Freemans Bridge Master Plan Zoning	2,025 vph	7,739 vph

5.4.3 Travel Patterns

The orientation of most peak hour trips under current traffic conditions is to the south towards the city of Schenectady, summarized in Table 12. These patterns will remain consistent for the near future. There may be a slight shift in travel to the north in the next ten years, due to continued residential development in southern Saratoga County.

Table 12: Traffic Patterns Used to Assign Peak Hour Travel	
Origin/Destination	Existing Traffic Patterns
Rte 50 towards Glenville Center and Saratoga	22%
Freemans Bridge Rd. south to City of Schenectady	38%
Maple Ave. East of Freemans Bridge Rd.	14%
Southwest Towards Village of Scotia	26%

5.4.4 Traffic Impact Attendant to Expected Development

Future travel demand was calculated using land development forecasts cited in Table 11. Travel was assigned to the roadway system using travel distribution patterns summarized in Table 12. The existing and expected future full buildout traffic demand for roadways serving the study area are shown on Maps 1-3. Table 13 on page 61 summarizes two-way peak hour demand for selected roadways serving the study area.

Highway Capacity Manual procedures were used to evaluate the relative effectiveness of the existing street system to accommodate probable future increases in peak period traffic demand. The estimates of traffic demand derived from the land use planning process were evaluated against established capacity and level-of-service criteria. This evaluation identified areas of traffic congestion and delay. The evaluation included analysis of the following intersections; Freemans Bridge Road/Route 50, Route 50/Dutch Meadows Lane, Freemans Bridge Road/Dutch Meadows Lane, Freemans Bridge Road/Maple Avenue, and Freemans Bridge Road/Sunnyside Road. Analyses of these intersections, as well as individual highway links, were conducted for existing land use conditions and two different growth scenarios.

In addition to the capacity analysis, traffic demand forecasts were also evaluated against threshold criteria that define the compatibility between traffic and adjoining land use. This analysis identified streets in the study area where traffic volumes conflict with residential living

and commercial street environments. Neighborhoods or streets that would benefit from pedestrian and bicycle connections were also identified in this analysis.

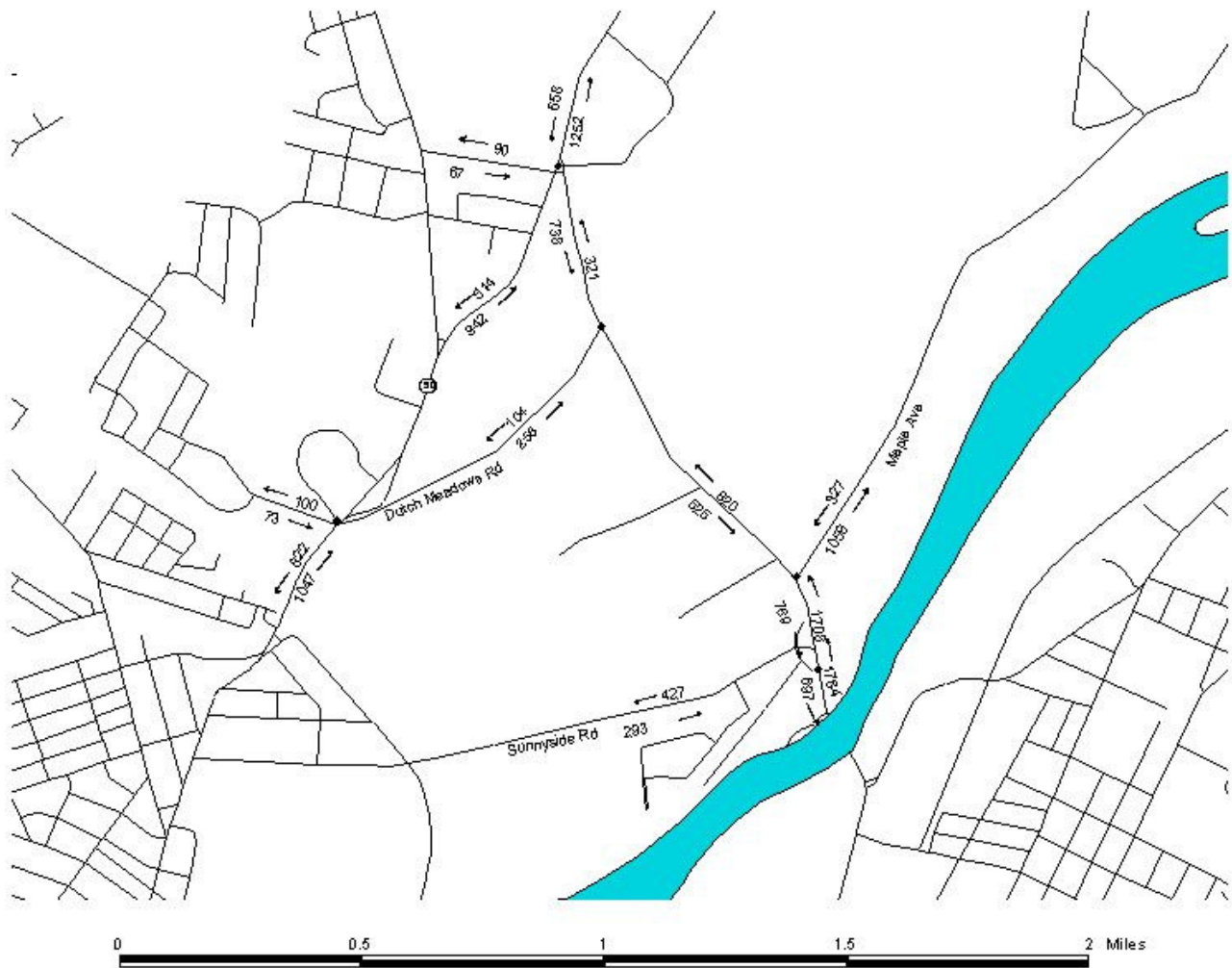
5.4.5 Capacity and Level-of-Service

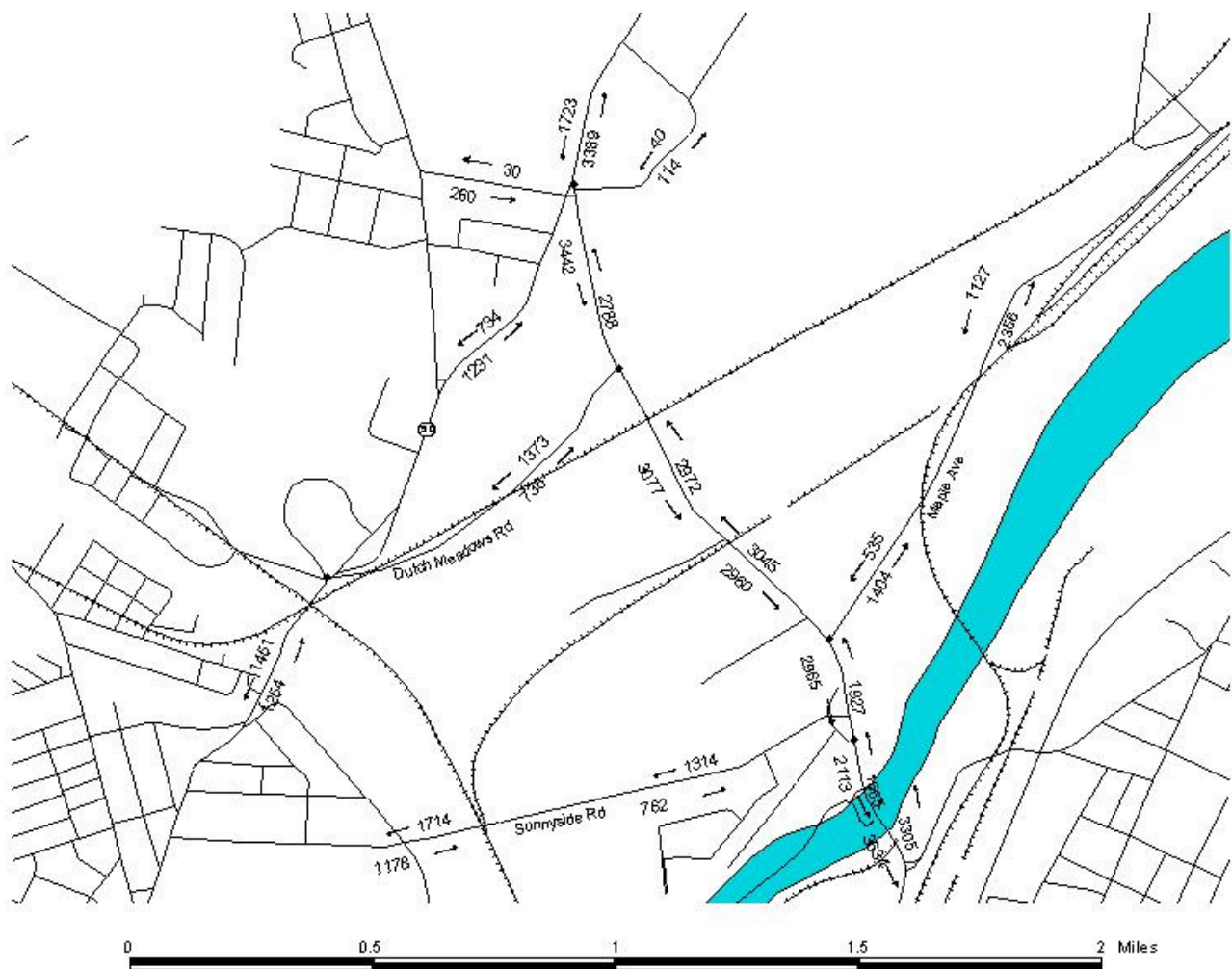
Given the dominant role of the automobile in meeting traffic demand, traffic is the primary transportation issue facing the town. Traffic congestion produces many adverse effects on the community including travel delays, increased fuel consumption, diminished air quality, inconvenience and irritation to motorists, and increased traffic conflict and vehicular crashes. Traffic also contributes to the potential diversion of traffic from congested areas to residential streets.

Traffic conditions were analyzed using accepted engineering practice. Capacity analysis was performed at the five intersections. The intersections were evaluated in terms of volume-to-capacity ratio (V/C) and level-of-service (LOS) using traffic counts compiled by CDTC staff, town of Glenville Planning Department, and Transportation Concepts. Volume-to-capacity ratios measure the physical ability of an intersection to accommodate additional traffic, while level-of service is a measure of average vehicle delay at the intersection. Level-of-service can range from A to F. LOS E corresponds to delays in the range of 40 to 60 seconds, and is generally considered to be the maximum acceptable delay to motorists in a suburban environment.

In addition to intersection analysis, capacity threshold analysis was also performed for “mid-block” segments on the network. Capacity threshold analysis was designed to estimate reserve capacity of the highway system for mid-block locations. This mainline analysis looked at the physical ability of each road to carry existing traffic volumes without any improvements to the highway system. Comparing mid-block volumes against current and theoretical mid-block capacities led to the identification of deficiencies. Analysis was conducted using guidelines adopted by CDTC for maximum acceptable volumes.

Map 3
Existing (2003) PM Peak Hour Traffic Demand on Selected
Roadways Serving the Freemans Bridge Study Area

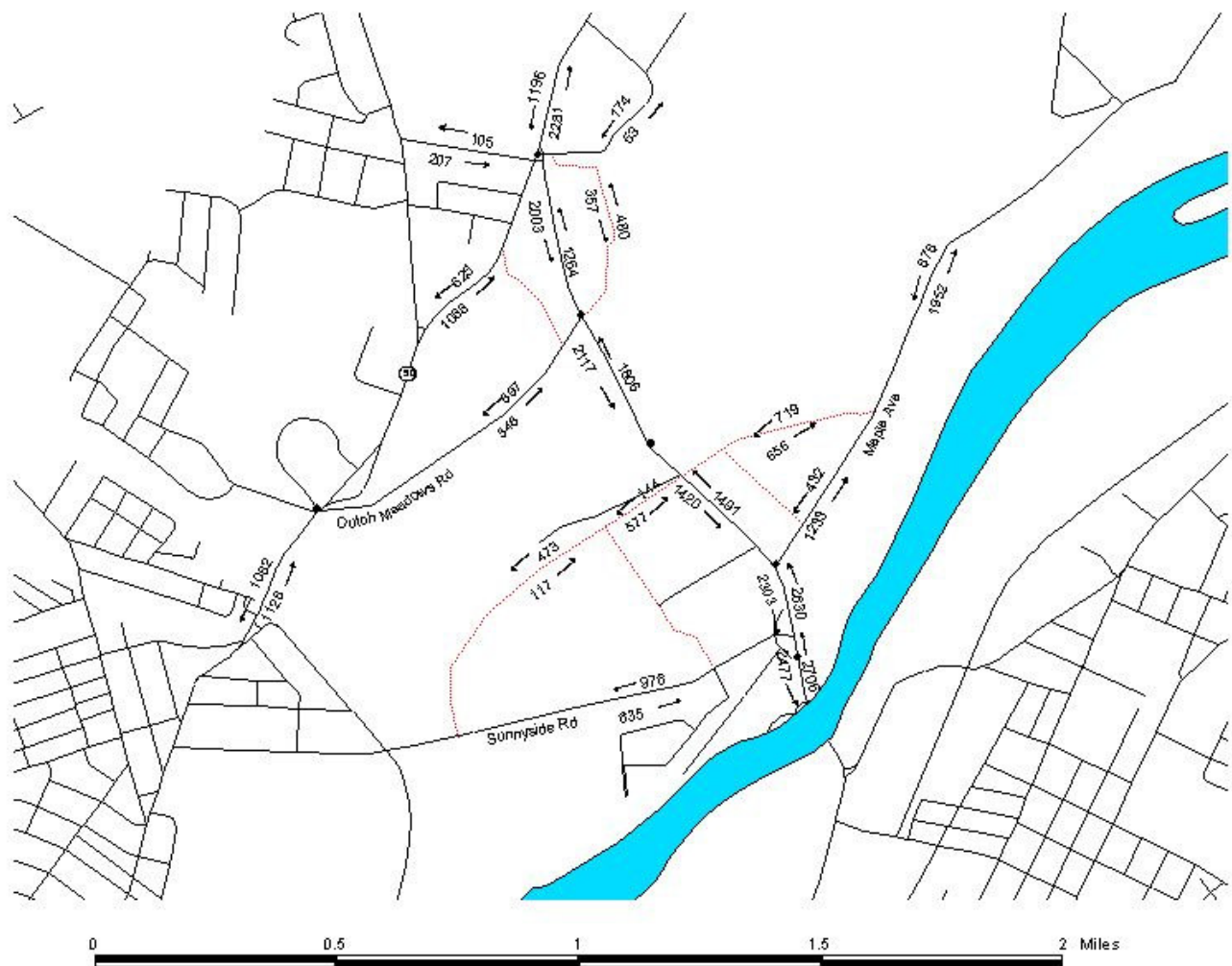




Basemap Copyrighted by NYSDOT

Prepared by CDTC

Map 5 **Future Traffic Demand Generated by Development** **Under the Proposed Land Use (Zoning) Plan**



----- Proposed Connector Roads

Under existing travel conditions, all of the traffic movements at the five intersections operate at a level-of-service of D or better during the peak travel period, and the roadways have an acceptable level of reserve capacity. Growth in traffic, generated by a maximum build-out of all developable land in the study area, would have a substantial impact on the roadway system. The traffic analysis indicates that about half of the road segments would exceed capacity, and the majority of intersections would fall below an acceptable level of service during the peak travel period, 4-6 pm. The primary traffic problems would occur along the Freemans Bridge Road corridor, and at the intersection of Freemans Bridge Road and Route 50, already an awkward traffic environment because of its configuration and complexity. Route 50 congestion will worsen, dropping to LOS F conditions for more than three hours of the day.

Maps 4-6 summarize roadway congestion problems for existing and future land use conditions.

5.4.6 Land Use and Traffic Conflict

The roadway network of a community is defined in terms of street hierarchy. This hierarchy describes the principal use and/or intended function of each road. Under the functional classification system, arterial streets primarily serve the through movement of traffic between communities. Local streets provide access to abutting land, such as residential neighborhoods. Collector streets funnel traffic between the two, and usually serve a secondary land access function. When a street begins to serve more than its principal function, conflicts can occur.

The most notable conflict, from quality of life perspective, concerns the intrusion of through traffic into residential living environments. Heavy traffic volumes and through traffic diminish the quality of residential living environments. Conflicts occur when through traffic utilizes local neighborhood streets, or where residential properties exist along streets that are intended to serve a through traffic function. The point at which traffic levels are perceived as a detriment to residential quality, however, is difficult to measure and depends on the expectations and past experience of each individual. Using objective criteria developed from a number of sources, and based on traffic volumes, roadway function, and land use characteristics, analysis of the highway network can identify areas along the arterial and collector streets where traffic volumes are clearly in conflict with residential land use. Much of the concern with regard to residential traffic conflict appears along Sunnyside Road, Maple Avenue, and certain parts of Route 50 serving the Village of Scotia. The ability of these streets to accommodate increases in daily traffic while maintaining adequate and safe accessibility to residential and commercial areas is a legitimate concern of area residents.

A second type of conflict that occurs in the region concerns access conflict with commercial traffic along collector and arterial streets. Excess curb cuts and resulting driveway turn movements can interrupt traffic flow. As conflict between the primary function of a roadway as conveyor of through traffic and access to adjoining parcels increases, congestion and traffic crashes follow. This undesirable situation limits the suitability of arterials for use by pedestrians, transit users, and bicyclists. At the present, Freemans Bridge Road operates with substantial traffic conflict and will worsen as driveways are constructed to serve new development in the corridor. Construction of too many driveways would also threaten the operational integrity of the corridor.

5.4.7 Pedestrian Circulation

Public sidewalks constitute an important element in a community's transportation network. Such facilities enhance public safety by physically separating vehicular and pedestrian circulation and by removing physical and perceptual barriers to access. Even though there are an abundant number of pedestrian generators in the study area, the relative absence of pedestrian facilities hinders non-motorized travel and in many cases makes such activity difficult. For example, Freemans Bridge Road, the major commercial corridor, has no sidewalks, and traffic makes pedestrian crossings difficult and uncomfortable.

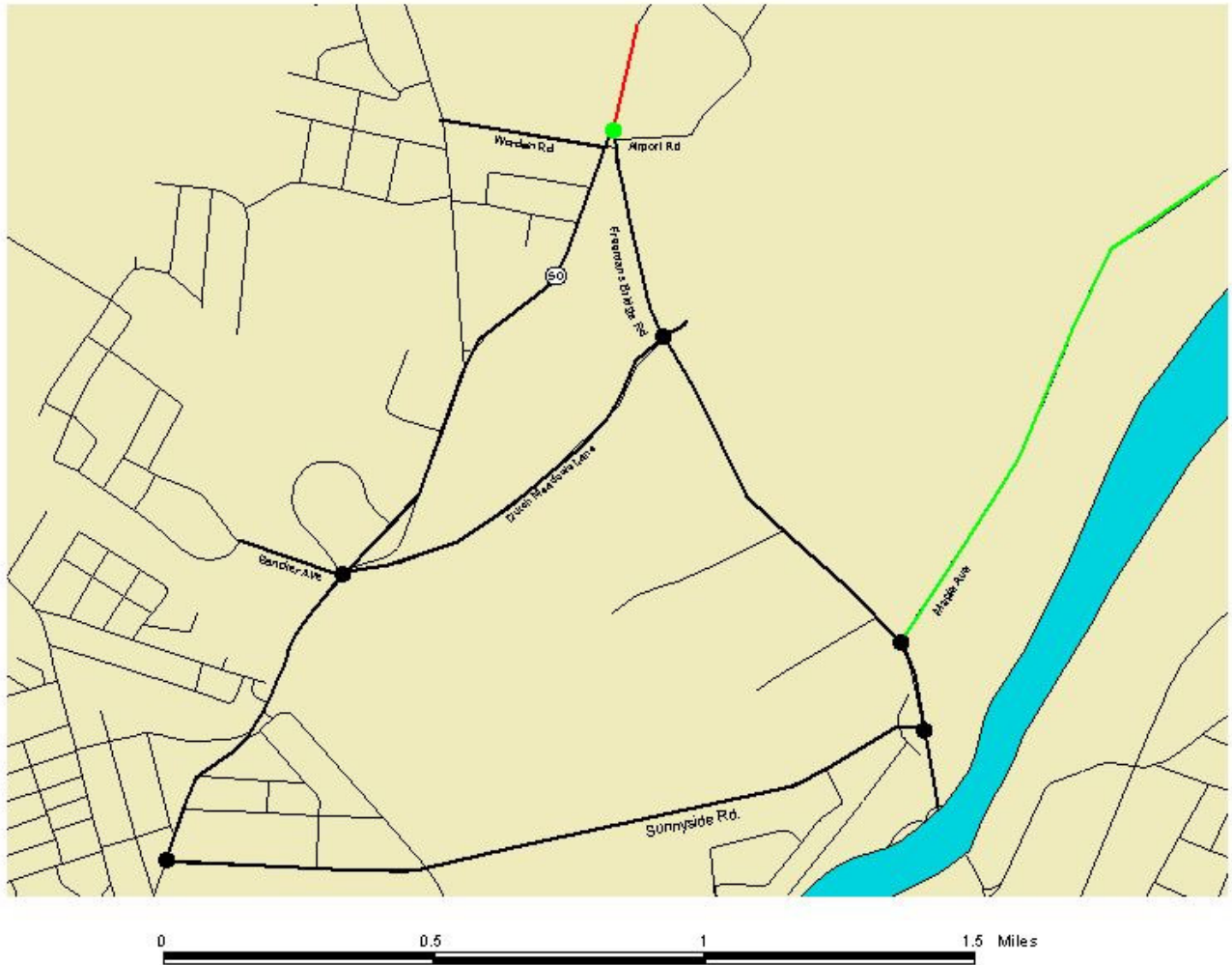
The Freemans Bridge Road Master Plan, CDTC's *New Visions Transportation Plan*, and Governor Pataki's *Quality Communities Initiative* call for designing land development and transportation projects that promote walking and the use of bicycles. The system proposed in the master plan focuses on providing the study area with more pedestrian facilities along high traffic areas, with linkages between commercial, residential, and other activity centers.

5.4.8 Arterial Service

One of the principal functions of a transportation system should be to provide good arterial service to all land uses within the community. This includes meeting the travel demand generated by development, including auto, transit, walking, and bicycle trips, at a reasonable level-of-service. Good arterial service requires that arterial and collector roadways be properly located to conveniently and safely serve the travel desires of both local and through traffic -- convenience in this respect being expressed in terms of "directness" of routes and acceptable average times to safely traverse the route -- thereby properly interconnecting the various land uses that comprise the community.

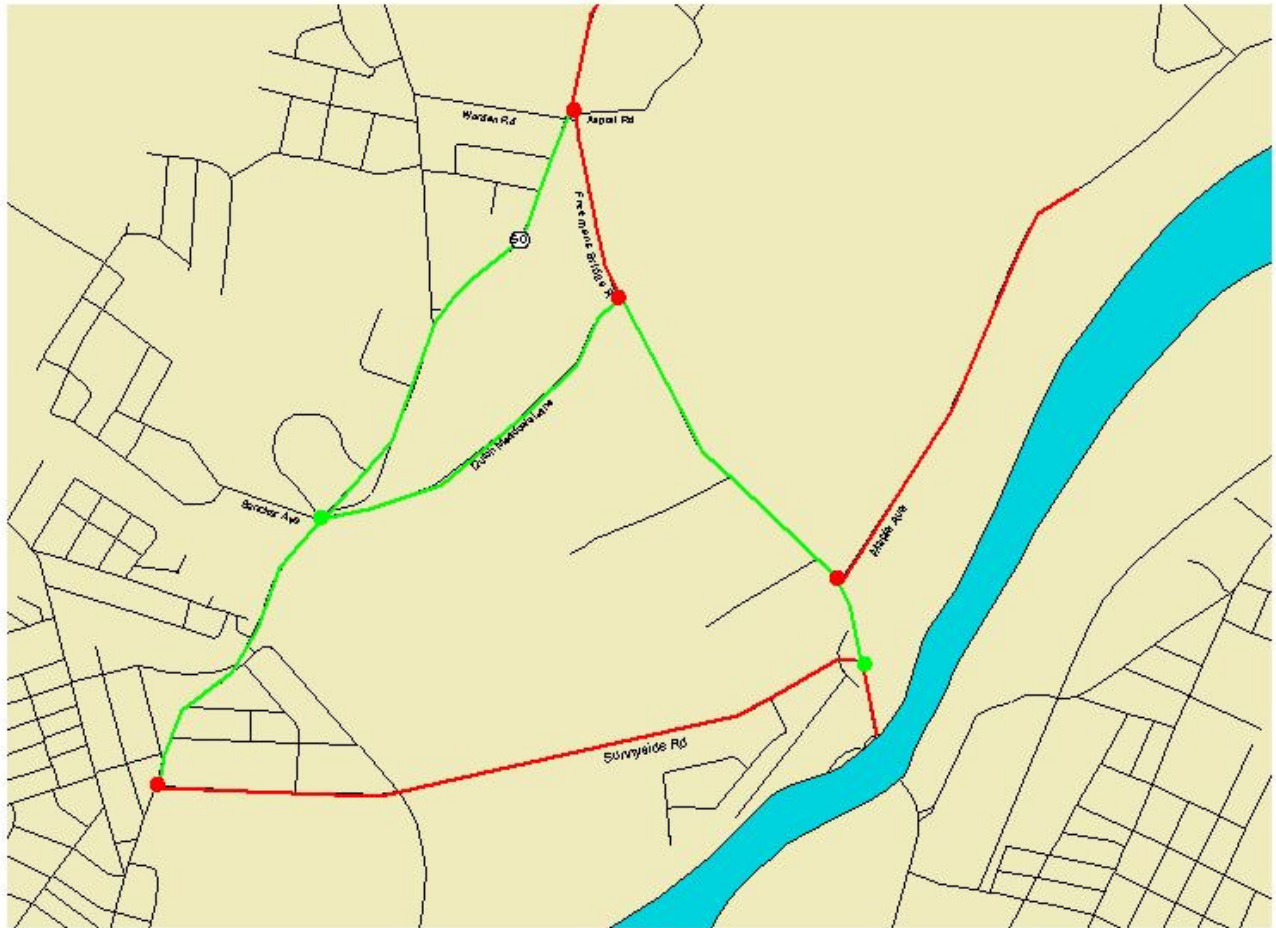
In addition to the capacity deficiencies highlighted on Map 4, analysis of the data indicates that there is an inadequate number of continuous arterial, collector, and local streets in the Town. As a result, the functional integrity of roads like Freemans Bridge Road and Route 50 are challenged as individual driveways are constructed to serve development along these roadways. Because there are an inadequate number of collector and local streets that support the arterial streets in the area, level-of-service deficiencies will develop at driveways intersecting Freeman Bridge Road and traffic/land use conflict will intensify along Freemans Bridge Road, Sunnyside Road, Worden Road, Maple Avenue and portions of Route 50 through the Village of Scotia.

Map 6
Existing (2003) Operating Deficiencies in the
Freemans Bridge Road Study Area



- Intersections At or Exceeding Maximum Capacity
- Intersections Approaching Maximum Capacity
- Intersections Below Maximum Capacity
- Roadways At or Exceeding Maximum Capacity
- Roadways Approaching Maximum Capacity
- Roadways Below Maximum Capacity

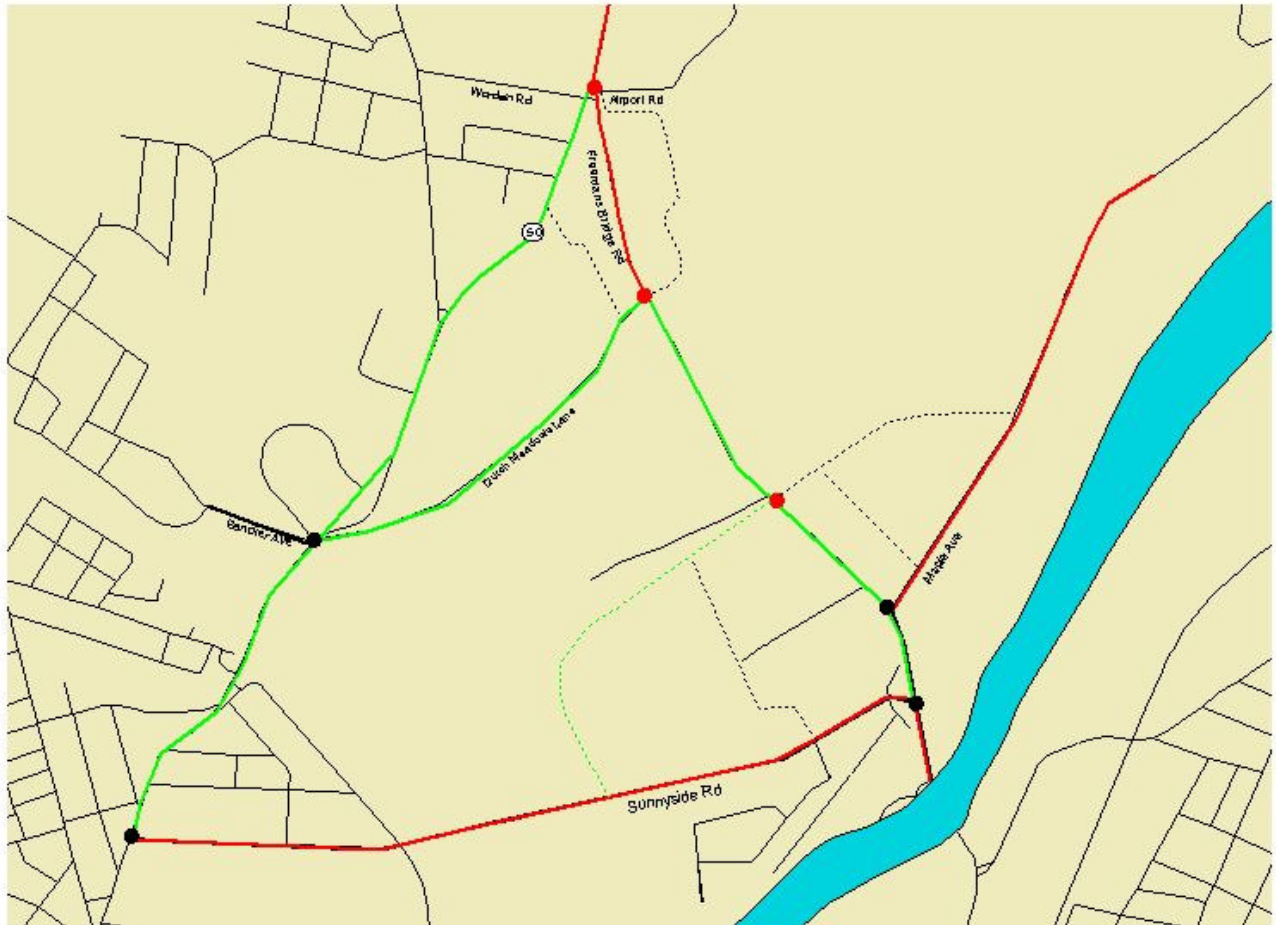
Map 7 **Future Operating Deficiencies in the Freemans Bridge Road Area** **Under Existing Zoning & Full Buildout Conditions**



0 0.5 1 1.5 Miles

- Intersections At or Exceeding Maximum Capacity
- Intersections Approaching Maximum Capacity
- Intersections Below Maximum Capacity
- Roadways At or Exceeding Maximum Capacity
- Roadways Approaching Maximum Capacity
- Roadways Below Maximum Capacity

Map 8 **Future Operating Deficiencies in the Freemans Bridge Road Area Under the Proposed Land Use Plan, Full Buildout, and Connector Roads**



0 0.5 1 1.5 Miles

- Intersections At or Exceeding Maximum Capacity
- Intersections Approaching Maximum Capacity
- Intersections Below Maximum Capacity
- Roadways At or Exceeding Maximum Capacity
- Roadways Approaching Maximum Capacity
- Roadways Below Maximum Capacity

Table 13: Peak Hour Demand by Land Use			
Roadway Segment	Existing Condition	Potential under Current Zoning	Potential under Proposed Zoning
Freemans Bridge Road			
Schenectady City Line to Sunnyside Rd	2,481 vph	6,325 vph	5,183 vph
Sunnyside Rd to Maple Ave	2,477 vph	5,975 vph	4,933 vph
Maple Ave to Dutch Meadows Lane	1,345 vph	4,682 vph	3,417 vph
Dutch Meadows Lane to NY 50	1,059 vph	5,171 vph	3,267 vph
NY 50			
Dutch Meadows Ln to Freemans Bridge Rd	1,456 vph	1,965 vph	1,713 vph
Freemans Bridge Rd to Glenridge Rd	1,910 vph	5,112 vph	3,477 vph
Sunnyside Road to Dutch Meadows	1,869 vph	2,705 vph	2,210 vph
Maple Ave			
Freemans Bridge Rd to Alplaus Ave	1,386 vph	3,483 vph	2,830 vph
Sunnyside Rd			
Freemans Bridge Rd to Washington Ave	720 vph	2,484 vph	1,611 vph
Worden Rd			
NY 50 to Swaggertown Rd	157 vph	596 vph	312 vph
Proposed Connector/Service Roads			
Maple Avenue Extension (East)	--	--	1,375 vph
Maple Avenue Extension (West)	--	--	721 vph
Dutch Meadows Extension	--	--	830 vph

5.5 Transportation Improvement Recommendations

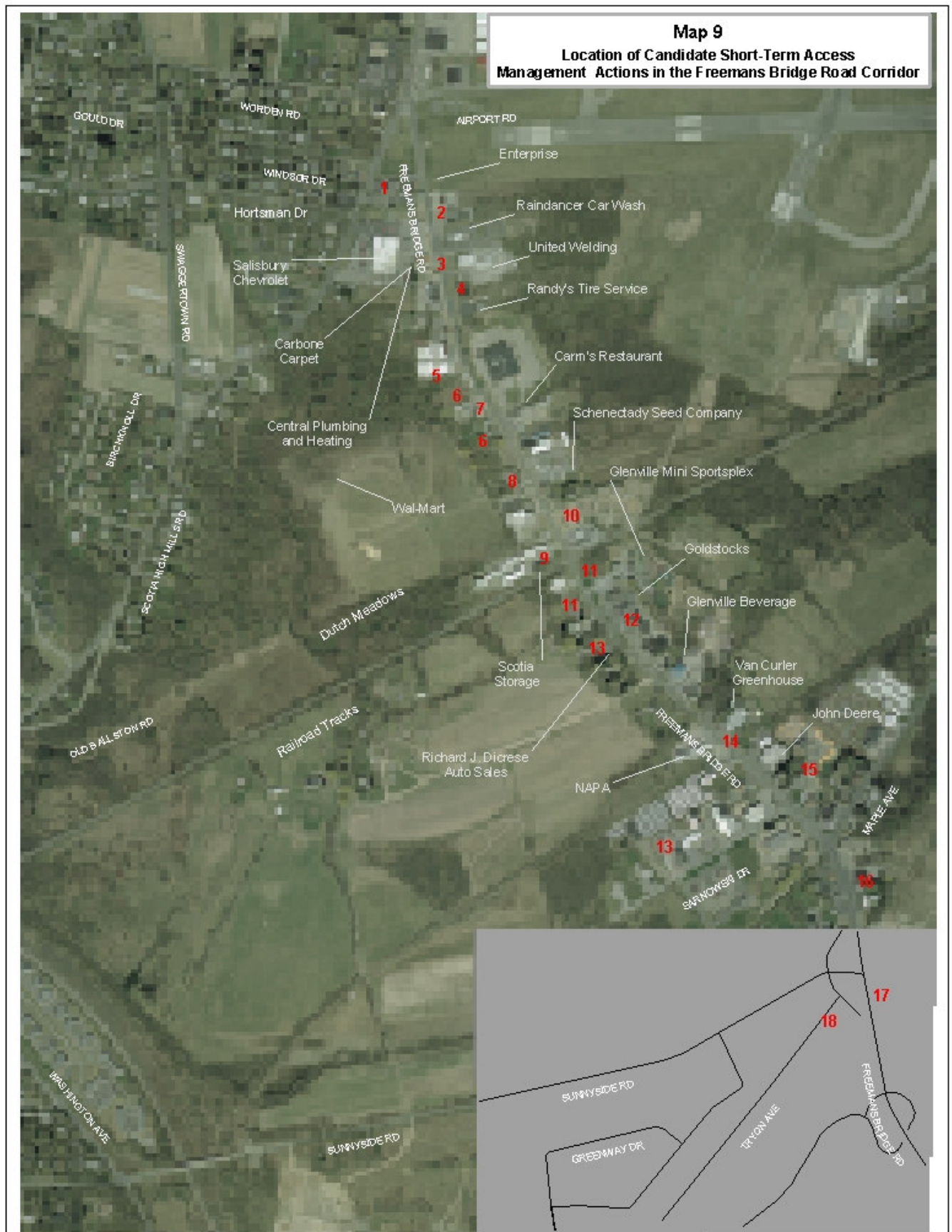
5.5.1 Arterial Management Actions

Traffic generated by development will not require major changes to the Freemans Bridge Road corridor in the short-term⁴. CDTC's traffic analysis demonstrates that the existing cross-section of study area roadways with proper access management will provide sufficient capacity to handle a modest amount of additional development. While level-of-service in the corridor will continue to operate at acceptable levels for the near future, several improvements should be explored to reduce traffic conflict. Driveway consolidation, use of shared driveways, installation of curbing, interconnected parking lots, and other arterial management actions will reduce traffic conflict in the corridor. Possible access management improvements are outlined on the following page and on corresponding Map 9. The successful implementation of these access

⁴ Roughly 50 percent of the growth permitted under the proposed rezoning plan could be accommodated by the existing configuration of Freemans Bridge Road. A policy of concurrency should be considered where the pace of new development is limited to reflect expectations for transportation improvements. Land use and traffic changes should be periodically evaluated to ensure an equitable balance among future development, infrastructure, and available transportation funding.

management actions will depend on the collaborative efforts of NYSDOT, Town of Glenville, and affected property owners.

Candidate Short-Term Access Management Actions
1. Extend Horstman Drive across NYS 50 to Freemans Bridge Rd. along northern lot line of Salisbury Chevrolet, and eliminate car dealership driveways to NYS 50. 2. Interconnect Enterprise Car Rental, Envy Salon and Raindancer Car Wash parcels, and provide one consolidated access drive to Freemans Bridge Road to serve these businesses. 3. Combine access for Carbone Carpet and residential parcels, and create one shared access point. Eliminate existing access. 4. Provide a service driveway on the east side of Freemans Bridge Road to serve United Welding and Randy's Tire Service to eliminate numerous curb cuts. 5. Provide single full access driveway at mid-point of current Central Plumbing and Heating parcel. Close off existing open road frontage. 6. Eliminate Wal-Mart restricted driveway. Construct new access from Wal-Mart parcel across Freemans Bridge Road and adjacent to the Carm's Restaurant northern lot line. 7. Consolidate and eventually eliminate all driveways on Freemans Bridge Road between Wal-Mart driveways. 8. Extend Dutch Meadows Lane across Freemans Bridge Road to Schenectady Seed Company parcel. Connect adjoining parcels on the east side of Freemans Bridge Road with a service road while eliminating existing driveways. 9. Combine access to parcels on west side of Freemans Bridge Road, which include Red Bull Antiques, Maid to Order House Cleaning, and Scotia Storage by providing a single access point to Freemans Bridge Road. 10. On the east side, connect the Homecrest Kitchen parcel with residential parcels and create one access point to Freemans Bridge Rd to serve these parcels. 11. Create a one-way ingress southbound, opposite the Glenville Mini Sportsplex, and a one-way northbound egress adjacent to the Glenville Mini Sportsplex. 12. Create a full service single driveway on east side of Freemans Bridge Rd. for Glenville Beverage and Goldstocks, and create an extension to interconnect with Glenville Mini Sportsplex. 13. Close off existing open road frontage on west side of Freemans Bridge Road to Richard J. Dicresce Auto Sales and Cole Industrial Supply. Provide access to these parcels via full service single driveway opposite new driveway in 12 above. 14. Create Maple Ave. Extension – heading west from existing Maple Ave. at overhead utility crossing and continuing along utility easement intersecting Freemans Bridge Road near NAPA, then continuing west for future connection to Sunnyside Road, east of railroad crossing near Washington Ave. 15. Create truck access road leading from new Maple Ave. extension to service NAPA and Sarnowski Drive on west side of Freemans Bridge Road. Create truck access on east side of road, to service Van Curler Greenhouse, Auto Solutions and All Seasons Equipment parcels. Eliminate open access and/or combine driveways to Freemans Bridge Road for businesses on both sides of the road. 16. Combine/eliminate multiple curb cuts in order to reconstruct access points as one-way driveways for existing developments between Maple Ave. and Sunnyside Road. 17. Provide interconnecting roadways and service roads to the east of Freemans Bridge Road and south of Maple Avenue as this area develops. 18. Close Tryon Ave. at Sunnyside Road, and construct new connecting roadway from Freemans Bridge Road, which intersects Tryon Ave., follows the path of Arbor Lane, crosses Sunnyside Rd., intersects with Sarnowski Dr. and connects with the new Maple Ave. extension. 19. The remaining roadways in the study area should look to reduce multiple curb cuts per parcel, interconnect multiple parcels, use shared lot lines for access, and promote planned circulation.
Source: Transportation Concepts Transportation Assessment for the Freemans Bridge Road/Dutch Meadows Area Master Plan



5.5.2 Construction of Supporting Connector Roads

Depending on the pace and type of development, it is possible that a level of development would be reached that would require additional changes to the transportation system. As infill development occurs between Route 50 and Freemans Bridge Road, a series of connector roads linking individual parcels rather than individual driveways should be constructed as shown on Map 3. With better access management and construction of additional connector streets, the roadway system would be more complete and street spacing more appropriate to the urban development in the area. Grid-like designs for streets are safer for all users because they support pedestrians and transit and slow vehicle traffic. Construction of the proposed connector roads shown on Map 3 would have important transportation benefits compared to the baseline condition.

The proposed connector roads would help advance economic development goals of the Town by promoting more efficient land use and transportation systems. The connector roads would provide access to most parcels in the study area, minimizing direct access to the major street system via individual driveways. Avoiding the construction of new driveways and consolidating or eliminating existing driveways would help preserve traffic-carrying capacity and reduce traffic conflicts and crashes. Further, providing road connections will add flexibility to the street system, especially important for incident management (dealing with traffic crashes) and emergency vehicle access. The resulting grid system of continuous local streets will connect commercial developments, disperse traffic, and ensure safe and efficient pedestrian access to the arterial street system. Connectivity between developments can help avoid unnecessary use of Freemans Bridge Road and Route 50.

5.5.3 Major Transportation Actions

To address expected peak hour traffic congestion in the Freemans Bridge Road and Route 50 corridors, CDTC recommends that consideration be given to the following improvements:

- Explore replacing some or all signalized intersections in the Freemans Bridge Road corridor with roundabouts⁵. Roundabouts have been successfully implemented in recent years in a variety of settings the United States. Not to be confused with a traffic circle, a roundabout has a number of advantages over a signalized intersection. A prominent advantage is that crash rates are significantly lower for roundabouts than for signalized intersections. In addition, where feasible, roundabouts can handle comparable volumes of traffic with reduced delay and take up less space (lower right-of-way impacts). Roundabouts can be designed to safely accommodate pedestrians and cyclists and can be visually attractive gateways to a community.
- Reconstruct Freemans Bridge Road to provide two travel lanes in each direction and a raised, landscaped median similar in design to Broadway in Saratoga Springs. A raised median will have noticeable safety and aesthetic benefits. Property access would be provided through connector roads and median breaks.

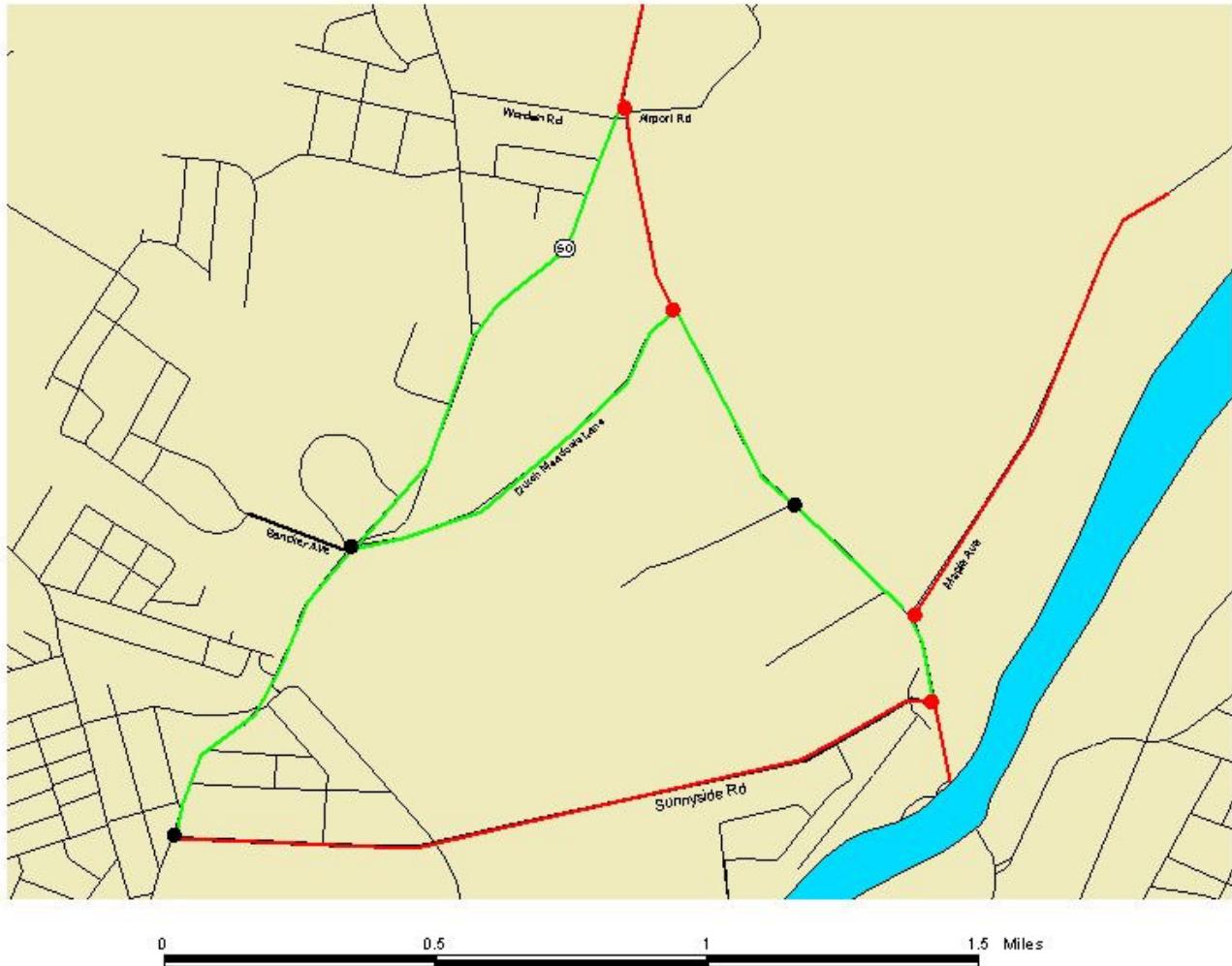
⁵A traffic circle, or rotary, is an old-style circular intersection that has a fairly large diameter and wide travel lanes that allow high travel speeds (typically greater than 30 mph) within the circle. In contrast, a properly designed roundabout has appropriate geometric features to ensure slow entering and circulating speeds. The Latham Circle is not a roundabout.

- The importance of completing Route 50 improvements has been reaffirmed in this study. The traffic analysis provided strong engineering evidence that current poor traffic service creates a need for major transportation investment in the Route 50 corridor. The *2001-06 Transportation Improvement Program* continues to call for creatively designed improvements that will help mitigate congestion along Route 50. The Town's recently adopted *Town Center Master Plan* recommended that Route 50 be reconstructed as a boulevard with a raised median.
- Options to mitigate traffic/residential land use conflict on Route 50, Worden Road, and other local roads are limited. Traffic calming strategies should be considered in these areas. Installation of diverters, curb extensions, raised intersections, and street trees could help to reduce the attractiveness of residential streets to through traffic.
- All improvements should incorporate design features that provide safe and convenient bicycle and pedestrian access. The possibility of building multi-use paths and sidewalks would provide high quality access for cyclists as well as pedestrians, and would be consistent with principles stated in the Town's Comprehensive Plan.

It should be noted that improvements to Route 50, widening of Freemans Bridge Road, and successful implementation of arterial management actions will not be sufficient to accommodate traffic generated under full build out conditions permitted by the existing land use (zoning) plan. Map 8 shows the operational problems that theoretically would remain after implementation of all recommended changes. Building enough road capacity to handle all the traffic that would occur during the peak period at the same time without delay would be impractical and prohibitively expensive under this scenario.

The proposed land use plan provides a development alternative that can be mitigated with feasible new public investment commitments. Even under the unlikely conditions of full build out, the only operational deficiency remaining under the plan is on Maple Avenue – peak-hour traffic demand will exceed maximum capacity by about 50 percent. Traffic volumes would remain in conflict with residential land use but would be less severe under the proposed land use plan than under full build out of the current (zoning) plan. Again, it is important to note that full build out of all parcels rarely occurs.

Map 10
Remaining Operating Deficiencies in the Freemans Bridge Road Area
Under Full Buildout of the Existing Land Use Plan
and Implementation of Proposed Transportation Improvements



- Intersections At or Exceeding Maximum Capacity
- Intersections Approaching Maximum Capacity
- Intersections Below Maximum Capacity
- Roadways At or Exceeding Maximum Capacity
- Roadways Approaching Maximum Capacity
- Roadways Below Maximum Capacity

6. MASTER PLAN IMPLEMENTATION

This document represents the culmination of the first step in the master planning process. It is critical that the Town develop a comprehensive implementation strategy to move the plan from paper to reality. The issues involved are complex and recommendations will need to be coordinated over time. Identification of funding sources and responsible parties are crucial components, as well, since improvements can only be undertaken after the funding sources have been established and responsibilities have been assigned.

This section suggests a phased implementation strategy. Three broad time frames are suggested:

- Short term – projects to be completed within the next two years
- Mid term – projects to be completed from two to seven years
- Long term – those projects anticipated to be completed from seven to ten years

Short-term activities, in general, require less lead-time than long-term activities; they may also require fewer or less complex regulatory actions in order to be implemented. Long-term activities may involve larger expenditures and may require additional time to get funding sources in place. In addition, long-term projects tend to require the cooperation of more than one entity/organization.

The implementation plan includes regulatory actions, physical improvements, and economic development actions. These changes are likely to occur within the same period for a particular area, but the responsible parties and funding sources are likely to differ.

Responsibility for many of the actions/recommendations will fall upon the Town of Glenville. Other recommendations may involve direct action by state agencies (i.e. physical improvements to Freemans Bridge Road by NYSDOT), funding or partial funding from State and Federal agencies, or activities by business organizations. The private sector (business owners, developers, commercial tenants) will also play a large role through development/redevelopment of land within the study area, and through compliance with new zoning standards. Regardless of the funding source or “action agency,” the Town of Glenville will be responsible for instigating and/or coordinating nearly all of the proposed actions.

It is imperative that certain short-term regulatory actions be undertaken as soon after adoption of the Plan as possible. Of particular importance is the amendment of the Town’s Zoning Ordinance to put into place new zoning districts, with their attendant list of permitted uses, as well as revised architectural/design standards. If the time frame between adoption of this Plan and adoption of new zoning regulations is lengthy, the Town could confront unwanted land uses and/or undesirable building architecture and site designs.

As noted previously, the majority of actions identified on the following pages will be the responsibility of the Town of Glenville, usually in the form of regulatory or funding actions by the Town Board, with input from the Planning Department, Department of Public Works, and other town departments, as appropriate. Tasks that would be the responsibility of others are so indicated. A separate section that describes a number of possible funding sources is included; this is not intended to be inclusive of all possible sources, but rather indicates several sources that are thought to be appropriate and available to the Town.

6.1 Land Use and Development Implementation

6.1.1 Preliminary Regulatory Actions

A number of regulatory actions may be taken by the Town Board in order to implement the Freemans Bridge Road Master Plan. Some of the more effective and far-reaching actions may include the following:

- Adopt this Master Plan.
- Enact zoning changes to implement many of the recommendations of the Master Plan. This could include adoption of an overlay zoning district to determine land use, site and building design, and transportation/access management standards.
- Amend the Street and Roadway Ordinance to put into place pedestrian and bicyclist features and to promote traffic calming.

6.1.2 Freemans Bridge Road Development Improvements

Short-term actions:

- Apply revised requirements of the zoning ordinance as properties are redeveloped and/or as new tenants occupy existing buildings. (This action continues through the long-term and beyond.)
- Encourage infill development along Freemans Bridge Road. Explore strategies to attract infill developers.
- Adopt a plan for landscape improvements, including design of a boulevard, and coordinate with planned roadway improvements.
- Consider creation of a Business Improvement District (BID); this may be specific to Freemans Bridge Road itself or may encompass the larger study area.

Mid-term actions:

- Develop activities to improve the business climate of the area. For example, installation of seasonal decorations, clean-up activities, sponsorship of public events, etc.

Long-term actions:

- Refine and continue business development activities.

6.1.3 Economic Development

Short-term actions:

- Identify targeted areas as suggested in the Master Plan and develop marketing and development strategies for each.
- Coordinate plans with development plans for the Town Center, so that the two efforts will be complementary.
- Consider hiring an economic development consultant to develop a marketing strategy for the various components of the Master Plan, such as the Riverfront District, the Freemans Bridge Road Redevelopment Node, and the Office/Technology Park.
- Extend the existing Schenectady/Glenville Empire Zone to additional properties within the Freemans Bridge Road study area, as appropriate.

- Explore the possibility of using the State Enterprise Zone designation as an economic development tool.

Long-term actions:

- Refine and continue short-term actions.

6.1.4 Gateway Improvements

Short-term actions:

- Identify sites for gateway elements and select designs for each, based upon a coordinated design strategy.
- Identify funding sources and submit applications for funding.

Mid-term actions:

- Construct gateway improvements in accordance with selected design.
- Coordinate with roadway and sidewalk improvements, as applicable.

6.1.5 Development of Multi-Use Paths

Short-term actions:

- Amend the existing Town Sidewalk Ordinance by adding construction standards for multi-use paths.
- Determine path locations and identify affected property.
- Identify potential funding sources and submit applications for funding.
- Adopt requirement that a developer applying to develop adjacent land be financially responsible for construction of the multi-use path adjacent to his/her property.
- Work with the Boston and Maine railroad to develop an acceptable strategy for construction of the portion of the proposed multi-use path that traverses (or goes under) the railroad tracks adjacent to Horstman Creek.

Mid-term actions:

- Acquire necessary land or easements for path locations.
- Design paths, including its linkage to the Mohawk-Hudson Bike-Hike Trail and begin construction.
- Begin construction of paths, coordinating with development activity so that developers contribute to the cost of the paths adjacent to their developments.

Long-term actions:

- Continue construction of paths, coordinating with development as necessary.

6.1.6 Construction of Sidewalks

Short-term actions:

- Develop a sidewalk plan to determine preferred sidewalk locations.
- Identify potential funding sources and submit applications for funding.
- Mandate that developers construct sidewalks, as illustrated in the sidewalk plan, as private properties get developed/redeveloped.

Mid-term actions:

- Continue requiring developers to construct sidewalks, as identified in the pending sidewalk plan, as private properties get developed/redeveloped.
- Construct sidewalks in coordination with roadway and other right-of-way improvements.

Long-term actions:

- Continue with mid-term actions.

6.1.7 Acquisition and Development of Parkland

Short-term actions:

- Identify land to be included in recreation and conservation areas.
- Prepare master plans for each park/conservation area.
- Identify potential funding sources for both acquisition and necessary development and submit application for funding.

Mid-term actions:

- Develop strategies to acquire land or easements, or to ensure its continued use for recreation/conservation.
- Begin improvements, as feasible, pursuant to park/conservation area master plans.
- Work with schools or other educational institutions to use conservation areas as educational tools.

Long-term actions:

- Continue to make park and recreational improvements along the riverfront in coordination with private development.

6.2 Transportation Implementation

6.2.1 Roadway Construction/Reconstruction/Traffic Issues

Short-term actions:

- Identify required permits and other necessary actions.
- Identify potential funding sources for all roadway improvements and submit applications.
- Prioritize areas of roadway construction.
- Identify “fixes” for the Freemans Bridge Road/Saratoga Road intersection, such as a roundabout.
- Implement access management recommendations.

Mid-term actions:

- Commission design of service roads serving Freemans Bridge Road businesses and begin construction.
- Begin planning roadway improvements to Freemans Bridge Road, including modification and consolidation of curb cuts along the road and incorporation of sidewalks, streetscaping, crosswalks, and other pedestrian features.
- Coordinate efforts with the NYSDOT relative to reconstruction of Freemans Bridge Road to implement a boulevard-style roadway and to incorporate traffic calming and pedestrian features.
- Collaborate with DOT to design improvements at the Freemans Bridge Road/Saratoga Road intersection.

Long-term actions:

- Complete construction of service roads adjacent to properties that front Freemans Bridge Road.
- Complete roadway improvements to Freemans Bridge Road, including modification and consolidation of curb cuts along the road and incorporation of sidewalks, streetscaping, crosswalks, and other pedestrian features.
- Complete Freemans Bridge Road and Saratoga Road improvements.

Because the recommended transportation improvements are likely to be the most expensive and require the most collaboration between private, local, and state agencies, a brief discussion of the various strategies is included below.

6.2.2 Initial Cost Estimates

The capital cost of proposed roadway work for Freemans Bridge Road including design, right-of-way acquisition, and construction would range between \$10-\$13 million. Design and construction costs related to building the functional connector roadways and adjacent sidewalks would total another \$4.4 million. These costs were estimated using system level costs derived from comparable transportation projects built to minimum AASHTO standards and described in NYSDOT's *Project Cost Estimation Process for Use in System Planning*. The estimate does not include site-related access work on Freemans Bridge Road, Dutch Meadows Lane, and other local roadways.

6.2.3 Cost Sharing

While development in the study area would benefit the most by the proposed connector roads, existing corridor traffic would also benefit by their construction as well. Because both the general public and the private development community will benefit from the proposed roadway improvements, a mitigation approach supported by a mix of public and private financing would be appropriate. One approach would involve calculating cost share based on the amount of roadway capacity consumed by traffic generated by development in the study area. This approach is described in detail in CDTC's report, *Procedures for Public/Private Financing in the Capital District*. The Town of Colonie has successfully used this approach in assessing transportation mitigation fees for GEIS improvements in the Albany County Airport Area. Since this funding method apportions cost shares based on the amount of additional capacity that is consumed by a particular development, a development that generates many vehicle trips would have a higher total cost share than one that generates few vehicle trips. Public funding

would be used for costs attributable to non-local traffic and to the creation of reserve capacity. Under this approach, full private developer funding of certain improvements can be considered if the warrant for the improvement is primarily to serve local development related traffic and not existing and new through traffic.

An alternative approach involves the use of a transportation development district. Under New York State law, special transportation districts may be created where property owners or tenants cooperate to "tax" themselves for improvements that would be of mutual benefit in a particular section of the community. The purpose of the District would be to defray the cost of constructing roadway improvements identified in the rezoning proposal. Under either approach, the Town may need to commit to financing the full cost of the project up-front. As development in the study area occurs, mitigation fees would be collected to cover the debt service attendant to any bond acquired to finance the project. Although Transportation Development Districts have not been used in the Capital District, they have been used elsewhere in New York State.

6.3 Potential Funding Sources:

Transportation Improvement Program (TIP) – One of the responsibilities of the Capital District Transportation Committee (CDTC) is to program for the implementation of the products of the planning process through development of a staged multi-year program of transportation improvements. Federal regulations require that transit, highway, and other transportation improvement projects within the Capital District Metropolitan Area be included in the TIP if these projects are to be eligible for federal capital or operating funding.

Transportation Equity Act for the 21st Century (TEA-21) – The Federal Highway Administration funds TEA-21 through the NYS Department of Transportation. TEA-21 funds transportation projects that do not fall under "traditional" transportation, highway, and bridge categories. Among 12 eligible categories are provision of facilities for bicycles and pedestrians (including safety and education activities) and preservation of abandoned railway corridors (including conversion and use for bicycle and walking trails). This program is open to state and local governments and requires a 20% match.

Main Street New York – Downtown Development Initiative – Main Street grants are provided through the Governor's Office for Small Cities (GOSC) in conjunction with Empire State Development. The goal of this program is to assist communities to improve and upgrade the appearance and viability of commercial downtown areas. Projects funded by the Main Street program include: renovation and rehabilitation of commercial or mixed-use buildings, demolition of abandoned or substandard structures, main street restoration including sidewalks, tourist development projects, preservation of historic structures, parking enhancements, street lighting, municipal park improvements including construction of public restrooms, and beautification projects including the planting of trees and shrubs.

CDTC Spot Improvement Program – Spot Improvement grants are funded through the Capital District Transportation Committee. Spot Improvement funds are available for small-scale projects that will improve the region's bicycle and pedestrian travel environments. Actions funded through this program should address problems at specific locations, such as intersections, short lengths of roadway, or single destinations.

Clean Water/Clean Air Bond Act – This act provides funding for projects to restore New York’s environment, including creating new park facilities, improving waterfront access, and restoring historic landmarks.

Environmental Protection Fund – EPF grants are funded through the NYS Office of Parks, Recreation, and Historic Preservation. Reimbursement grants are made to municipalities and non-profits. Eligible projects include acquisition and development of parkland, preservation and restoration of historic properties, and continuing development of the NYS Heritage Area System.

Small Cities Community Development Block Grant /Governor’s Office for Small Cities – Provides grants for community and economic development activities, wastewater and drinking water facilities, housing and public infrastructure projects via an annual competitive process. Grants up to \$400,000 are available for cities, towns, and villages and up to \$600,000 for counties and joint applications. Eligible public facilities projects will solve serious problems affecting community health, welfare, and safety.

Transportation Infrastructure Finance and Innovation Act (TIFIA) – The U.S. DOT’s Transportation Infrastructure Finance and Innovation Act Joint Program Office (JPO) offers the availability of funds to provide credit assistance in the form of secured loans, lines of credit, and loan guarantees to public and private sponsors of eligible surface transportation projects. Funding for this program is limited and the TIFIA JPO will lead U.S. DOT multi-modal teams in evaluating application for credit assistance based on project merits and satisfaction of the TIFIA statutory criteria.

6.4 Economic Development Funding Mechanisms:

Business Improvement District (BID) – A BID is a public/private partnership through which a special assessment is used to finance improvements and/or services within a designated commercial area. Property owners, merchants, and residents in a district agree to be assessed for improvements or services beyond those already provided by municipal government that benefit only those properties included in the district. The municipality collects the funds for the BID and turns them over in their entirety to the BID. The BID board of directors, which is composed of property owners, merchants, and residents, outlines how funds will be spent. BIDs commonly sponsor community events, provide aesthetic enhancements (i.e., lighting, flowers, sidewalk sweeping, shoveling), and perform joint marketing and business recruitment.

Local Development Corporation (LDC) – The purpose of a Local Development Corporation is to undertake economic development activities for its designated service area, which can be a city, town, village, or a segment of any of these entities. A LDC is governed by a board of directors that includes public officials, business and property owners, and residents. The LDC can purchase land for lease or resale to a new or expanding business, administer a revolving loan fund to assist new or expanding businesses, and/or implement a business recruitment program.

New York State Empire Zone Program – Empire Zones are designed to spur business development by offering incentives such as tax abatements, sales and wage tax credits, and discounts on power. There is currently a Schenectady/Glenville Empire Zone. An expansion of the program would afford the Town additional acreage that could be applied to the study area.

Metroplex Development Authority – The Schenectady Metroplex Development Authority is an independent authority established in 1999 and charged with providing Schenectady County with the capability to promote economic development within the Route 5 and Route 7 corridors of the county. The Metroplex service area boundary was recently expanded to include all of the Town of Glenville. Consequently, properties and projects within the Freemans Bridge Road study area are now eligible for Metroplex funding.

Small Cities Economic Development Open Round/Governor's Office for Small Cities – Grants from \$100,000 to \$750,000 may be requested for projects providing water, wastewater, or other infrastructure improvements to create or retain jobs for low- to moderate-income persons (at \$15,000 per job created or retained). Eligible projects must primarily benefit low- and moderate-income persons and to correct or prevent public health and safety problems, slums, or blight. Non-entitlement communities, units of local government with a population of less than 50,000, and non-urban counties are eligible for this type of funding.

Economic Development Administration within the U.S. Department of Commerce – The Economic Development Administration (EDA) announces general policies and application procedures for investments that help states, regions, and communities across the nation create wealth and minimize poverty. The EDA promotes a favorable business environment to attract private capital investment and higher-skill, high-wage jobs through capacity building, planning, infrastructure, research grants, business assistance, and strategic initiatives. EDA fulfills this mission by promoting progressive domestic business policies and growth and by assisting states, local governments, and community-based organizations to achieve their highest economic potential.

APPENDICES

APPENDIX A: Supporting Land Use and Transportation Information and Data

Table A-1 Potential Maximum Build-Out in the Freemans Bridge Road Area Under Two Future Zoning Scenarios					
Existing Zoning			Proposed Zoning Under Freemans Bridge Road Master Plan		
Zone	Acreage	Build-Out	Zone	Acreage	Build-Out
General Business-Retail or Office	185 acres	2.0M SF Retail 4.8M SF Office	Commercial/Mixed Use	116 acres	0.758M SF Office (with 758 units 2 nd floor over Office) 0.758M SF Retail
Research/Development/Technology	290 acres	3.79M SF	Office	39 acres	1.02M SF
Professional/Residential	26 acres	0.468M SF or 75 Units	Single Family Residential	51 acres (20,000 sf lots)	94 units
Multi-family Residential	1 acre	4 Units (2 Two-family Dwellings)	Mixed Residential	39 acres (20,000 sf lots; multifamily =3 acre lots)	24 single-family units 48 two-family units 171 multi-family Units
Rural Residential/Agricultural	36 acres	15 units	Tech/Industrial Park	42 acres	0.55M SF
Riverfront Recreational/Commercial	30 acres	100,000 SF	Multi-family housing	40 acres (3 acre lots)	734 Units
			Multi-family housing/Office	45 acres (18,000 gfa/acre)	0.81M SF or 1,012 Units
			Riverfront Redevelopment District	15 acres	0.1M SF

M = Million

SF = Square Feet

Table A-2 Vehicle Traffic Generated Under Maximum Build-Out Under Existing Zoning Freemans Bridge Road Master Plan			
Potential Development	PM Peak Hour Travel		
	Rate (trips/1000 sf or unit)	Total Trips	Truck Trips
General Business – Retail (2,014,560 SF) or Office (4,835,160 SF)	4.7	9,465 vph	189 vph
	1.7	8,219 vph	53 vph
Research/Development/Tech (3,789,720 SF)	1.1	3,790 vph	62 vph
Professional/Residential Professional Office (468,000 SF) or Residential (75 units)	1.65	1,274 vph	8 vph
	0.88	66 vph	0 vph
Riverfront Recreational/Comm'l (100,000 SF) assumes: Hotel/Lodging (40,000 SF) Two Restaurants (20,000 SF each) Marina (80 slips)	0.4	16 vph	1 vph
	8.9	356 vph	7 vph
	0.3	24 vph	1 vph
Multi-Family Residential (2 Two-Family Units)	0.98	2 vph	0 vph
Rural Residential/Agricultural (15 Single-Family Units)	0.88	13 vph	0 vph
TOTAL	--	12,486 -14,940 vph	271 vph
<i>Notes: Trip generation tables in this table are not cumulative. For example, existing zoning can accommodate either 4.8 million square feet of general office or 2.0 million square feet of retail, and 468,000 square feet of professional office or 75 single-family homes, not both. Depending on the land use choices made, travel in the corridor under full buildout could be as low as 12,486 vph or as high as 14,490 vph.</i>			

vph = Vehicles per Hour

Table A-3 Vehicle Traffic Generated Under Maximum Build-Out Under Proposed Zoning/Land Use Categories Freemans Bridge Road Master Plan			
Potential Development	PM Peak Hour Travel		
	Rate (trips/1000 sf or unit)	Total Trips	Truck Trips
Commercial/Mixed Use			
Professional Office (758,046 SF)	1.56	1,183 vph	7 vph
Retail (758,046 SF)	4.7	2,640 vph	53 vph
Multi-Family (758 units SF)	0.47	356 vph	--
General Office (1,020,240 SF)	1.56	1,500 vph	10 vph
Single Family Residential (94 units)	0.88	83 vph	--
Mixed Residential			
Single Family (24 units)	0.88	21 vph	--
Two-Family (48 units)	0.47	24 vph	--
Multi-Family (apartments) (171 units)	0.3	51 vph	--
Tech/Industrial Park (548,856 SF)	0.89	488 vph	54 vph
Multi-Family Housing (apts.) (743 units)	0.3	223 vph	--
Multi-Family Housing/Office			
Multi-Family (1,012 units) or	0.3	150 vph	--
Office (810,00 SF)	1.56	624 vph	4 vph
Riverfront Redevelopment District (100,000 SF) assumes:			
Hotel/Lodging (40,000 SF)	0.4	16 vph	--
Two Restaurants (20,000 SF each)	8.9	356 vph	--
Marina (80 slips)	0.3	24 vph	--
TOTAL	--	7,739 vph	128 vph
<i>Notes: Trip generation totals in this table are not cumulative. The land use category multi-family/office could support either 1,012 apartments or 810,000 square feet of office space, but not both.</i>			

APPENDIX B: CDTC Standards/Criteria for Roadway System Evaluation

The following narrative documents various highway performance criteria that CDTC staff uses for problem identification and alternative evaluation. In addition to traffic engineering standards, CDTC has also considered neighborhood impact, consistency between street design and function, and consistency with planned and potential system improvements in surrounding towns.

TRAFFIC ENGINEERING STANDARDS

The number of lanes provided on a roadway largely, although not entirely, establishes its traffic carrying capacity. Other factors affecting urban roadway capacity include intersection approach pavement width, including the provision of exclusive turn lanes; parking within 200 feet of the intersection, type and operation of traffic control regulations and devices; percentages of right and left turns at intersections, and number and location of private driveways and intersections. Urban roadways carrying peak hour traffic volumes exceeding their capacity may be expected to experience significant delays at controlled intersections, reduced speeds between intersections, and increased accident rates. In addition, such facilities may encourage motorists to utilize alternative routes over local streets. The reduced speeds and intersection delays on urban streets carrying traffic volumes equaling or exceeding their capacity generally occurs only during the morning and evening peak hour, or, in some cases, during portions of the two-hour evening peak traffic periods. During midday, evening, and early morning hours, there will generally be little, if any, traffic congestion and delay. Also, on most urban streets, weekend traffic peaks will be less than weekday traffic peaks.

To determine the relative effectiveness of the existing street and highway system to accommodate existing and expected increases in peak hour traffic flow, the capacity analysis procedures set forth in the 2000 *Highway Capacity Manual* are used by CDTC to evaluate intersection performance. Two measures – volume-to-capacity and average delay – are used in CDTC's regional planning studies to determine the performance of intersections.

The volume-to-capacity ratio, defined as the relationship between peak hour traffic volume and the maximum capacity of an intersection approach, is used by CDTC to determine the degree of traffic congestion of each approach of a signalized intersection. Accepted engineering practice recommends that this ratio not exceed a value of 1.0 during the peak travel hour. Average intersection delay, defined as the amount of time a typical vehicle must stop and wait at an intersection prior to proceeding through the intersection, is used to determine the level-of-service provided by the intersection. The standard measure of intersection level-of-service as defined by the 2000 *Highway Capacity Manual* ranges from "A" for very good service with little delay to "F" for very poor service characterized by very long delay at an intersection. For CDTC's regional and corridor planning efforts, level-of-service "D" is identified as desirable for overall

intersection performance but level-of-service “E” is identified as acceptable for individual movements within the intersection.

In addition to intersection analysis, mid-block or mainline traffic conditions are evaluated by using guidelines established for CDTC’s regional planning work. Mainline highway capacity deficiencies are identified by comparing mid-block traffic volumes against estimated mid-block capacities. The working guidelines for arterial and collector roadway capacity used in CDTC’s regional STEP model are summarized in the table below.

Table B-1: Urban Arterial, Collector, Expressway, and Local Road Mid-Block Capacity Thresholds		
Roadway Type	<u>Approximate LOS D Capacity</u> (each Direction)	<u>Approximate LOS E Capacity</u> (each direction)
Surface Arterial and Collector Roadway		
Single Lane (each direction)	1,000 vph	1,300 vph
Two Lane Undivided (each direction)	2,500 vph	3,120 vph
Two Lane Divided with Flush Median (each direction)	2,800 vph	3,500 vph
Expressway		
Single Lane Limited Access (Undivided)	1,600 vph	1,840 vph
Single Lane Limited Access (Divided)	1,650 vph	1,850 vph
Two-Lane Limited Access (Divided) (each direction)	3,400 vph	3,700 vph
Local Road	625 vph	800 vph
Notes: 1. Thresholds for surface arterials and collector roadways would apply to roadways primarily serving commercial areas of the community. Lower thresholds should be considered for residential areas. 2. Thresholds for single lane arterials and collector roadways assume left turns are not managed. Higher quality access management, such as the presence of a median left turn lane, would argue for a higher threshold. For a three lane facility (one lane in each direction with median turning lane), using a LOS D capacity of 1250 and LOS E capacity of 1625 in each direction would be consistent with CDTC STEP Model practice. Microsimulation has been used in specific cases to assist in determining acceptable mid-block movements in the context of a system of traffic signals. 3. Local streets provide land access in residential, commercial, and industrial use settings. Through movements on local streets are incidental and involve traveling to and from a collector facility. Typically local roads carry low traffic volumes and are therefore designed with narrow travel lanes, little lateral clearance, on rolling terrain, and circuitous alignments. Roadways with such restrictive physical features would have lower capacity than typical urban arterial and collector facilities. Based on the capacity values of two-lane facilities in the above table and the factors set forth in Chapter 8 of the 1985 <i>Highway Capacity Manual</i>, the maximum capacity of two-lane local roads is estimated to average 625 vph in the peak direction for LOS D conditions. The capacity of "improved" local roads may be somewhat higher, but will still fall below the threshold established for arterial facilities. 4. The thresholds used in this table should not be used as justification for widening a road. Careful consideration of the CDTC Congestion Management System and sensitivity to the land use context would be necessary in any decision to add capacity. Other ways of managing traffic, land use, and development must be considered.		

ROADWAY/LAND USE CONFLICTS

An issue that CDTC believes deserves some consideration is the question of consistency between street design and actual function. The roadway network of a community is commonly defined in terms of a street hierarchy. This hierarchy describes the principal use and/or intended function of each road. Under the functional classification system, arterial streets primarily serve the through movement of traffic between communities. Local streets provide access to abutting land, such as in residential neighborhoods. Collector streets funnel traffic between the two, and usually serve as a secondary land access function. When a street begins to serve more than its principal function, conflicts can occur.

The most notable conflict, from a quality of life perspective, concerns the intrusion of through traffic into residential areas. Traffic impacts can range from air quality to noise, visual and safety concerns. The point at which traffic levels are perceived as a detriment to residential quality, however, is difficult to measure and depends on the expectations and past experience of each individual. Using objective criteria developed from a number of sources, and based on traffic volumes, roadway function, and land use characteristics, analysis of the roadway network can identify a number of areas along arterial and collector streets where traffic volumes are clearly in conflict with residential land use.

A second type of conflict which occurs in the region's suburban communities concerns access conflicts along collector and arterial streets. Excess curb cuts and resulting driveway turn movements can interrupt traffic flow. A number of areas were identified along arterial highways where conflict exists between the primary function of the roadway as a conveyor of through traffic, and access to adjoining parcels. Conflicts exist primarily in commercial areas.

CDTC developed a performance measure to help assess traffic/land use conflict in the Capital District. Analogous to traffic level-of-service ratings, Level-of-Compatibility (LOC) ranges from "A", the most desirable, to "F", the least acceptable. Measures of both residential and commercial corridors were developed. Explanation of the calculation of the measure and summary of trends is set forth in the draft New Visions report, *Land Use – Vehicular Traffic Conflict: Development of Conflict Measures and Synthesis of Findings, September 1995*.

Table B-2		
Level-of-Compatibility Thresholds Developed Through CDTC's Regional Highway System Review; Driveway Spacing Inventory Suggested Thresholds and Corresponding Descriptions		
Traffic - Residential Use Conflict	Residential Conflict Index	Level-of Compatibility
No conflict (no residential use or not traffic)	0 - 4.9	A
Little residential use or modest traffic	0 - 9.9	B
Both traffic and residential use noticeable; a concern	10 - 24.9	C
Significant conflict between traffic and residential Use	25 - 49.9	D
Continued residential use may be unsatisfactory	50 - 99.9	E
Continued residential use may not be possible	100 +	
<i>Residential Conflict Index – (AADT/feet between residential driveways)</i>		
Arterial – Land Access Conflict	Arterial Conflict Index	Level-of Compatibility
Arterial function not affected by access	0 - 9.9	A
Aware of turning traffic, but not an issue	10 - 19.9	B
Access traffic noticeable; a concern	20 - 49.9	C
Frequent conflict between access and through traffic	50 - 99.9	D
Persistent conflict between access and through traffic	100 - 199.9	E
Either access or through movement not functional	200 +	
<i>Arterial conflict index = (AADT/feet between non-residential driveways)</i>		

Note: Driveway counts measured for one side of road or averaged for both sides.

APPENDIX C: References

Capital District Regional Planning Commission/Town of Glenville Planning Department. *Schenectady County Airport/Town of Glenville Land Use Study*. December, 2000.

Edwards & Kelcey. *City of Schenectady – Urban Bike Route Master Plan*. October, 2001.

Melander, Thomas. *Traffic Data Reports* (unpublished).

Town of Glenville Planning Department. *Glenville Town Center Master Plan*, March 17, 2004.

Sear-Brown Group, *Glenville Crossing - Draft Environmental Impact Statement*, 1995.

APPENDIX D: Environmental Justice

Increased attention has been given to the National Environmental Policy Act (NEPA) with respect to its ability to balance overall mobility benefits of transportation projects against protecting quality of life of low-income and minority residents of a community. President Clinton issued Executive Order 12898 to bring attention to environmental and human health impacts in low-income and minority communities -- referred to as environmental justice - when Federal funding is involved. The goal of environmental justice review is to ensure that any adverse human health or environmental effects of a government action, such as federally supported roadway or transit project, do not disproportionately affect minority or low-income residents of a community. Environmental justice is a public policy objective that can help improve the quality of life for those whose interests have traditionally been overlooked.

The CDTC staff has completed a cursory review of civil rights/environmental justice impacts of transportation actions proposed under this study. Based on a review of the latest socio-economic data available, the CDTC staff has determined that there are no low-income or minority settlements in the Freemans Bridge Road area that would be directly affected by the transportation actions proposed for the corridor. However, additional information gathered through the public review process could suggest a different outcome. In addition, examination of regional equity impacts would be necessary if any transportation action is considered for inclusion in CDTC's *Transportation Improvement Program*.

Equitable access to, consideration within, and effects of the design and implementation of federally assisted projects are also key aspects of environmental justice. However, design and construction is the responsibility of implementing agencies in the region. For projects identified in this study, implementing agencies would be the New York State Department of Transportation, Capital District Transportation Authority, Schenectady County, or the town of Glenville.